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ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY CLASS I PERMIT

COMPANY NAME: North Star Steel Company
FACILITY NAME: North Star Steel Company
PERMIT NUMBER: 1000992
DATE ISSUED: Draft Permit
EXPIRATION DATE:

SUMMARY

This operating permit is issued to North Star Steel Company, the Permittee, for operation of the North Star Steel Company steel manufacturing mini-mill, located approximately four miles south-southwest of the town of Kingman in Mohave County, Arizona. The steel mini-mill, as proposed to be modified, will recycle steel scrap to produce up to 800,000 tons (short) per year of steel reinforcing bar, steel wire, and bar and steel wire products.

The North Star Steel company mini-mill occupies most of a 425-acre site in the Mohave County I-40 Industrial Corridor. The emission units and emitting activities at the facility are the melt shop, which includes the electric arc shaft furnace (EASF), the ladle metallurgical furnace (LMF), meltshop baghouse, meltshop baghouse dust handling system, the continuous casting machine, slag handling operations, two natural gas-fired tundish preheaters, two natural gas-fired ladle preheaters, one natural gas-fired tundish dryer, two natural gas-fired ladle dryers, miscellaneous steelmaking operations, one natural gas-fired reheat furnace, three natural gas-fired cut-off torches, one natural gas-fired bar test furnace, one natural gas-fired boiler, two natural gas-fired water heaters, two mechanical-draft wet cooling towers, and paved and unpaved roads.

Pollution control measures and equipment include a scrap management plan to minimize volatile organic compounds (VOCs) and trace metals emissions; direct-shell evacuation control (DEC) system and enhanced secondary post-combustion chamber on the EASF exhaust; a baghouse on the melt shop exhaust; low-NOx burners on the reheat furnace; high-efficiency drift eliminators on the wet cooling towers; vacuuming of paved roads; and use of a chemical dust suppressant on unpaved roads.

All definitions, terms, and conditions used in this permit conform to those in the Arizona Administrative Code (A.A.C.) R18-2-101 and Title 40 of the Code of Federal Regulations (CFR), except as otherwise defined in this permit. Unless noted otherwise, references cited in the permit conditions refer to the A.A.C. All material permit conditions have been identified within the permit by a double underline. All terms and conditions in this permit are enforceable by the Administrator of the U.S. Environmental Protection Agency, except for those terms and conditions that have been designated as "State Requirements."

North Star Steel Company is a major source because the potential emission rates of the following pollutants are greater than 100 tons per year: (i) particulate matter (PM), (ii) nitrogen oxides(NOx), (iii) carbon monoxide (CO), and (iv) volatile organic compounds (VOCs). This permit is issued in accordance with Titles I and V of the Clean Air Act, and Title 49, Chapter 3 of the Arizona Revised Statutes (ARS).

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Table 1: Summary of Permit Requirements

This table summarizes certain requirements that are applicable to North Star Steel Company operations. It is intended for reference use only. The enforceable terms and conditions of this permit are contained in Attachments A through E of this permit.

Emission Unit[1]	Pollutants Emitted	Control Measure	Emission Limits / Standards	Monitoring /Recordkeeping	Reporting[2]	Testing Frequency/ Methods
POINT SOURCE **P1. Melt Shop Baghouse Vent** (includes exhaust streams from EASF, LMF, melt shop ventilation system) A.A.C. R-18-2-306, R18-2-331, & R-18-2-406; 40 CFR Part 60 Subparts A and AAa	Visible Emissions	Baghouse	Opacity < 3%	Bag leak detection system	Quarterly excess emission reports	Initial PerformanceTest EPA Method 9
	PM	Baghouse	15.4 lb/hr emission rate and 0.0018 gr/dscf exhaust gas concentration	Bag leak detection system	Quarterly excess emission reports	Initial and annual performance tests EPA Method 5D for PM
	PM_{10}	Baghouse	44.5 lb/hr emission rate and 0.0052 gr/dscf exhaust gas concentration	Bag leak detection system	Quarterly excess emission reports	Initial and annual performance tests Modified EPA Methods 201A and 202
	SO_2	Limit sulfur in scrap and carbon feed to EASF; natural gas-fired burners in EASF	Emission rate limit based on 0.200 lb per ton of steel produced, not to exceed 24.0 lb/hr, 24-hr rolling average basis	CERMS (Certified)	Quarterly excess emission reports	Initial and annual performance tests EPA Method 6C
	NO_x	Minimize air infiltration to EASF and LMF; natural gas-fired burners in EASF	Emission rate limit based on 1.050 lb per ton of steel produced, not to exceed 126.0 lb/hr, 24-hr rolling average basis	CERMS (Certified)	Quarterly excess emission reports	Initial and annual performance tests EPA Method 7E
	CO	Direct-shell evacuation control system, enhanced secondary post-combustion system	Emission rate limit based on 6.000 lb per ton of steel produced, not to exceed 720.0 lb/hr, 24-hr rolling average basis	CERMS (Certified)	Quarterly excess emission reports	Initial and annual performance tests EPA Method 10
	VOC	Direct-shell evacuation control system, enhanced secondary post-combustion system	42.3 lb/hr emission rate and 0.352 lb per ton of steel produced	---	---	Initial Performance Test Subsequent Performance tests - every six month EPA Method 25A

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Emission Unit[1]	Pollutants Emitted	Control Measure	Emission Limits / Standards	Monitoring /Recordkeeping	Reporting[2]	Testing Frequency/ Methods
	Pb	Scrap management, baghouse	0.30 lb/hr emission rate	---	---	Initial Performance Test Subsequent Performance tests - every six month EPA Method 12
P2. Melt Shop Baghouse Dust Handling System A.A.C. R18-2-331, R-18-2-406	Visible Emissions	No controls	Zero opacity	Perform melt shop opacity observations once per eight-hour shift	Quarterly excess emission reports	EPA Reference Method 9
P3. Melt Shop Fugitive Emissions A.A.C. R18-2-331, R-18-2-406	Visible Emissions	Melt shop ventilation system	Opacity < 6%	Perform DEC system operational status checks weekly; check and record DEC system fan motor amperes and damper position once per eight-hour shift; perform melt shop opacity observations once per eight-hour period	Quarterly excess emission reports	EPA Reference Method 9
P4. Reheat Furnace A.A.C. R-18-2-331, & R-18-2-406; 40 CFR Part 60 Subparts A and AAa	Visible Emissions	Use only natural gas as fuel	Zero opacity	---	---	Initial Performance Test EPA Reference Method 9
	PM/PM_{10}	Use only natural gas as fuel	0.55 lb/hr emission rate and 0.0075 lb per million Btu heat input	Maintain daily records of quantity of natural gas combusted Bound logbook	---	Initial Performance Test Subsequent Performance tests - every six month EPA Reference Methods 201A and 202
	SO_2	Use only natural gas as fuel	---	Maintain daily records of quantity of natural gas combusted Bound logbook	---	---
	NO_x	Use only natural gas as fuel	7.40 lb/hr emission rate and 0.1 lb per million Btu heat input	Maintain daily records of quantity of natural gas combusted Bound logbook	---	Initial Performance Test Subsequent Performance tests - every six month EPA Reference Method 7E

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Emission Unit[1]	Pollutants Emitted	Control Measure	Emission Limits / Standards	Monitoring /Recordkeeping	Reporting[2]	Testing Frequency/ Methods
	CO	Use only natural gas as fuel	2.22 lb/hr emission rate and 0.030 lb per million Btu heat input	Maintain daily records of quantity of natural gas combusted Bound logbook	---	Initial Performance Test Subsequent Performance tests - every six month EPA Reference Method 10
	VOC	Use only natural gas as fuel	0.10 lb/hr emission rate and 0.0014 lb per million Btu heat input	Maintain daily records of quantity of natural gas combusted	---	---
P4. Direct Cooling Water Cooling Tower (2 cells) A.A.C. R18-2-406	Visible Emissions	High Efficiency Drift Eliminators	Opacity ≤ 5 %	---	---	Initial Performance Test EPA Reference Method 9
	PM	High Efficiency Drift Eliminators	0.46 lb/hr emission rate and 0.55 lb per million gallons circulating water	Maintain records of water pump capacity; measure (using EPA Method 163.1) and record once per month total solids content of circulating water; maintain records of guaranteed design total drift rate Bound logbook	Quarterly excess emission reports	---
P5. Indirect Cooling Water Cooling Tower (3 cells) A.A.C. R18-2-406	Visible Emissions	High Efficiency Drift Eliminators	Opacity ≤ 5 %	---	---	Initial Performance Test EPA Reference Method 9
	PM	High Efficiency Drift Eliminators	2.76 lb/hr emission rate and 1.33 lb per million gallons circulating water	Maintain records of water pump capacity; measure (using EPA Method 163.1) and record once per month total solids content of circulating water; maintain records of guaranteed design total drift rate Bound logbook	Quarterly excess emission reports	---

Emission Unit[1]	Pollutants Emitted	Control Measure	Emission Limits / Standards	Monitoring /Recordkeeping	Reporting[2]	Testing Frequency/ Methods
F1. Paved Roadways A.A.C. R18-2-406	Visible Emissions	Vacuuming and Watering	Opacity ≤ 40%	---	---	Initial Performance Test EPA Reference Method 9
	PM_{10}	Vacuuming and Watering	Maintain roadway silt loading not to exceed 3.3 grams per square meter	Measure and record roadway silt loading monthly	Quarterly excess emission reports	---
F2. Unpaved Roadways A.A.C. R18-2-406	Visible Emissions	Application of Chemical Dust Suppressant	Opacity ≤ 40%	---	---	Initial Performance Test EPA Reference Method 9
	PM_{10}	Application of Chemical Dust Suppressant	Maintain surface material silt content not to exceed 0.56 percent by weight and moisture content of at least 0.2 percent by weight	Measure and record silt content and moisture content of surface material weekly	Quarterly excess emission reports	---
F3. All Other Non-point Sources	Visible Emissions	—	Opacity ≤ 40%	—	—	Initial Performance Test EPA Reference Method 9

Note: --- Not required

[1] All emission units are subject to Best Available Control Technology (BACT), per A.A.C. R18-2-406

[2] Semiannual compliance certification required for all emission units

Table 2: Summary of CAM Requirements

This table summarizes certain requirements that are applicable to North Star Steel Company operations pursuant to 40 CFR part 64 and A.A.C. R18-2-306.A.3.a.i. It is intended for reference use only. The enforceable terms and conditions of this permit are contained in Attachments A through E of this permit.

