

1

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

GENERAL PERMIT CONDITIONS

TERMINATION OF PERMIT TO INSTALL

Substantial construction for installation must take place within 18 months of the effective date of this permit. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

NOTICE OF INSPECTION

The Director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above-named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, or to examine records or reports pertaining to the construction, modification or installation of the source(s) of environmental pollutants identified within this permit.

CONSTRUCTION OF NEW SOURCES

The proposed source(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources are inadequate or cannot meet applicable standards.

If the construction of the proposed source(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of Ohio Administrative Code (OAC) Rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as

2

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet applicable standards.

PERMIT TO INSTALL FEE

In accordance with Ohio Revised Code 3745.11, the specified Permit to Install fee must be remitted within 30 days of the effective date of this permit to install.

PUBLIC DISCLOSURE

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC Rule 3745-49-03.

APPLICABILITY

This Permit to Install is applicable only to the contaminant sources identified. Separate application must be made to the Director for the installation or modification of any other contaminant sources.

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

BEST AVAILABLE TECHNOLOGY

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

PERMIT TO OPERATE APPLICATION

A Permit to Operate application must be submitted to the appropriate field office for each air contaminant source in this Permit to Install. In accordance with OAC Rule 3745-35-02, the application shall be filed no later than thirty days after commencement of operation.

SOURCE OPERATION AFTER COMPLETION OF CONSTRUCTION

This facility is permitted to operate each source described by this permit to install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws and regulations.

4

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

5

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
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AIR EMISSION SUMMARY

The air contaminant emissions units listed below comprise the Permit to Install for **North Star Steel Ohio** located in **Mahoning** County. The emissions units listed below shall not exceed the emission limits/control requirements contained in the table. This condition in no way limits the applicability of any other state or federal regulations. Additionally, this condition does not limit the applicability of additional special terms and conditions of this permit.

P001

<u>Ohio EPA Source Number</u>		<u>Source Identification Description</u>
P905		Single shell AC electric arc furnace (EAF)
	F003	
	P906	

P007

P007
Cont'd

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
Ladle refining station (LRS)	Continuous caster (linked emissions unit with new steel production limitation of 650,000 tons per year) Modified cooling tower	BAT Determination Roof canopy hood fume collection system/direct evacuation control (DEC) system (99 percent particulate emission capture) (fabric filter control device)	Roof canopy hood /direct evacuation fume collection systems (99 percent particulate emission capture) (fabric filter control device)	(estimated 95 percent control of particulate emissions) Water droplet drift eliminators/ (increased water flow rate to 21,000 gpm with total dissolved solids concentration of 840 ppm)
	Modified billet reheat furnace			Use of natural gas/low NO _x burners or equivalent technology
			Ladle cover/mechanical shrouding between ladle and tundish and between tundish and mold	

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
Applicable Federal & OAC Rules			Permit Allowable Mass Emissions and/or Control/Usage Requirements	Fabric filter control device 0.0032 gr/dscf (PM);
3745-31-05		3745-31-05		PM: 0.92 pound/hour, and 3.95 TPY
3745-17-07*	3745-31-05	3745-31-05		PM ₁₀ : 0.70 pound/hour, and 3.00 TPY
3745-17-08*	3745-17-07*	3745-17-07		NO _x : 4.75 pounds/hour, and 16.3 TPY
3745-17-11*	3745-17-08*	3745-17-08*		(0.05 pound/ton) CO: 47.5 pounds/hour, and 162.5 TPY
3745-18-06*	3745-17-11*	3745-17-08*		(0.5 pound/ton) SO ₂ : 9.5 pounds/hour, and 32.5 TPY
3745-21-07	3745-18-06*			(0.10 pound/ton) Lead: 0.02 pound/hour, and 0.07 TPY
3745-21-08	3745-21-08			**
3745-23-06	3745-23-06			PM/PM ₁₀ : 0.26 pound/hour, and 1.1 TPY
40 CFR, Part 60 Subpart AAa*		3745-31-05		NO _x : 3.7 pounds/hour, and 16.3 TPY
		3745-17-07		(0.05 pound/ton) Lead: 0.30 pound/hour, and 1.27 TPY
		3745-17-11*		**
		3745-18-06*		
		3745-21-08		
		3745-23-06		