Melt Shop Baghouse PM Limits		
	Indicator No. 1: Bag leak detection system signal	Indicator No. 2: Inspection & Maintenance
Measurement Approach	Relative PM concentration is indicated by a triboelectric signal	Inspections and maintenance activities must be performed on the bag leak detection system, baghouse hoppers, and bag cleaning mechanisms to ensure proper operation
Indicator Range	Signal above the alarm set point, to be determined during initial system verification testing	n/a
Performance Criteria - Data Representativeness	Sensor must provide output of relative particulate matter loading	Inspections and maintenance activities must be performed on the bag leak detection system, baghouse hoppers, and bag cleaning mechanisms
Performance Criteria - Operation	n/a	n/a
Performance Criteria - QA/QC Practices	Inspections and maintenance activities must be performed on the bag leak detection system	Qualified personnel perform inspections & maintenance
Performance Criteria - Monitoring Frequency	Relative PM concentration is recorded continuously	Inspections of bag leak detection system are as recommended by the manufacturer; inspections of baghouse hoppers are at least weekly; inspections of bag cleaning mechanisms are at least monthly
Performance Criteria - Data Collection Procedure	Relative PM concentration is recorded continuously	Records are created for each inspection & maintenance activity
Performance Criteria - Averaging Period	Investigation and possible corrective action are initiated within 24 hours after the alarm sounds	n/a
Melt Shop Baghouse CO Limits & Standards		

	Indicator No. 1: CO emission rate	Indicator No. 2: DEC system fan motor amperage
Measurement Approach	CO emission rate is measured by a CERMS	Amperage is measured by an ammeter
Indicator Range	CO emission rate above the emission limit constitutes an exceedance	To be established after startup
Performance Criteria - Data Representativeness	CERMS must meet 40 CFR 60 appendix B performance specifications	n/a
Performance Criteria - Operation	CERMS must meet 40 CFR 60 appendix B performance specifications	n/a
Performance Criteria - QA/QC Practices	CERMS must meet 40 CFR 60 appendix B performance specifications and 40 CFR 60 appendix F quality assurance procedures	n/a
Performance Criteria - Monitoring Frequency	Monitoring is continuous; CERMS must meet 40 CFR 60 appendix B performance specifications	Continuous
Performance Criteria - Data Collection Procedure	All measurement data are recorded; CERMS must meet 40 CFR 60 appendix B performance specifications	All measurement data are recorded
Performance Criteria - Averaging Period	CO emission rate is computed on a rolling 24-hour basis	Instantaneous

ATTACHMENT "A": GENERAL PROVISIONS

Air Quality Control Permit No. 1000992
for
North Star Steel Company

I. PERMIT EXPIRATION AND RENEWAL [ARS § 49-426.F, A.A.C. R18-2-304.C.2, and -306.A.1]

A. This permit is valid for a period of five years from the date of issuance.

B. The Permittee shall submit an application for renewal of this permit at least 6 months, but not more than 18 months, prior to the date of permit expiration.

II. COMPLIANCE WITH PERMIT CONDITIONS [A.A.C. R18-2-306.A.8.a and b]

A. The Permittee shall comply with all conditions of this permit including all applicable requirements of the Arizona air quality statutes and air quality rules. Any permit noncompliance constitutes a violation of the Arizona Revised Statutes and is grounds for enforcement action; for permit termination, revocation and reissuance, or revision; or for denial of a permit renewal application. In addition, noncompliance with any federally enforceable requirement constitutes a violation of the Clean Air Act.

B. It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

III. PERMIT REVISION, REOPENING, REVOCATION AND REISSUANCE, OR TERMINATION FOR CAUSE [A.A.C. R18-2-306.A.8.c, -321.A.1, and -321.A.2]

A. The permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit revision, revocation and reissuance, termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

B. The permit shall be reopened and revised under any of the following circumstances:

1. Additional applicable requirements under the Clean Air Act become applicable to the Class I source. Such a reopening shall only occur if there are three or more years remaining in the permit term. The reopening shall be completed no later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless an application for renewal has been submitted pursuant to A.A.C. R18-2-322.B. Any permit revision required pursuant to this subparagraph shall comply with the provisions in A.A.C. R18-2-322 for permit renewal and shall reset the five year permit term.

2. Additional requirements, including excess emissions requirements, become applicable to an affected source under the acid rain program. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the Class I permit.

3. The Director or the Administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.

4. The Director or the Administrator determines that the permit needs to be revised or revoked to assure compliance with the applicable requirements.

C. Proceedings to reopen and reissue a permit, including appeal of any final action relating to a permit reopening, shall follow the same procedures as apply to initial permit issuance and shall, except for reopenings under Condition III.B.1 above, affect only those parts of the permit for which cause to reopen exists. Such reopenings shall be made as expeditiously as practicable. Permit reopenings for reasons other than those stated in Condition III.B.1 above shall not result in a resetting of the five year permit term.

IV. POSTING OF PERMIT [A.A.C. R18-2-315]

A. The Permittee shall post this permit or a certificate of permit issuance where the facility is located in such a manner as to be clearly visible and accessible. All equipment covered by this permit shall be clearly marked with one of the following:

1. Current permit number; or

2. Serial number or other equipment ID number that is also listed in the permit to identify that piece of equipment.

B. A copy of the complete permit shall be kept on site.

V. FEE PAYMENT [A.A.C. R18-2-306.A.9 and -326]

The Permittee shall pay fees to the Director pursuant to ARS § 49-426(E) and A.A.C. R18-2-326.

VI. ANNUAL EMISSION INVENTORY QUESTIONNAIRE [A.A.C. R18-2-327.A and B]

A. The Permittee shall complete and submit to the Director an annual emissions inventory questionnaire. The questionnaire is due by March 31st or ninety days after the Director makes the inventory form available each year, whichever occurs later, and shall include emission information for the previous calendar year.

B. The questionnaire shall be on a form provided by the Director and shall include the information required by A.A.C. R18-2-327.

VII. COMPLIANCE CERTIFICATION [A.A.C. R18-2-309.2.a, -309.2.c-d, and -309.5.d]

A. The Permittee shall submit a compliance certification to the Director semiannually which describes the compliance status of the source with respect to each permit condition. The first certification shall be submitted no later than May 15th, and shall report the compliance status of the source during the period between October 1st of the previous year and March 31st of the current year. The second certification shall be submitted no later than November 15th, and shall report the compliance status of the source during the period between April 1st and September 30th of the current year.

The compliance certifications shall include the following:

1. Identification of each term or condition of the permit that is the basis of the certification;

2. Identification of the methods or other means used by the Permittee for determining the compliance status with each term and condition during the certification period, and whether the methods or other means provide continuous or intermittent data;

3. The status of compliance with the terms and conditions of this permit for the period covered by the certification, based on the methods or means designated in Condition VII.A.2 above. The certifications shall identify each deviation and take it into account for consideration in the compliance certification;

4. For emission units subject to 40 CFR Part 64, the certification shall also identify as possible exceptions to compliance any period during which compliance is required and in which an excursion or exceedance defined under 40 CFR Part 64 occurred;

5. All instances of deviations from permit requirements reported pursuant to Condition XII.B of this Attachment; and

6. Other facts the Director may require to determine the compliance status of the source.

B. A copy of all compliance certifications shall also be submitted to the EPA Administrator.

C. If any outstanding compliance schedule exists, a progress report shall be submitted with the semi-annual compliance certifications required in Condition VII.A above.

VIII. CERTIFICATION OF TRUTH, ACCURACY AND COMPLETENESS

[A.A.C. R18-2-304.H]

Any document required to be submitted by this permit, including reports, shall contain a certification by a responsible official of truth, accuracy, and completeness. This certification shall state that,

based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

IX. INSPECTION AND ENTRY [A.A.C. R18-2-309.4]

Upon presentation of proper credentials, the Permittee shall allow the Director or the authorized representative of the Director to:

A. Enter upon the Permittee's premises where a source is located, emissions-related activity is conducted, or where records are required to be kept under the conditions of the permit;

B. Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;

C. Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;

D. Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements; and

E. Record any inspection by use of written, electronic, magnetic and photographic media.

X. PERMIT REVISION PURSUANT TO FEDERAL HAZARDOUS AIR POLLUTANT STANDARD [A.A.C. R18-2-304.C]

If this source becomes subject to a standard promulgated by the Administrator pursuant to Section 112(d) of the Act, then the Permittee shall, within twelve months of the date on which the standard is promulgated, submit an application for a permit revision demonstrating how the source will comply with the standard.

XI. ACCIDENTAL RELEASE PROGRAM [40 CFR Part 68]

If this source becomes subject to the provisions of 40 CFR Part 68, then the Permittee shall comply with these provisions according to the time line specified in 40 CFR Part 68.

XII. EXCESS EMISSIONS, PERMIT DEVIATIONS, AND EMERGENCY REPORTING

A. Excess Emissions Reporting [A.A.C. R18-2-310.01.A and -310.01.B]

1. Excess emissions shall be reported as follows:

a. The Permittee shall report to the Director any emissions in excess of the limits established by this permit. Such report shall be in two parts as specified below:

(1) Notification by telephone or facsimile within 24 hours of the time when the Permittee first learned of the occurrence of excess emissions including all available information from Condition XII.A.1.b below.