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
	24.7			
PM/PM ₁₀ : 1.8 pounds/ hour, and 7.9 TPY	pounds/hour, and 108.4 TPY (0.15 pound/MMBTU) CO: 6.6 pounds/hour, and 28.9 TPY (40 pounds/MMCF) SO ₂ : 0.10 pound/hour, and 0.43 TPY (0.6 pound/MMCF) VOC: 0.23 pound/hour, and 1.02 TPY (1.41 pounds/MMCF) **			
Use of Natural Gas/Low NO _x burners or equival ent technol ogy 0.15 pound/M MBTU (NO _x);				
PM/PM ₁₀ : 0.50 pound/h our, and 2.17 TPY (3.0 pounds/ MMCF) NO _x :				

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

- * OAC rules 3745-17-07, 3745-17-08, 3745-17-11, 3745-18-06 and (40 CFR, Part 60 Subpart AAa) (less stringent than BAT)
- ** Subject to the attached Additional Special Terms and Conditions.

SUMMARY
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons/Year</u>	<u>Net Emission Increase (Decrease) _ Tons/Year</u>
PM	90.15	
PM ₁₀	71.19	(5.4)
NO _x	254.80	(12.8)
CO	1,491.40	37.1
SO ₂	65.43	17.3
VOC	59.52	30.6
Lead	1.34	(0.25)

NSPS REQUIREMENTS

The following sources are subject to the applicable provisions of the New Source Performance Standards (NSPS) as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60.

<u>Source Number</u>	<u>Source Description</u>	<u>NSPS Regulation (Subpart)</u>
P905	Single shell AC electric arc furnace (EAF)	AAa

The application and enforcement of these standards are delegated to the Ohio EPA. The requirements of 40 CFR Part 60 are also federally enforceable.

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

Pursuant to the NSPS, the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:

- a. construction date (no later than 30 days after such date);
- b. anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
- c. actual start-up date (within 15 days after such date); and
- d. date of performance testing (If required, at least 30 days prior to testing).

Reports are to be sent to:

Ohio Environmental Protection Agency
DAPC - Permit Management Unit
P.O. Box 163669
Columbus, OH 43216-3669

and **Ohio EPA, Northeast District Office**
2110 E. Aurora Road
Twinsburg, OH 44087

PERFORMANCE TEST REQUIREMENTS

The permittee shall conduct, or have conducted, performance testing on the air contaminant source(s) in accordance with procedures approved by the Agency. Two copies of the written report describing the test procedures followed and the results of such tests shall be submitted and signed by the person responsible for the test. The Director, or an Ohio EPA representative, shall be allowed to witness the test, examine testing equipment, and require the acquisition or submission of data and information necessary to assure that the source operation and testing procedures provide a valid characterization of the emissions from the source and/or the performance of the control equipment.

- A. A completed Intent to Test form shall be submitted to the appropriate Ohio EPA District Office or Local Air Pollution Control Agency where the original permit application was filed. This notice shall be made 30 days in advance and shall specify the source operating parameters, the proposed test procedures, and the time, date, place and person(s) conducting such tests.
- B. Two copies of the test results shall be submitted within 30 days after the completion of the performance test.
- C. Tests shall be performed for the following source(s) and

11

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

pollutants(s) :

Source

Pollutant(s)

**P905 and P906
P001**

**PM, CO
NO_x**

RECORD(S) RETENTION AND AVAILABILITY

All records required by this Permit to Install shall be retained on file for a period of not less than three years unless otherwise indicated by Ohio Environmental Protection Agency. All records shall be made available to the Director, or any representative of the Director, for review during normal business hours.

REPORTING REQUIREMENTS

Unless otherwise specified, reports required by the Permit to Install need only be submitted to **Ohio EPA, Northeast District Office, 2110 E. Aurora Road, Twinsburg, OH 44087.**

WASTE DISPOSAL

The owner/operator shall comply with any applicable state and federal requirements governing the storage, treatment, transport and disposal of any waste material generated by the operation of the sources.

MAINTENANCE OF EQUIPMENT

This source and its associated air pollution control system(s) shall be maintained regularly in accordance with good engineering practices and the recommendations of the respective manufacturers in order to minimize air contaminant emissions.

MALFUNCTION/ABATEMENT

12

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

In accordance with OAC RULE 3745-15-06, any malfunction of the source(s) or associated air pollution control system(s) shall be reported immediately to the **Ohio EPA, Northeast District Office, 2110 E. Aurora Road, Twinsburg, OH 44087.**

Except as provided by OAC Rule 3745-15-06(A)(3), scheduled maintenance of air pollution control equipment that requires the shutdown or bypassing of air pollution control system(s) must be accompanied by the shutdown of the associated air pollution sources.

AIR POLLUTION NUISANCES PROHIBITED

The air contaminant source(s) identified in this permit may not cause a public nuisance in violation of OAC Rule 3745-15-07.

NINETY DAY OPERATING PERIOD

The facility will be permitted to operate during a 90-day period in accordance with OAC Rule 3745-35-02(C)(4)(b). The purpose of this period of operation is to fulfill the performance tests conditions used in the determination of compliance with the provisions of this Permit to Install or other applicable Ohio EPA rules.

CONSTRUCTION COMPLIANCE CERTIFICATION

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

ADDITIONAL SPECIAL TERMS AND CONDITIONS

Introduction

This is a Permit to Install for a new EAF Steel Making Melt Shop and includes the following emissions units:

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

- P905 New Single Shell AC Electric Arc Furnace (EAF)
- P906 New Ladle Refining Station (LRS)
- P007 Modified Cooling Tower
- P001 Modified Billet Reheat Furnace

A. Emission Limitations and Control Requirements

Single Shell AC Electric Arc Furnace (P905)

The Single Shell AC Electric Arc Furnace shall be installed with a roof canopy hood fume collection system in addition to a direct evacuation control (DEC) system. These systems shall be capable of capturing a minimum of 99 percent of the generated emissions of particulate from the air contaminant source operation including charging, melting, refining, and tapping periods in the steel making cycle. Visible particulate emissions of fugitive dust from the electric arc furnace shop due to operation of the EAF shall not exhibit six (6) percent opacity or greater as a six-minute average.

Particulate emissions captured by the fume collection systems for the electric arc furnace shall be exhausted to the existing EAF/LTS fabric filter control device. Particulate emissions from the fabric filter control device stacks shall not exceed 0.0043 grain of particulate emissions per dry standard cubic foot of exhaust gases and visible particulate emissions from the fabric filter stacks shall not exhibit three (3) percent opacity or greater as a six-minute average.

North Star Steel Ohio shall maintain the existing EAF fabric filter control device dust-handling system (F004) to ensure compliance with the applicable visible particulate emission standard of less than ten (10) percent opacity as a six-minute average.

Ladle Refining Station (P906)

The Ladle Refining Furnace shall be installed with roof canopy hood / direct evacuation fume collection systems capable of capturing a minimum of 99 percent of the generated emissions of particulate from the air contaminant source operation including electric arc heating, argon stirring, bulk alloy additions, alloy wire feed, manual door emissions and steel processing in the ladle refining station. Visible particulate emissions of fugitive dust from the electric arc furnace shop due to operation of the ladle refining station shall not exhibit six (6) percent opacity or greater as a six-minute average.

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

Particulate emissions captured by the fume collection systems for the ladle refining station shall be exhausted to the existing EAF/LTS fabric filter control device. Particulate emissions from the fabric filter control device stacks shall not exceed 0.0043 grain of particulate emissions per dry standard cubic foot of exhaust gases and visible particulate emissions from the fabric filter stacks shall not exhibit three (3) percent opacity or greater as a six-minute average.

Modified Cooling Tower (P007)

The existing cooling tower is to be modified increasing the water flow rate to a maximum of 21,000 gpm. The monthly average concentration of total dissolved solids (TDS) in the cooling tower water shall not exceed 840 ppm. The cooling tower will be equipped with drift eliminators to reduce drift water droplets by inertial separation.

Modified Billet Reheat Furnace (P001)

The existing billet reheat furnace shall be modified by the installation of low-NO_x burners or equivalent technology to reduce NO_x emissions to 0.15 LB/MMBTU.

B. Operational Restrictions

Single Shell AC Electric Arc Furnace / Ladle Refining Station / Continuous Caster Steel Production Limitation

North Star Steel Ohio shall restrict their annual liquid steel production to 650,000 tons per year based upon a rolling 365-day period.

In order to assure federal enforceability, for the first twelve calendar months of operation, North Star Steel Ohio shall not exceed the following liquid steel production limits for the specific time period.

<u>Month</u>	<u>Total Allowable Liquid Steel Production</u>
1	55,000 tons
1-2	110,000 tons
1-3	165,000 tons

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

1-4	220,000 tons
1-5	275,000 tons
1-6	330,000 tons
1-7	385,000 tons
1-8	440,000 tons
1-9	495,000 tons
1-10	550,000 tons
1-11	605,000 tons
1-12	650,000 tons

After the first twelve months of operation, North Star Steel Ohio shall restrict the liquid steel production to 650,000 tons per year, based upon a consecutive 365-day period, rolled on a daily basis.