(2) Detailed written notification by submission of an excess emissions report within 72 hours of the notification pursuant to Condition XII.A.1.a.(1) above.

b. The report shall contain the following information:

(1) Identity of each stack or other emission point where the excess emissions occurred;

(2) Magnitude of the excess emissions expressed in the units of the applicable emission limitation and the operating data and calculations used in determining the magnitude of the excess emissions;

(3) Date, time and duration, or expected duration, of the excess emissions;

(4) Identity of the equipment from which the excess emissions emanated;

(5) Nature and cause of such emissions;

(6) If the excess emissions were the result of a malfunction, steps taken to remedy the malfunction and the steps taken or planned to prevent the recurrence of such malfunctions; and

(7) Steps taken to limit the excess emissions. If the excess emissions resulted from start-up or malfunction, the report shall contain a list of the steps taken to comply with the permit procedures.

2. In the case of continuous or recurring excess emissions, the notification requirements of this section shall be satisfied if the source provides the required notification after excess emissions are first detected and includes in such notification an estimate of the time the excess emissions will continue. Excess emissions occurring after the estimated time period, or changes in the nature of the emissions as originally reported, shall require additional notification pursuant to Condition XII.A.1 above. [A.A.C. R18-2-310.01.C]

B. Permit Deviations Reporting [A.A.C. R18-2-306.A.5.b]

The Permittee shall promptly report deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. Prompt reporting shall mean that the report was submitted to the Director by certified mail, facsimile, or hand delivery within two working days of the time the deviation occurred.

C. Emergency Provision [A.A.C. R18-2-306.E]

1. An "emergency" means any situation arising from sudden and reasonable unforeseeable events beyond the control of the source, including acts of God, that require immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

2. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if Condition XII.C.3 is met.

3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

a. An emergency occurred and that the Permittee can identify the cause(s) of the emergency;

b. The permitted facility was being properly operated at the time;

c. During the period of the emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and

d. The Permittee submitted notice of the emergency to the Director by certified mail, facsimile, or hand delivery within two working days of the time when emission limitations were exceeded due to the emergency. This notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective action taken.

4. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

5. This provision is in addition to any emergency or upset provision contained in any applicable requirement.

D. Compliance Schedule [ARS § 49-426.I.5]

For any excess emission or permit deviation that cannot be corrected with 72 hours, the Permittee is required to submit a compliance schedule to the Director within 21 days of such occurrence. The compliance schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with the permit terms or conditions that have been violated.

E. Affirmative Defenses for Excess Emissions Due to Malfunctions, Startup, and Shutdown [A.A.C. R18-2-310]

1. *Applicability*

This rule establishes affirmative defenses for certain emissions in excess of an emission standard or limitation and applies to all emission standards or limitations except for standards or limitations:

a. Promulgated pursuant to Sections 111 or 112 of the Act;

b. Promulgated pursuant to Titles IV or VI of the Clean Air Act;

c. Contained in any Prevention of Significant Deterioration (PSD) or New Source Review (NSR) permit issued by the U.S. EPA;

d. Contained in A.A.C. R18-2-715.F; or

e. Included in a permit to meet the requirements of A.A.C. R18-2-406.A.5.

2. *Affirmative Defense for Malfunctions*

Emissions in excess of an applicable emission limitation due to malfunction shall constitute a violation. When emissions in excess of an applicable emission limitation are due to a malfunction, the Permittee has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the Permittee has complied with the reporting requirements of A.A.C. R18-2-310.01 and has demonstrated all of the following:

a. The excess emissions resulted from a sudden and unavoidable breakdown of process equipment or air pollution control equipment beyond the reasonable control of the Permittee;

b. The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;

c. If repairs were required, the repairs were made in an expeditious fashion when the applicable emission limitations were being exceeded. Off-shift labor and overtime were utilized where practicable to ensure that the repairs were made as expeditiously as possible. If off-shift labor and overtime were not utilized, the Permittee satisfactorily demonstrated that the measures were impracticable;

d. The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;

e. All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;

f. The excess emissions were not part of a recurring pattern indicative of inadequate design, operation, or maintenance;

g. During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in Title 18, Chapter 2, Article 2 of the Arizona Administrative Code that could be attributed to the emitting source;

h. The excess emissions did not stem from any activity or event that could have been foreseen and avoided, or planned, and could not have been avoided by better operations and maintenance practices;

i. All emissions monitoring systems were kept in operation if at all practicable; and

j. The Permittee's actions in response to the excess emissions were documented by contemporaneous records.

3. Affirmative Defense for Startup and Shutdown

a. Except as provided in Condition XII.E.3.b below, and unless otherwise provided for in the applicable requirement, emissions in excess of an applicable emission limitation due to startup and shutdown shall constitute a violation. When emissions in excess of an applicable emission limitation are due to startup and shutdown, the Permittee has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the Permittee has complied with the reporting requirements of A.A.C. R18-2-310.01 and has demonstrated all of the following:

(1) The excess emissions could not have been prevented through careful and prudent planning and design;

(2) If the excess emissions were the result of a bypass of control equipment, the bypass was unavoidable to prevent loss of life, personal injury, or severe damage to air pollution control equipment, production equipment, or other property;

(3) The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;

(4) The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;

(5) All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;

(6) During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in Title 18, Chapter 2, Article 2 of the Arizona Administrative Code that could be attributed to the emitting source;

(7) All emissions monitoring systems were kept in operation if at all practicable; and

(8) The Permittee's actions in response to the excess emissions were documented by contemporaneous records.

b. If excess emissions occur due to a malfunction during routine startup and shutdown, then those instances shall be treated as other malfunctions subject to Condition XII.E.2 above.

4. Affirmative Defense for Malfunctions During Scheduled Maintenance

If excess emissions occur due to a malfunction during scheduled maintenance, then those instances will be treated as other malfunctions subject to Condition XII.E.2 above.

5. Demonstration of Reasonable and Practicable Measures

For an affirmative defense under Condition XII.E.2 or XII.E.3 above, the Permittee shall demonstrate, through submission of the data and information required by Condition XII.E and A.A.C. R18-2-310.01, that all reasonable and practicable measures within the Permittee's control were implemented to prevent the occurrence of the excess emissions.

XIII. RECORD KEEPING REQUIREMENTS [A.A.C. R18-2-306.A.4]

A. The Permittee shall keep records of all required monitoring information including, but not limited to, the following:

1. The date, place as defined in the permit, and time of sampling or measurements;

2. The date(s) analyses were performed;

3. The name of the company or entity that performed the analyses;

4. A description of the analytical techniques or methods used;

5. The results of such analyses; and

6. The operating conditions as existing at the time of sampling or measurement.

B. The Permittee shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report,

or application. Support information includes all calibration and maintenance records and all original strip-chart recordings or other data recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

C. All required records shall be maintained either in an unchangeable electronic format or in a handwritten logbook utilizing indelible ink.

XIV. REPORTING REQUIREMENTS [A.A.C. R18-2-306.A.5.a]

The Permittee shall submit the following reports:

A. Compliance certifications in accordance with Section VII of Attachment "A".

B. Excess emission, permit deviation, and emergency reports in accordance with Section XII of Attachment "A".

C. Other reports required by any condition of Attachment "B".

XV. DUTY TO PROVIDE INFORMATION [A.A.C. R18-2-304.G and -306.A.8.e]

A. The Permittee shall furnish to the Director, within a reasonable time, any information that the Director may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, the Permittee shall also furnish to the Director copies of records required to be kept by the permit. For information claimed to be confidential, the Permittee shall furnish an additional copy of such records directly to the Administrator along with a claim of confidentiality.

B. If the Permittee has failed to submit any relevant facts or has submitted incorrect information in the permit application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information.

XVI. PERMIT AMENDMENT OR REVISION [A.A.C. R18-2-318, -319, and -320]

The Permittee shall apply for a permit amendment or revision for changes to the facility which do not qualify for a facility change without revision under Section XVII, as follows:

A. Administrative Permit Amendment (A.A.C. R18-2-318);

B. Minor Permit Revision (A.A.C. R18-2-319); and

C. Significant Permit Revision (A.A.C. R18-2-320).

The applicability and requirements for such action are defined in the above referenced regulations.

XVII. FACILITY CHANGE WITHOUT A PERMIT REVISION [A.A.C. R18-2-306.A.4 and -317]

A. The Permittee may make changes at the permitted source without a permit revision if all of the following apply:

1. The changes are not modifications under any provision of Title I of the Act or under ARS § 49-401.01(19);

2. The changes do not exceed the emissions allowable under the permit whether expressed therein as a rate of emissions or in terms of total emissions;

3. The changes do not violate any applicable requirements or trigger any additional applicable requirements;

4. The changes satisfy all requirements for a minor permit revision under A.A.C. R18-2-319.A; and

5. The changes do not contravene federally enforceable permit terms and conditions that are monitoring (including test methods), record keeping, reporting, or compliance certification requirements.

B. The substitution of an item of process or pollution control equipment for an identical or substantially similar item of process or pollution control equipment shall qualify as a change that does not require a permit revision, if it meets all of the requirements of Conditions XVII.A and XVII.C of this Attachment.

C. For each change under Conditions XVII.A and XVII.B above, a written notice by certified mail or hand delivery shall be received by the Director and the Administrator a minimum of 7 working days in advance of the change. Notifications of changes associated with emergency conditions, such as malfunctions necessitating the replacement of equipment, may be provided less than 7 working days in advance of the change, but must be provided as far in advance of the change as possible or, if advance notification is not practicable, as soon after the change as possible. Each notification shall include:

1. When the proposed change will occur;

2. A description of the change;

3. Any change in emissions of regulated air pollutants; and

4. Any permit term or condition that is no longer applicable as a result of the change.

E. The permit shield described in A.A.C. R18-2-325 shall not apply to any change made Conditions XVII.A and XVII.B above.