C. Monitoring and Recordkeeping Requirements

EAF/LRS/Continuous Caster Production Monitoring and Record Keeping

1. North Star Steel Ohio shall maintain daily records of the following information:
 - a. the liquid steel production rate for each day; and,
 - b. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 365-day summation of the liquid steel production rates.

Also, during the first 12 calendar months of operation following the issuance of this permit, North Star Steel Ohio shall record the cumulative liquid steel production rate for each calendar month.

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

EAF Fabric Filter Visible Emissions Monitoring and RecordKeeping

Visible particulate emission observations of the EAF/LRS multiple-stack positive-pressure fabric filters shall occur at least once per day of operation. The observations shall occur when the EAF is operating in the melting and refining phase of a heat cycle. Additional observations shall be made during the electric arc heating phase of the LRS processing cycle. These observations shall be taken in accordance with Method 9 of 40 CFR Part 60, Appendix A, and shall include at least three 6-minute periods during EAF melting and refining and at least one 6-minute period of the LRS electric arc heating phase in the processing cycle. The opacity shall be recorded for stack(s) where the greatest opacity of the visible emissions are observed in accordance with the procedures listed in Method 9 of 40 CFR Part 60, Appendix A. Records shall be maintained of any 6-minute average that is in excess of the emission limit specified and all visible emission observation data shall be retained for at least 5 years following the date of the recording.

EAF and Fabric Filter Control System Fan Operations Monitoring and Recordkeeping

North Star Steel Ohio shall install, calibrate and maintain a monitoring device that allows the pressure in the free space inside the EAF to be monitored. However, should the New Source Performance Standards for Electric Arc Furnaces be amended, North Star Steel Ohio can amend the monitoring and recordkeeping provisions of this permit to be consistent with the revised performance standards. The monitoring device may be installed in any appropriate location in the EAF duct prior to the introduction of ambient air such that reproducible results will be obtained. The pressure monitoring device shall have an accuracy of plus or minus 5mm of water gauge over its normal operating range and shall be calibrated according to the manufacturer's instructions. The pressure shall be recorded as 15-minute integrated averages. The pressure determined during the most recent visible particulate emission compliance demonstration shall be maintained at all times when the EAF is operating in a meltdown and refining period. Operation at higher pressures will be considered by the Ohio EPA, Division of Air Pollution Control (DAPC) to be unacceptable operation

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

and maintenance of the control system. North Star Steel Ohio may petition the Ohio EPA for reestablishment of the 15-minute integrated average of the pressure whenever North Star Steel Ohio can

demonstrate to the Agency's satisfaction that EAF operating conditions upon which the pressures were previously established are no longer applicable.

North Star Steel Ohio shall check and record on a once-per-shift basis the furnace static pressure in the EAF and either (1) check and record the fabric filter control system fan motor amperes and damper position for each of the operating fans on a once-per-shift basis; or (2) install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood. The monitoring device may be installed in any appropriate location in the exhaust duct such that reproducible flow rate monitoring devices shall have an accuracy of plus or minus 10 percent over their normal operating range and shall be calibrated according to the manufacturer's instructions. The Ohio EPA, DAPC may require North Star Steel Ohio to demonstrate the accuracy of the monitoring devices relative to Methods 1 and 2 of Appendix A of 40 CFR, Part 60. The values of these parameters as determined during the most recent visible particulate emission compliance demonstration shall be maintained at the appropriate levels for each applicable period. Operation at other than baseline values will be considered by the Ohio EPA, DAPC to be unacceptable operation and maintenance of the control system. North Star Steel Ohio may petition the Ohio EPA for reestablishment of these parameters whenever North Star Steel Ohio can demonstrate to the Agency's satisfaction that the operating conditions upon which the parameters were previously established are no longer applicable.

North Star Steel Ohio shall perform monthly operational status inspections of the equipment that is important to the performance of the total capture systems (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 ductwork or hoods, flow constrictions caused by dents or accumulated dust in

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

ductwork, and fan erosion.) Any deficiencies shall be recorded and proper maintenance performed. North Star Steel Ohio may petition the Ohio EPA, DAPC to approve any alternative to monthly operational status inspections that will provide a continuous record of the operation of each emission capture system; and, upon approval by the Ohio EPA and USEPA, an alternative method may be established to replace the monitoring and recordkeeping requirements found above in the monitoring and/or recordkeeping requirements of this permit.