F. Except as otherwise provided for in the permit, making a change from one alternative operating scenario to another as provided under A.A.C. R18-2-306.A.11 shall not require any prior notice under this Section.

G. Notwithstanding any other part of this Section, the Director may require a permit to be revised for any change that, when considered together with any other changes submitted by the same source under this Section over the term of the permit, do not satisfy Condition XVII.A above.

XVIII. TESTING REQUIREMENTS [A.A.C. R18-2-312]

A. The Permittee shall conduct performance tests as specified in the permit and at such other times as may be required by the Director.

B. Operational Conditions During Testing

Tests shall be conducted during operation at the maximum possible capacity of each unit under representative operational conditions unless other conditions are required by the applicable test method or in this permit. With prior written approval from the Director, testing may be performed at a lower rate. Operations during periods of start-up, shutdown, and malfunction (as defined in A.A.C. R18-2-101) shall not constitute representative operational conditions unless otherwise specified in the applicable standard.

C. Tests shall be conducted and data reduced in accordance with the test methods and procedures contained in the Arizona Testing Manual unless modified by the Director pursuant to A.A.C. R18-2-312.B.

D. Test Plan

At least 14 calendar days prior to performing a test, the Permittee shall submit a test plan to the Director in accordance with A.A.C. R18-2-312.B and the Arizona Testing Manual. This test plan must include the following:

1. Test duration;

2. Test location(s);

3. Test method(s); and

4. Source operation and other parameters that may affect test results.

E. Stack Sampling Facilities

The Permittee shall provide, or cause to be provided, performance testing facilities as follows:

1. Sampling ports adequate for test methods applicable to the facility;

2. Safe sampling platform(s);

3. Safe access to sampling platform(s); and

4. Utilities for sampling and testing equipment.

F. Interpretation of Final Results

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 mean of the 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 is required to be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control, compliance may, upon the Director's approval, be determined using the arithmetic mean of the results of the other two runs. If the Director or the Director's designee is present, tests may only be stopped with the Director's or such designee's approval. If the Director or the Director's designee is not present, tests may only be stopped for good cause. Good cause includes: forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control. Termination of any test without good cause after the first run is commenced shall constitute a failure of the test. Supporting documentation which demonstrates good cause must be submitted.

G. Report of Final Test Results

A written report of the results of all performance tests shall be submitted to the Director within 30 days after the test is performed. The report shall be submitted in accordance with the Arizona Testing Manual and A.A.C. R18-2-312.A.

XIX. PROPERTY RIGHTS [A.A.C. R18-2-306.A.8.d]

This permit does not convey any property rights of any sort, or any exclusive privilege.

XX. SEVERABILITY CLAUSE [A.A.C. R18-2-306.A.7]

The provisions of this permit are severable. In the event of a challenge to any portion of this permit, or if any portion of this permit is held invalid, the remaining permit conditions remain valid and in force.

XXI. PERMIT SHIELD [A.A.C. R18-2-325]

Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements identified in Attachment "C". The permit shield shall not apply to minor revisions pursuant to Section XVI.B of this Attachment and any facility changes without a permit revision pursuant to Section XVII of this Attachment.

XXII. PROTECTION OF STRATOSPHERIC OZONE [40 CFR Part 82]

If this source becomes subject to the provisions of 40 CFR Part 82, then the Permittee shall comply with these provisions accordingly.

ATTACHMENT "B": SPECIFIC CONDITIONS

Air Quality Control Permit No. 1000992
for
North Star Steel Company

I. EMISSION LIMITS/STANDARDS

A. Melt Shop Operations include an Electric Arc Shaft Furnace (EASF), Ladle Metallurgical Facility (LMF), melt shop baghouse, melt shop baghouse dust handling system, slag handling operations, continuous casting machine, tundish dryer, two tundish preheaters, two ladle dryers, two ladle preheaters, and miscellaneous steel making operations from which emissions are captured by the melt shop ventilation system.

1. Opacity Standards

a. Melt Shop Baghouse Vent

Permittee shall not cause to be discharged into the atmosphere from the melt shop baghouse vent any gases which exhibit opacity of three percent or greater except during periods of startup, shutdown, or malfunction.
[40 CFR 60.272a, A.A.C. R18-2-406.A.4, R18-2-331, Material Permit Condition]

b. Melt Shop Baghouse Dust Handling System

Permittee shall not cause to be discharged into the atmosphere from the melt shop baghouse dust handling system any gases which exhibit opacity greater than zero except during periods of startup, shutdown, or malfunction. [A.A.C. R18-2-406.A.4, R18-2-331, Material Permit Condition]

c. Melt Shop

Permittee shall not cause to be discharged into the atmosphere from the melt shop, other than through the melt shop baghouse vent, any gases which exhibit opacity of six percent or greater except during periods of startup, shutdown, or malfunction.
[A.A.C. R18-2-406.A.4, R18-2-331, Material Permit Condition]

2. Particulate Matter (PM) Emission Limits

a. Permittee shall not cause to be discharged into the atmosphere from the melt shop baghouse vent any gases which contain PM in excess of either of the following limits: 15.4 lb/hr and 0.0018 gr/dscf. Each of these limits is based on a 24-hour averaging time, with compliance to be determined using the results of three consecutive 8-hour performance test runs.
[A.A.C. R18-2-406A.4]

b. Permittee shall not cause to be discharged into the atmosphere from the melt shop baghouse vent any gases which contain PM_{10} in excess of either of the following limits: 44.5 lb/hr and 0.0052 gr/dscf. Each of these limits is based on a 24-hour averaging time, with compliance to be determined using the results of three consecutive 8-hour performance test runs.

[A.A.C. R18-2-406A.4]

3. Sulfur Dioxide (SO_2) Emission Limits [A.A.C. R18-2-406A.4]

a. Permittee shall not cause to be discharged into the atmosphere from the melt shop baghouse vent any gases which contain sulfur dioxide in excess of either of the following limits: 24.0 lbs per hour and 0.200 lbs per ton of steel produced.

b. For the purposes of determining compliance with the emission limits in Specific Condition I.A.3.a above during a performance test, the Permittee shall follow the procedures prescribed by Specific Conditions IV.B.1 and IV.B.5 of this Attachment. The averaging period shall be interpreted as the total duration of three test runs. The term "tons of steel produced" shall mean the actual steel production rate demonstrated during the performance test period.

c. For the purposes of demonstrating compliance with the emission limits in Specific Condition I.A.3.a above during periods other than when a performance test is being conducted, the Permittee shall follow the procedures prescribed by Specific Conditions III.B.4.a through III.B.4.h of this Attachment. The averaging period shall be any 24-hour period. The term "tons of steel produced" shall mean the maximum allowable steel production rate established in accordance with Specific Condition I.A.9.b of this Attachment.

4. Nitrogen Oxides (NOx) Emission Limits [A.A.C. R18-2-406A.4]

a. Permittee shall not cause to be discharged into the atmosphere from the melt shop baghouse vent any gases which contain nitrogen oxide in excess of either of the following limits: 126.0 lbs per hour and 1.050 lbs per ton of steel produced.

b. For the purposes of determining compliance with the emission limits in Specific Condition I.A.4.a above during a performance test, the Permittee shall follow the procedures prescribed by Specific Conditons IV.B.1 and IV.B.5 of this Attachment. The averaging period shall be interpreted as the total duration of the three test runs. The term "tons of steel produced" shall mean the actual steel production rate demonstrated during the performance test period.

c. For the purposes of determining compliance with the emission limits in Specific Condition I.A.4.a above during periods other than when a performance test is being conducted, the Permittee shall follow the

procedures prescribed by Specific Conditions III.B.4.a through III.B.4.h of this Attachment. The averaging period shall be any 24-hour period. The term "tons of steel produced" shall mean the maximum allowable steel production rate established in accordance with Specific Condition I.A.9.b of this Attachment.

d. At all times, including periods of startup, shutdown, and malfunction, Permittee shall, to the extent practicable, maintain and operate the melt shop operations in a manner consistent with good air pollution control practice for minimizing nitrogen oxide emissions.

5. *Carbon Monoxide (CO) Emission Limits* [A.A.C. R18-2-406A.4]

a. Permittee shall not cause to be discharged into the atmosphere from the melt shop baghouse vent any gases which contain carbon monoxide in excess of either of the following limits: 720.0 lbs per hour and 6.000 lbs per ton of steel produced.

b. For the purposes of determining compliance with the emission limits in Specific Conditioon I.A.5.a above during a performance test, the Permittee shall follow the procedures prescribed by Specific Condition IV.B.1 and IV.B.5 of this Attachment. The averaging period shall be interpreted as the total duration of the three test runs. The term "tons of steel produced" shall mean the actual steel production rate demonstrated during the performance test period.

c. For the purposes of determining compliance with the emission limits in Specific Condition I.A.5.a above during periods other than when a performance test is being conducted, the Permittee shall follow the procedures prescribed by Specific Conditions III.B.4.a through III.B.4.h of this Attachment. The averaging period shall be any 24-hour period. The term "tons of steel produced" shall mean the maximum allowable steel production rate established in accordance with Specific Condition I.A.9.b of this Attachment.

d. Optimization Study

Within 30 days after startup of the enhanced secondary post-combustion system, Permittee shall commence performance of an optimization study. The purpose of the optimization study shall be to determine whether a lower carbon monoxide emission rate is achievable from the melt shop operations. This study shall, at a minimum, consider the effect of the following operating considerations: size of EASF heat; EASF cycle times, including melting time and refining time; firing rates of in-furnace oxyfuel burners; carbon balance for each phase of the melting cycle; firing rate of enhanced secondary post-combustion system; operational status of emission units venting through the melt shop canopy; nitrogen oxide and carbon monoxide emission rates during each phase of the melting cycle. In addition, the

study may include a statistical analysis of variability in the carbon monoxide emission rate. Within 180 days after startup of the enhanced secondary post-combustion system, Permittee shall submit a report to the Department presenting the results of this optimization study. This report shall include a proposed final emission limit for carbon monoxide, in terms of lbs per ton of steel produced, not to exceed 6.000 lbs per ton of steel produced. The Department will use the information in the optimization study report, CEMS data, and any statistical analysis submitted by Permittee, and may use other available and relevant information, to establish a final emission limit for carbon monoxide, in terms of lbs per ton of steel produced, not to exceed 6.000 lbs per ton of steel produced.

6. *Volatile Organic Compound (VOC) Emission Limits* [A.A.C. R18-2-406A.4]

a. Permittee shall not cause to be discharged into the atmosphere from the melt shop baghouse vent any gases which contain volatile organic compounds in excess of either of the following limits: 42.3 lbs per hour and 0.352 lbs per ton of steel produced.

b. For the purposes of determining compliance with the emission limits in Specific Condition I.A.6.a above during a performance test, the permittee shall follow the procedures prescribed by Specific Conditions IV.B.1 and IV.B.5 of this Attachment. The averaging period shall be interpreted as the total duration of the three test runs. The term "tons of steel produced" shall mean the actual steel production rate demonstrated during the performance test period.

c. For the purposes of determining compliance with the emission limits in Specific Condition I.A.5.a above during periods other than when a performance test is being conducted, the averaging period shall be any 24-hour period. The term "tons of steel produced" shall mean the maximum allowable steel production rate established in accordance with Specific Condition I.A.9.b of this Attachment.

7. *Lead (Pb) Emission Limits*

Permittee shall not cause to be discharged into the atmosphere from the melt shop baghouse vent any gases which contain lead in excess of 0.30 lbs per hour. This limit is based on a 24-hour averaging time, with compliance to be determined using the results of three consecutive 8-hour performance test runs. [A.A.C. R18-2-406A.4]

8. *Fuel Limitation*

Permittee shall not cause to be combusted in any unit in the melt shop any fuel other than pipeline quality natural gas. This restriction does not apply to carbon and other process materials, which may have fuel value, but which are fed to the EASF as raw materials, either by injection or in batches with the steel scrap.

[A.A.C. R18-2-406A.4]

9. Operational Limitations

a. Permittee shall not operate the melt shop unless it meets the requirements of Condition II.A.2 below.

b. Permittee shall not produce steel at an hourly production rate exceeding 120 tons (short) of steel per hour, or 110 percent of the lowest pollutant-specific maximum production rate, whichever is lower. For the purposes of this permit condition, the steel production rate is measured as the quantity of steel tapped from the EASF, based on 24-hour block average. The maximum production rate for each pollutant is the highest production rate recorded during any successful performance test for that pollutant, conducted pursuant to Specific Condition IV.B.1 of this Attachment. [A.A.C. R18-2-406A.4]

c. Permittee shall not produce more than 800,000 tons (short) of steel per year. For the purposes of this permit condition, the steel production rate is measured as the quantity of steel tapped from the EASF, based on a daily rolling 365-day sum. [A.A.C. R18-2-406A.4]

d. For the purposes of Specific Conditions I.A.9.a and I.A.9.b of this Attachment, the term "the quantity of steel tapped from the EASF" shall mean the weight of the scrap charged to the EASF multiplied by the previous month's melt shop yield. The weight of the scrap charged to the EASF shall be measured using certified commercial scales. The melt shop yield shall be calculated so as to include the prime cast tons plus any steel tapped from the EASF but not cast. [A.A.C. R18-2-406A.4]

e. Permittee shall adhere to a documented scrap management plan including, at a minimum, the following elements: detailed specifications for acceptable scrap; detailed procedures to ensure that scrap providers are aware of current specifications for acceptable scrap; detailed procedures for inspecting each scrap delivery during unloading to verify compliance with current scrap specifications; detailed procedures for inspecting scrap during processing to remove any scrap not meeting current scrap specifications; and administrative procedures for updating scrap specifications as necessary to ensure compliance with all applicable emission standards and limitations. A scrap management plan meeting these requirements shall be submitted to the Department for its approval within 60 days after issuance of this permit. [A.A.C. R18-2-406A.4]

f. Permittee shall install and maintain a tight-fitting roof on the ladle metallurgical furnace (LMF) to minimize emissions of particulate matter. The design specifications of the roof on the LMF shall be submitted to the Department within 60 days after issuance of this permit.
[A.A.C. R18-2-406A.4, R-18-2-331, Material Permit Condition]

B. Reheat Furnace Operations

1. Opacity Standard

Permittee shall not cause to be discharged into the atmosphere from the reheat furnace exhaust stack any gases which exhibit opacity greater than zero.
[A.A.C. R18-2-406.A.4, R18-2-331, Material Permit Condition]

2. Particulate Matter (PM) Emission Limits

Permittee shall not cause to be discharged into the atmosphere from the reheat furnace exhaust stack any gases which contain PM_{10} in excess of either of the following limits: 0.55 lb/hr and 0.0075 lb per million Btu heat input from natural gas. Each of these limits is based on a 24-hour averaging time, with compliance to be determined using the results of three consecutive 8-hour performance test runs.
[A.A.C. R18-2-406A.4]

3. Nitrogen Oxide (NOx) Emission Limits

Permittee shall not cause to be discharged into the atmosphere from the reheat furnace exhaust stack any gases which contain nitrogen oxides, expressed as nitrogen dioxide, in excess of either of the following limits: 7.40 lb/hr and 0.100 lb per million Btu heat input from natural gas. Each of these limits is based on a 24-hour averaging time, with compliance to be determined using the results of three consecutive 8-hour performance test runs. [A.A.C. R18-2-406A.4]

4. Carbon Monoxide (CO) Emission Limits

Permittee shall not cause to be discharged into the atmosphere from the reheat furnace exhaust stack any gases which contain carbon monoxide in excess of either of the following limits: 2.22 lb/hr and 0.030 lb per million Btu heat input from natural gas. Each of these limits is based on a 24-hour averaging time, with compliance to be determined using the results of three consecutive 8-hour performance test runs. [A.A.C. R18-2-406A.4]

5. Volatile Organic Compound (VOC) Emission Limits

Permittee shall not cause to be discharged into the atmosphere from the reheat furnace exhaust stack any gases which contain volatile organic compounds in excess of either of the following limits: 0.10 lb/hr and 0.0014 lb per million Btu heat input from natural gas. Each of these limits is based on a 24-hour averaging time, with compliance to be determined using the results of three consecutive 8-hour performance test runs. [A.A.C. R18-2-406A.4]

6. Fuel Limitation

Permittee shall burn as fuel in the reheat furnace only pipeline quality natural gas. The heat input rate to the reheat furnace from natural gas shall be limited to 74.0 million Btu per hour, or 110 percent of the heat input rate during the most recent successful performance test pursuant to Specific Condition IV.C.1 of this Attachment, whichever is lower. Compliance with this operational limitation shall be determined on a calendar-day block average basis. [A.A.C. R18-2-406A.4]

C. Direct Cooling Water Mechanical-Draft Cooling Tower (2 Cells)

1. Opacity Standard

Permittee shall not cause, allow or permit to be emitted into the atmosphere any plume or effluent of which the opacity exceeds 5 percent, based on a 6-minute averaging time. [A.A.C.R18-2-406.A.4]

2. Particulate Matter (PM) Emission Limit

Permittee shall not cause to be discharged into the atmosphere any gases which contain PM in excess of either of the following limits: 0.46 lb/hr and 0.55 lb per million gallons of circulating water flow. [A.A.C. R18-2-406A.4]

3. Operational Limitations

a. Permittee shall ensure that the direct cooling water mechanical-draft cooling tower is equipped with drift eliminators such that the guaranteed design total drift rate does not exceed 0.0006 percent of circulating water flow. [A.A.C. R18-2-406A.4 and Permit Condition]

b. Permittee shall not cause, allow or permit the circulating water flow rate in the direct cooling water mechanical-draft cooling tower to exceed 16,000 gallons per minute, total for the two cells, based on instantaneous measurement. [A.A.C. R18-2-406A.4]

c. Permittee shall not cause, allow or permit the solids content (including total dissolved solids plus total suspended solids) of the circulating water in the direct cooling water mechanical-draft cooling tower to exceed 11.0 grams per liter, based on instantaneous measurement. [A.A.C. R18-2-406A.4]

4. Effective Date

Compliance with Specific Conditions I.C.1 through I.C.3 of this Attachment shall be required no later than 120 days after issuance of this permit.

D. Indirect Cooling Water Mechanical-Draft Cooling Tower (3 Cells)

1. Opacity Standard

Permittee shall not cause, allow or permit to be emitted into the atmosphere any plume or effluent of which the opacity exceeds 5 percent, based on a 6-minute averaging time. [A.A.C.R18-2-406.A.4]

2. Particulate Matter (PM) Emission Limit

Permittee shall not cause to be discharged into the atmosphere any gases which contain particulate matter in excess of either of the following limits: 2.76 lb/hr and 1.33 lb per million gallons of circulating water flow. [A.A.C. R18-2-406A.4]

3. Operational Limitations

a. Permittee shall ensure that the indirect cooling water mechanical-draft cooling tower is equipped with drift eliminators such that the guaranteed design total drift rate does not exceed 0.002 percent of circulating water flow. [A.A.C. R18-2-406A.4, R-18-2-331, Material Permit Condition]

b. Permittee shall not cause, allow or permit the circulating water flow rate in the indirect cooling water mechanical-draft cooling tower to exceed 36,000 gallons per minute, total for three cells, based on instantaneous measurement. [A.A.C. R18-2-406A.4]

c. Permittee shall not cause, allow or permit the solids content (including total dissolved solids plus total suspended solids) of the circulating water in the indirect cooling water mechanical-draft cooling tower to exceed 8.0 grams per liter, based on instantaneous measurement. [A.A.C. R18-2-406A.4]

4. Effective Date

Compliance with Specific Conditions I.D.1 through I.D.3 of this Attachment shall be required no later than 120 days after issuance of this permit.