Cooling Tower Monitoring and Recordkeeping

North Star Steel Ohio shall properly install, operate and maintain equipment to monitor the cooling tower water flow rate. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. North Star Steel Ohio shall monitor and record the cooling tower water flow rate, in gallons per minute, at a minimum frequency of once/day.

North Star Steel Ohio shall propose a cooling tower water sampling frequency and monitoring procedure to adequately demonstrate compliance with the monthly average concentration of total dissolved solids (TDS) limitation of 840 ppm.

Records Retention

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

D. Reporting Requirements

1. North Star Steel Ohio shall submit deviation (excursion) reports that identify all exceedances of the rolling, 365-day liquid steel production rate limitation for the EAF/LRS/Continuous Caster and, for the first 12 calendar months of operation following the issuance of this permit, all exceedances of the maximum allowable cumulative production levels for these emissions units.

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

2. North Star Steel Ohio shall submit deviation (excursion) reports that identify all exceedances of the fabric filter control device stack visible particulate emission limit. For the purposes of these reports, exceedances are defined as all 6-minute periods during which the average opacity is three (3) percent or greater.
3. North Star Steel Ohio shall submit quarterly written deviation (excursion) reports that identify all exceedances of the values established under the monitoring and/or recordkeeping requirements of this permit.
4. North Star Steel Ohio shall submit deviation (excursion) reports that identify all periods of time during which the cooling tower water flow rate exceeds 21,000 gpm or the monthly average concentration of total dissolved solids (TDS) in the cooling tower water exceeds 840 ppm.
5. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Ohio EPA, Northeast District Office. If no deviations occurred during a calendar quarter, North Star Steel Ohio shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

E. Testing Requirements

1. North Star Steel Ohio shall conduct, or have conducted, particulate emission testing for emissions units P905 and P906 in accordance with the following requirements and the requirements of 40 CFR Part 60.8:

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

- a. within 60 days after achieving the maximum production rate at which the new EAF and LRS will be operated, but not later than 180 days after initial startup.

During this particulate emission compliance demonstration, the control system fan motor amperes and damper positions for each of the operating fans will be recorded as well as furnace static pressure for the EAF. Also, the average fan motor amperes will be determined for each fan and a 15-minute integrated average static pressure in the EAF will be established during the melting and refining periods.

The test(s) shall be conducted while emissions units P905 and P906 are operating at or near their maximum capacities, unless otherwise specified or approved by Ohio EPA, DAPC.

2. North Star Steel Ohio shall conduct, or have conducted, NO_x emission testing for emissions unit (P001) in accordance with the following requirements:
 - a. the emission testing shall be conducted within 3 months after modification of the billet reheat furnace (P001);
 - b. the emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate for NO_x;
 - c. the following test method shall be employed to demonstrate compliance with the allowable mass emission rate for NO_x: Method 7E of 40 CFR Part 60, Appendix A. Alternative USEPA approved test methods may be used with prior approval from the Ohio EPA; and,
 - d. the test shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio EPA, Northeast District Office.

3. Compliance with the particulate and visible emission limitations in Section A. of these Additional Special Terms and Conditions shall be determined in accordance with the following methods:

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

EAF-LRS Fabric Filter Control Device Stacks

a. Emission Limitation

Particulate emissions shall not be discharged into the atmosphere from the control device in excess of 0.0043 grain PM per dry standard cubic foot of exhaust gases.

Applicable Compliance Method

Test Methods as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60, "Standards of Performance for New Stationary Sources":

- a. Method 1 for sample and velocity traverses;
- b. Method 2 for velocity and volumetric flow rate;
- c. Method 3 for gas analysis; and,
- d. Method 5D for positive pressure fabric filters for concentration of particulate matter and associated moisture content.

EAF-LRS Fabric Filter Control Device Stacks

b. Emission Limitation

Visible particulate emissions shall not be discharged into the atmosphere from the control device stacks and exhibit three (3) percent opacity or greater.

Applicable Compliance Method

Test Method 9 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60, "Standards of Performance for New Stationary Sources" for the opacity of visible emissions.

EAF - LRS Emission Units:

c. Emission Limitations

For EAF (P905) - 4.0 pounds of CO per ton of steel, (estimated) limit presented as BAT by North

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

Star Steel Ohio and the EAF vendor.

For LRS (P906) - 0.5 pound of CO per ton of steel, (estimated) limit presented as BAT by North Star Steel Ohio.