E. Emergency Generators

1. Permanent Emergency Generators

Permittee shall not cause, allow or permit either of the Caterpillar emergency generators listed in Attachment “E” to exceed 500 operating hours per year, based on a daily rolling 365-day sum. [A.A.C. R18-2-724.J]

2. Portable Emergency Generator [A.A.C. R18-2-724.J]

a. Permittee may use a portable emergency generator powered by an internal combustion engine in the event of a transformer failure or other emergency that results in a loss of available electric power.

b. Permittee shall not cause, allow or permit the operation of a portable emergency generator with a capacity in excess of 1,750 kilowatts.

c. Permittee shall not cause, allow or permit the operation of a portable emergency generator to exceed fourteen days for any single occurrence or 500 hours in any consecutive 365-day period.

d. Permittee shall not cause, allow or permit the firing of any fuel other than No. 2 fuel oil in a portable emergency generator.

e. Permittee shall not cause, allow or permit the operation of a portable emergency generator at any location other than the following twelve [12] locations, as noted on Figure 1, "North Star Steel Arizona - Locations for Transformer Failure" in Attachment "F" to this permit: inside melt shop; outside near B01; outside near pump house; outside near shipping crane; outside near rollshop; outside near rail scale house; outside near scrap crane; outside near security.

F. Sandblasting

Permittee shall not cause or permit sandblasting or other abrasive blasting without minimizing dust emissions to the atmosphere through the use of good modern practices. Examples of good modern practices include wet blasting and the use of effective enclosures with necessary dust collection equipment. [A.A.C.R18-2-726]

G. Non-Point Sources

1. Unlawful Open Burning

Permittee shall not ignite, cause to be ignited, permit to be ignited, or suffer, allow or maintain any open outdoor fire. [A.A.C.R18-2-602]

2. Fugitive Emissions
[A.A.C. R18-2-406A.4, -605 through- 607, -610, -306.01, and -331, Material Permit Conditions]

a. For the control of fugitive emissions from the haul roads, storage piles, spillage, yard areas and any other plant operations, the Permittee shall take reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne.

b. Permittee shall control fugitive emissions (windblown dust) from the haul roads, storage piles, spillage, yard areas and any other plant operations to

the extent that these fugitive emissions shall not exhibit an opacity greater than 40 percent. The following control actions shall be taken by the Permittee to ensure that these fugitive emissions, not only do not exceed the opacity limit cited, but are minimized:

(1) Any paved area subject to vehicle traffic shall be maintained as follows:

(a) The maximum speed of traffic shall be restricted to 30 mph.

(b) The area shall be watered and vacuumed, in a manner designed to ensure capture of the vacuumed material, at least once every two weeks. More frequent vacuuming and/or watering may be required to ensure compliance with the opacity limitation.

(c) During any two-week period in which the melt shop does not operate to produce steel, vacuuming of paved areas is not required.

(2) Permittee shall develop and submit a dust control plan to the Department for approval for achieving an 85% control efficiency from all unpaved areas within 30 days after issuance of this permit. This plan shall provide for, at a minimum, the following:

(a) The maximum speed of vehicle traffic shall be restricted to 30 mph.

(b) A magnesium chloride chemical dust suppressant shall be applied to unpaved roadways at least bimonthly. In addition, unpaved areas shall be watered a minimum of once per day. More frequent dust suppressant and water application may be necessary to achieve an 85% control efficiency.

(c) For the purposes of this Specific Condition, the term "unpaved roadways" shall mean areas that are subject to vehicle traffic but are not paved.

(3) Visibility Limit: [A.A.C.R18-2-343]

(a) Permittee shall not cause or permit the airborne diffusion of visible emissions, including fugitive dust, beyond the property line within which the emissions became airborne. In actual practice, the airborne diffusion of visible emissions across property lines shall be prevented by appropriately controlling the emissions at the point of

discharge, or ceasing entirely the activity or operation which is causing or contributing to the emissions.

(b) This condition shall not apply when the naturally induced wind speed exceeds 25 miles per hour as estimated by an EPA certified visible emissions evaluator using the Beaufort Scale of Wind-Speed Equivalents, or as recorded by a U.S. Weather Bureau Station or a U.S. Government military installation.

(i) The above exception does not apply to the demolition, destruction, transport, or pulverization of structures containing friable asbestos materials, and all dust-producing activities associated with such sources shall be halted when the wind is causing or contributing visible emissions to cross beyond the property line within which the emissions discharged.

(ii) Any disregard of, neglect of, or inattention to other controls required herein, during any time when this condition is in effect, shall automatically waive the exception, and such relaxation of controls shall be a violation.

H. Other Periodic Activities

1. Mobile Sources

a. Classification [A.A.C. R18-2-801]

The requirements of Specific Condition I.I.1 of this Attachment are applicable to mobile sources which either move while emitting air contaminants or are frequently moved during the course of their utilization, but which are not classified as motor vehicles, agricultural vehicles, or agricultural equipment used in normal farm operations. Mobile sources shall not include portable sources as defined in A.A.C. R18-2-101.84.

b. Off-Road Machinery [A.A.C. R18-2-802]

(1) Permittee shall not cause, allow or permit to be emitted into the atmosphere from any off-road machinery smoke, for any period greater than ten consecutive seconds, the opacity of which exceeds 40 percent. Visible emissions when starting cold equipment shall be exempt from this requirement for the first ten minutes.

(2) Off-road machinery shall include trucks, graders, scrapers, rollers, locomotive and other construction and mining machinery not normally driven on a completed public roadway.

c. Roadway and Site Cleaning Machinery [A.A.C. R18-2-804]

(1) Permittee shall not cause, allow or permit to be emitted into the atmosphere from any roadway and site cleaning machinery smoke or dust, for any period greater than ten consecutive seconds, the opacity of which exceeds 40 percent. Visible emissions when starting cold equipment shall be exempt from this requirement for the first ten minutes.

(2) Permittee shall not cause, allow or permit the cleaning of any site, roadway, or alley without taking reasonable precautions to prevent particulate matter from becoming airborne. Reasonable precautions may include applying dust suppressants.

2. Nonvehicle Air Conditioner Maintenance and/or Services

The Permittee shall comply with the applicable requirements of 40 CFR 82 - Subpart F (Protection of Stratospheric Ozone - Recycling and Emissions Reduction). [40 CFR part 82, subpart F]

II. AIR POLLUTION CONTROL EQUIPMENT

[A.A.C. R18-2-331, A.A.C. R18-2-406.A.1, Material Permit Conditions)]

A. Melt Shop Operations

1. Particulate Matter

At all times, including periods of startup, shutdown, and malfunction, Permittee shall, to the extent practicable, maintain and operate the melt shop baghouse in a manner consistent with good air pollution control practice for minimizing particulate matter emissions.

2. Carbon Monoxide and Volatile Organic Compounds

At all times, including periods of startup, shutdown, and malfunction, Permittee shall, to the extent practicable, maintain and operate the direct-shell evacuation control system and the enhanced secondary post-combustion system in a manner consistent with good air pollution control practice for minimizing CO and VOC emissions.

III. MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS

A. At the time the compliance certifications required by Section VII of Attachment "A" are submitted, the Permittee shall submit reports of all monitoring activities required by Section III of this Attachment performed in the same six month period as applies to the compliance certification period. [A.A.C. R18-2-306.A.5.a]

B. Monitoring, Recordkeeping, and Reporting Requirements for Melt Shop Operations

1. Melt Shop Production Limitation

[40 CFR 60.273a; A.A.C. R18-2-331 and -406A.4, Material Permit Condition]

Permittee shall maintain records of daily steel production in the EASF and LMF. Any exceedance of the production limitations in Specific Conditions I.A.9.a or I.A.9.b of this Attachment shall constitute a violation of that permit condition.

2. Melt Shop Baghouse [A.A.C. R18-2-406A.4; 40 CFR part 64]

a. Permittee shall install, calibrate, maintain, and continuously operate a fabric filter bag leak detection system, in accordance with the system manufacturer's instructions, to monitor the baghouse performance. For the purpose of this Specific Condition, the term "fabric filter bag leak detection system" means a system that is capable of continuously monitoring relative particulate matter (dust) loadings in the exhaust of a baghouse in order to detect bag leaks and other upset conditions. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light scattering, light transmittance, or other effect to continuously monitor relative particulate matter loadings.

b. Permittee shall maintain records of all inspections and maintenance performed on the fabric filter bag leak detection system. Records shall include the date and time of each inspection or maintenance activity; the activities performed; and the results of any drift checks and response tests.

c. The fabric filter bag leak detection system required by Specific Condition III.B.2.a of this Attachment shall meet the specifications and requirements of the following subparagraphs (1) through (6).

(1) The fabric filter bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations that are equivalent, at the actual operating conditions of the melt shop baghouse, to 0.0018 grains per dry standard cubic foot or less.

(2) The fabric filter bag leak detection system sensor must provide output of relative particulate matter loading, and the Permittee shall record the output as specified by an approved CAM plan.

(3) The fabric filter bag leak detection system must be equipped with an alarm system that will sound when an increase in relative particulate loading is detected over a preset level, and the alarm must be located such that it can be heard by the appropriate plant personnel.

(4) The initial adjustment of the fabric filter bag leak detection 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.

(5) Following initial adjustment, the Permittee shall not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time, without the prior written approval of the Director. In no event shall the sensitivity be increased by more than 100 percent or decreased more than 50 percent over a 365-day period.

(6) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

d. If the fabric filter bag leak detection system alarms, Permittee shall initiate investigation of the melt shop baghouse within 24 hours of the first discovery of the alarming incident for possible corrective action. If corrective action is required, Permittee shall proceed to implement such corrective action, in accordance with a written corrective action plan, as soon as practicable in order to minimize possible exceedances of the emission limitations established in Specific Condition I.A of this Attachment. The corrective action plan shall include, at a minimum, the following provisions:

(1) Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in 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.

(6) Shutting down the melt shop operations, including the electric arc shaft furnace.

e. If the fabric filter bag leak detection system alarm continues for 72 consecutive hours after the first discovery, Permittee shall notify the Director of the incident. Such notification shall include the time and probable cause of the alarm as well as any corrective actions undertaken by the Permittee.

f. At least once per week, Permittee shall confirm that dust is being removed from melt shop baghouse hoppers through visual inspection or equivalent means of ensuring the proper functioning of removal mechanisms.

g. At least once per month, Permittee shall perform a check of bag cleaning mechanisms for proper functioning through visual inspection or equivalent means.

3. Direct Evacuation Control (DEC) System Operation

[40 CFR 60.274a; A.A.C. R18-2-406A.4; 40 CFR part 64]

a. Permittee shall perform at least weekly operational status inspections of all equipment that is important to the performance of the entirety of the melt shop capture system. Such equipment shall include, at a minimum, pressure sensors, dampers, and damper switches. The inspection shall include, at a minimum, 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 ductwork, and fan erosion). Any observed deficiencies shall be noted and documented in a permanent maintenance record.

b. After six months of performing weekly operational status inspections and providing the inspections results to the Department, as required by Specific Condition III.B.3.a above, the Permittee may petition the Department to change the required frequency of performance. At no time shall the required frequency be less frequent than once per month.

c. Permittee shall check and record the DEC system fan motor amperes and damper position at least once per shift. For the purposes of this permit condition, a shift shall be defined as each 12-hour period of operation.

d. Permittee shall perform opacity observations at the melt shop, in accordance with EPA Method 9, at least once per calendar day during periods of daylight while the electric arc shaft furnace is operating in the melting and refining mode. Shop opacity shall be determined as the arithmetic average of 24 consecutive 15-second opacity observations of emissions from the shop. 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 six-minute set of opacity observations shall be required. In this case, observations shall be made for the site of highest opacity observed during a single incident.

e. During any performance test for the melt shop or elements thereof, the Permittee shall monitor and record the following information for all heats covered by the performance test:

(1) Charge weights, cast billet weight and the calculated tap weights;

(2) Heat times, including start and stop times, and a log of process operation, including periods of no operation during testing;

(3) Baghouse and DEC system operation logs, including fan motor amperage and all damper positions;

(4) Results of opacity observations taken in accordance with EPA Method 9.

f. In conjunction with the optimization study required by Specific Condition I.A.5.d of this Attachment, the Permittee shall establish an operating range for DEC system fan motor amperage consistent with maximizing DEC system capture efficiency.

g. Operation of the DEC system fan motor at an amperage outside the range established pursuant to Specific Condition III.B.3.f shall constitute an excursion for the purposes of 40 CFR part 64.

4. Monitoring for Sulfur Dioxide (SO_2), Nitrogen Oxide (NOx), and Carbon Monoxide (CO)

a. Permittee shall install, calibrate, maintain, and operate continuous emission rate monitoring systems (CERMS) for measuring emissions of SO_2, NOx, and CO from the melt shop baghouse.

[A.A.C. R18-2-406A.4, R-18-2-331, Material Permit Condition)]

b. The CERMS shall meet the following requirements:

(1) 40 CFR part 60, appendix B, "Performance Specifications"

(a) For the SO_2 continuous emission monitoring system (CEMS), Performance Specification 2, *Specifications and test procedures for SO_2 and NOx continuous emission monitoring systems in stationary sources.* However, for the purposes of this CEMS, the relative accuracy specification in Paragraph 13.2 of Performance Specification 2 is revised as follows: the relative accuracy required for the SO_2 CEMS shall be no greater than 20 percent when RM is used, or 10 percent when the emission standard is used, or within 5 ppmv when the relative accuracy is calculated as the absolute average difference between the RM and CEMS plus the 2.5 percent confidence coefficient.

(b) For the NOx continuous emission monitoring system (CEMS), Performance Specification 2, *Specifications and*

test procedures for SO_2 and NOx continuous emission monitoring systems in stationary sources.

(c) For the CO CEMS, Performance Specification 4, *Specifications and test procedures for carbon monoxide continuous emission monitoring systems in stationary sources*.

(d) For all CERMS, Performance Specification 6, *Specifications and test procedures for continuous emission rate monitoring systems in stationary sources*. However, for the purposes of the SO_2 CERMS, the relative accuracy specification in Paragraph 13.2 of Performance Specification 2 is revised as follows: the relative accuracy required for the SO_2 CEMS shall be no greater than 20 percent when RM is used, or 10 percent when the emission standard is used, or within 5 ppmv when the relative accuracy is calculated as the absolute average difference between the RM and CERMS plus the 2.5 percent confidence coefficient.

(2) 40 CFR part 60, appendix F, "Quality Assurance Procedures."

(3) The Permittee shall submit a Quality Assurance/Quality Control Plan to the Department 30 days prior to the instrument start-up including procedures for dealing with data gaps based on the procedures contained in 40 CFR 75, Subpart D (§ 75.30). When approved by the Department, this plan shall be implemented.

c. Permittee 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 five years following the date of such measurements, maintenance, reports, and records.

d. The CEMS and CERMS shall be installed and operational prior to conducting required initial performance tests. Verification of operational status shall, at a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of these devices, and shall be notified to the Department.

e. Permittee shall conduct a performance evaluation of the CEMS during any required performance test in accordance with the applicable performance specification in 40 CFR part 60, appendix B.

f. Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required under paragraph (b) of this section, Permittee shall meet minimum frequency of operation requirements as follows: the CEMS and CERMS shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

g. For CEMS and CERMS measurements, one-hour arithmetic averages shall be computed from four or more data points equally spaced over each one-hour period. Data recorded 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.

h. Following the initial performance tests, 24-hour rolling average emission rates shall be computed from CEMS and CERMS data and shall be recorded at the end of each hour of operation. All 24-hour average emission rates shall be expressed in terms of measured parts per million concentration, calculated pounds per hour emission rate, and calculated pounds per ton of steel produced. For the purposes of this Specific Condition, the term "tons of steel produced" shall mean the maximum allowable steel production rate established in accordance with Specific Condition I.A.9.b of this Attachment.

5. *Reporting Requirements* [A.A.C. R18-2-306.01; R18-2-406A.4]

a. Excess emission and monitoring system performance (MSP) reports shall be submitted to the Department and EPA Region IX for every calendar quarter. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter. Each excess emission and MSP report shall include the information required in conditions III.B.1 through III.B.4 of this Attachment.

b. Excess emissions indicated by the CEMS or CERMS shall be submitted to the Department under Condition XII of Attachment A and shall be considered violations of the applicable emission limit for the purposes of this permit.

C. Monitoring, Recordkeeping, and Reporting Requirements for Reheat Furnace
[A.A.C. R18-2-406A.4]

1. Permittee shall monitor the quantity of natural gas consumed in the reheat furnace using either an orifice plate flow meter, a positive-displacement flow meter (e.g., bellows gas meter), a mass flow meter, or an equivalent device. The meter or device used shall have a minimum accuracy of ± 1 percent of the flow rate.

2. Permittee shall maintain daily records showing the quantity of natural gas consumed in the reheat furnace. Records of natural gas consumption shall be expressed in units of million Btu per hour or cubic feet per hour (daily average basis). These records shall be maintained as either permanent and easily retrievable electronic data or as written records in a bound log book.

3. Permittee shall maintain records for all natural gas consumed in the reheat furnace showing the vendor that provided the natural gas.

4. *Effective Date*

Compliance with Specific Conditions III.C.1 through III.C.3 of this Attachment shall be required no later than 120 days after issuance of this permit.

D. Monitoring, Recordkeeping, and Reporting Requirements for Direct Cooling Water Mechanical-Draft Cooling Tower [A.A.C. R18-2-406A.4]

1. Permittee shall maintain records showing the pump performance curve for each water pump serving the direct cooling water mechanical-draft wet cooling tower.

2. Permittee shall maintain records of the maximum number of circulating water pumps operating during any period for the purpose of determining the maximum water flow rate through the direct cooling water mechanical-draft wet cooling tower.

3. A calculated circulating water flow rate exceeding the circulating water flow rate limitation listed in Specific Condition I.C.3.b of this Attachment shall constitute a period of excess emissions.

4. Permittee shall employ best management practices for monitoring the quality of the circulating water used in the direct cooling water mechanical-draft wet cooling tower. At a minimum, this shall include the following:

   a. Permittee shall maintain records of routinely monitored water quality data.

   b. Permittee shall maintain records showing the relationship between routinely measured water quality parameters and total solids content.

   c. Permittee shall sample, measure, and record the solids content [including Total Suspended Solids (TSS) and Total Dissolved Solids (TDS)] of the circulating water. Solids measurement shall be performed using EPA Method 160.3 (in *Methods for the Chemical Analysis of Water and Wastes*. EPA-600/4-79-020. U.S. EPA, Environmental Monitoring and Systems Laboratory, Cincinnati, Ohio), or Department approved alternative method. Measurement shall be made at least once per month. Measurement shall also be made whenever the routinely monitored water quality data indicates that the total solids content may be in excess of the limitation in Specific Condition I.C.3.c of this Attachment.

5. A measured solids content exceeding the circulating water solids limitation listed in Specific Condition I.C.3.c of this Attachment shall constitute a period of excess emissions.