Applicable Compliance Method

The new EAF design is represented as the best available control technology for the control of CO emissions. Within six months after commencement of operation of the EAF and LRS, the applicant will perform a test of CO emissions in accordance with Method 10, 40 CFR Part 60. The Ohio EPA may establish a numeric CO limit based on the post-construction testing, provided that such limits are representative of at or near their maximum capacities and to allow for expected variability in test procedures.

EAF Shop

d. Emission Limitation

Visible particulate emissions shall not be discharged into the atmosphere from the EAF shop due to operations of the new EAF or LRS which exhibit six (6) percent opacity or greater.

Applicable Compliance Method

Test Method 9 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60, "Standards of Performance for New Stationary Sources" for the opacity of visible emissions.

EAF-Fabric Filter Control Device Dust-Handling System:

e. Emission Limitation

Visible particulate emissions shall not be discharged into the atmosphere from the dust-handling system and exhibit ten (10) percent opacity or greater.

Applicable Compliance Method

Test Method 9 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60, "Standards of Performance for New Stationary Sources" for the

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

opacity of visible emissions.

Modified Billet Reheat Furnace:

f. Emission Limitation

NO_x emissions from the modified billet reheat furnace stack(s) shall not exceed 0.15 LB/MMBTU.

Applicable Compliance Method

Test Method 7E as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60, "Standards of Performance for New Stationary Sources". Alternative USEPA approved test methods may be used with prior approval from the Ohio EPA.

g. Emission Limitation

Visible particulate emissions from the billet reheat furnace shall not exceed twenty percent opacity, as a six-minute average except as follows: Visible particulate emissions from the billet reheat furnace may exceed twenty percent opacity, as a six-minute average, for not more than six consecutive minutes in any sixty minutes, but shall not exceed sixty percent opacity, as a six-minute average, at any time.

Applicable Compliance Method

Visible particulate emissions shall be determined according to test method nine as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources".

4. Not later than 30 days prior to any proposed test date(s), North Star Steel Ohio shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emission test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s). North Star Steel Ohio may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA Northeast District Office.

F. Miscellaneous Requirements

Scrap Management Program

Within six months of start up of the new EAF, North Star Steel Ohio shall submit to Ohio EPA, Northeast District Office, NEDO, a "Scrap Management Program" developed to minimize the use of scrap that contains extraneous materials such as oiled steel, pipes with residues and coatings, enameled materials, transmissions, shock absorbers, tinned materials, rubber, concrete, dirt or wood that may contaminate the scrap that is charged into the EAF. The "Scrap Management Program" shall be reviewed and approved by NEDO and shall be viewed as part of the operational requirements for the EAF permit. Any change to the "Scrap Management Program" that would increase the amount of these compounds in the scrap, or result in the emissions of an air contaminant not previously emitted, must be approved by NEDO.

Emissions Unit Shut Down Requirement

Facility Name: **North Star Steel Ohio**

Application Number: **02-2439**

Date: **Draft PTI (date will be entered upon final issuance)**

The existing EAFs (P901 and P902) and the Ladle Treatment Station (P903) will be shut down upon start-up of the new EAF and LRS (P905 and P906) installed under PTI No. 02-2439.

Contemporaneous Emissions Increases and Decreases

Installation of the new Electric Arc Furnace (P905) and Ladle Refining Station (P906) with modifications to the Cooling Tower (P007) and Billet Reheat Furnace (P001) under (PTI No. 02-2439), including emission increases from linked emissions units and other contemporaneous emission increases and decreases at the facility, in addition to the permanent shutdown of Electric Arc Furnaces (P901 and P902) and Ladle Treatment Station (P903) will result in net emission increases as follows:

	<u>PM₁₀</u>	<u>CO</u>	<u>NO_x</u>	<u>SO₂</u>	<u>VOC</u>	<u>Pb</u>
New EAF&LRS (P905&P906), Modified Cooling Tower (P007), Modified Billet Reheat Furnace (P001), and Linked Emissions Units Including the Continuous Caster (F003) and Pipemill (P002)	70.5	1471	134.4	65.1	58.8	1.34
	<u>PM₁₀</u>	<u>CO</u>	<u>NO_x</u>	<u>SO₂</u>	<u>VOC</u>	<u>Pb</u>
Contemporaneous Emission Increases and <u>Decreases</u> Including the <u>Permanent</u> Retirement of the Existing EAF's (P901 & P902)	(75.9)	(1433.9)	(147.2)	(47.8)	(28.2)	(1.59)
Net Change	(5.4)	37.1	(12.8)	17.3	30.6	(0.25)
Significance Level	15	100	40	40	40	0.6