6. Permittee shall maintain readily available records of the guaranteed design total drift rate of the direct cooling water mechanical-draft wet cooling tower, as specified by the vendor or installer of the drift eliminators.

7. *Effective Date*

Compliance with Specific Conditions III.D.1 through III.D.6 of this Attachment shall be required no later than 120 days after issuance of this permit.

E. Monitoring, Recordkeeping, and Reporting Requirements for Indirect Cooling Water Mechanical-Draft Cooling Tower [A.A.C. R18-2-406A.4]

1. Permittee shall maintain records showing the pump performance curve for each water pump serving the indirect cooling water mechanical-draft wet cooling tower.

2. Permittee shall maintain records of the maximum number of circulating water pumps operating during any period for the purpose of determining the maximum water flow rate through the indirect cooling water mechanical-draft wet cooling tower.

3. A calculated circulating water flow rate exceeding the circulating water flow rate limitation listed in Specific Condition I.D.3.b of this Attachment shall constitute a period of excess emissions.

4. Permittee shall employ best management practices for monitoring the quality of the circulating water used in the indirect cooling water mechanical-draft wet cooling tower. At a minimum, this shall include the following:

a. Permittee shall maintain records of routinely monitored water quality data.

b. Permittee shall maintain records showing the relationship between routinely measured water quality parameters and total solids content.

c. Permittee shall sample, measure, and record the solids content [including Total Suspended Solids (TSS) and Total Dissolved Solids (TDS)] of the circulating water. Solids measurement shall be performed using EPA Method 160.3 (in *Methods for the Chemical Analysis of Water and Wastes*. EPA-600/4-79-020. U.S. EPA, Environmental Monitoring and Systems Laboratory, Cincinnati, Ohio), or Department approved alternative method. Measurement shall be made at least once per month. Measurement shall also be made whenever the routinely monitored water quality data indicates that the total solids content may be in excess of the limitation in Specific Condition I.D.3.c of this Attachment.

5. A measured solids content exceeding the circulating water solids limitation listed in Specific Condition I.D.3.c of this Attachment shall constitute a period of excess emissions.

6. Permittee shall maintain readily available records of the guaranteed design total drift rate of the indirect cooling water mechanical-draft wet cooling tower, as specified by the vendor or installer of the drift eliminators.

7. *Effective Date*

Compliance with Specific Conditions III.E.1 through III.E.6 of this Attachment shall be required no later than 120 days after issuance of this permit.

F. Monitoring, Recordkeeping, and Reporting Requirements for Other Periodic Activities

[A.A.C. R18-2-306.A.3.b]

1. *Mobile Sources*

Permittee shall keep a record of all emissions related maintenance activities performed on Permittee's mobile sources stationed at the facility as per manufacturer’s specifications.

2. Nonvehicle Air Conditioner Maintenance and/or Services

Permittee shall keep all records required by the applicable requirements of 40 CFR 82 Subpart F in a file and shall make appropriate submittals to the Director.

IV. TESTING REQUIREMENTS

A. In accordance with EPA Reference Method 9, readings shall be defined as an average of 24 consecutive opacity observations recorded at 15-second intervals. A set is composed of any 24 consecutive observations. Sets need not be consecutive in time and in no case shall two sets overlap. For each set of 24 observations, the average shall be calculated by summing the opacity of the 24 observations and dividing this sum by 24.

[40 CFR 60, Appendix A, Method 9, Section 2.5]

B. Melt Shop Operations

1. Permittee shall conduct initial performance testing within 120 days after startup of the enhanced secondary post-combustion system. Thereafter, Permittee shall conduct annual performance testing with a frequency of at least once per twelve months, unless the melt shop is not operating to produce steel. In the event that annual performance testing is not performed because the melt shop is not operating, testing shall be performed within 30 days after operation is restarted.

[A.A.C. R18-2-406A.4; 40 CFR 60.8]

2. Following initial performance testing demonstrating compliance and implementation of CAM for PM, the Department may extend the testing frequency for PM and lead. Following initial performance testing for CO, NOx, SO_2,and VOC, the Permittee shall monitor CO, NOx, and SO_2 emission rates using the CERMS. The Department may accept the CERMS RATA testing and CERMS data in lieu of performance testing as indicators of compliance for CO, NOx , SO_2, and VOC. For the five year permit renewal, performance testing for PM, SO_2, NOx, CO, and VOCs shall be done at least six months, but not more than 12 months, prior to permit expiration.

[A.A.C. R18-2-406A.4; 40 CFR 60.8]

3. Permittee shall perform initial and subsequent performance tests for PM and lead using the procedures of EPA Methods 5D and 12, respectively. Each performance test shall consist of three separate runs. Each run shall be conducted with a sampling time of at least 8 hours and shall include an integral number of heats.

[A.A.C. R18-2-406A.4; 40 CFR 60.8; 40 CFR 60.275a]

4. Permittee shall perform initial and subsequent performance tests for PM10 using Method 5D and sampling and analysis procedures similar to those outlined in Method 202, with adjustments to eliminate the effects of sulfate pseudoparticulate formation in the sampling train. Permittee shall submit a PM10 testing protocol to the Department for its review at least 60 days prior to the date of the initial performance test. Each performance test shall consist of three separate runs. Each run shall be conducted with a sampling time of at least 8 hours and shall include an integral number of heats. [A.A.C. R18-2-406A.4; 40 CFR 60.8; 40 CFR 60.275a]

5. Permittee shall perform initial and subsequent performance tests for SO_2, NOx, CO, and VOCs using the procedures of EPA Methods 6C, 7E, 10, and 25A, respectively. Each performance test shall consist of three separate runs. Each run shall be conducted with a sampling time of at least 24 hours and shall include an integral number of heats. The performance test runs for NOx, CO, and VOCs shall be concurrent. [A.A.C. R18-2-406A.4; 40 CFR 60.8; 40 CFR 60.275a]

6. Permittee shall perform initial and annual performance tests to determine opacity using EPA Method 9 and the procedures in 40 CFR 60.11. [40 CFR 60.8]

C. Reheat Furnace

1. Permittee shall conduct initial performance testing within 120 days after issuance of this permit, and shall conduct permit renewal performance testing at least six months, but not more than 12 months, prior to expiration of this permit. [A.A.C. R18-2-406A.4]

2. Permittee shall perform the testing required in Specific Condition IV.C.1 for PM10, NOx, and CO using the procedures of EPA Methods 201A and 202, 7E and 10, respectively. In the event that Method 201A is not suitable for testing of the reheat furnace exhaust, Permittee shall submit to the Department for its approval a sampling protocol at least 90 days prior to the scheduled date for the performance testing. The proposed sampling method for PM10 shall allow for the measurement of condensible particulate matter. [A.A.C. R18-2-406.A]

V. NEW SOURCE PERFORMANCE STANDARDS

Except as otherwise explicitly required in this permit, the melt shop is subject to the Standards of Performance for New Stationary Sources (NSPS) 40 CFR part 60, subparts A and AAa including all emission limits and all notification, testing, monitoring, and reporting requirements.

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ATTACHMENT "C": APPLICABLE REQUIREMENTS

Air Quality Control Permit No. 1000992
for
North Star Steel Company

REQUIREMENTS SPECIFICALLY IDENTIFIED AS APPLICABLE

Compliance with the terms contained in this permit shall be deemed compliance with the following federally applicable requirements in effect on the date of permit issuance:

ARIZONA ADMINISTRATIVE CODE (A.A.C.) TITLE 18, Chapter 2

ARTICLE 6	**EMISSIONS FROM EXISTING AND NEW NONPOINT SOURCES**
R18-2-601	General
R18-2-602	Unlawful Open Burning
R18-2-604	Open Areas, Dry Washes, or Riverbeds
R18-2-605	Roadways and Streets
R18-2-610	Evaluation of Nonpoint Source Emissions
ARTICLE 7	**EXISTING STATIONARY SOURCE PERFORMANCE STANDARDS**
R18-2-719	Standards of Performance for Existing Stationary Rotating Machinery
R18-2-726	Standards of Performance for Sandblasting Operations
R18-2-730	Standards of Performance for Unclassified Sources
ARTICLE 8	**EMISSIONS FROM MOBILE SOURCES (NEW AND EXISTING)**
R18-2-801	Classification of Mobile Sources
R18-2-804	Roadway and Site Cleaning Machinery
ARTICLE 9	**NEW SOURCE PERFORMANCE STANDARDS**
R18-2-901.1	40 CFR 60, Subpart A, General Provisions
R18-2-901.34	40 CFR 60, Subpart AAa, Standards of Performance for Steel Plants: EAF
R18-2-902	General Provisions

ARIZONA REVISED STATUTES(A.R.S.), CHAPTER 3, ARTICLE 2

A.R.S. 49-426.G	Permits; duties of director; exceptions; applications; objections; fees (STATE REQUIREMENT)

ACCIDENTAL RELEASE PREVENTION PROGRAM

40 CFR 68	Chemical Accident Prevention Provisions (Applicability of this regulation will be determined by the quantity of any regulated substances that will be present on-site**)**

PROTECTION OF STRATOSPHERIC OZONE

40 CFR 82	**Subpart B, Servicing of Motor Vehicle Air Conditioners**
40 CFR 82	**Subpart F, Recycling and Emissions Reduction**

ATTACHMENT "D": PROCESS AND CONTROL EQUIPMENT LIST

Air Quality Control Permit No. 1000992
for
North Star Steel Company

Permitted Equipment					
Equipment ID	**Description**	**Size**	**Equipment No.**	**Model**	**Date of Commercial Operation/ Manufacture**
Electric Arc Furnace	**Two, 40 MVA transformers with up to 8 oxy-fuel burners**	**Production capacity up to 120 tons steel per hour**	**3110-0100-0000**	**Fuchs**	**1996/1995**
Secondary Post-Combustion Chamber	**Natural gas-fired**	**120 MMBtu/hr heat input**			
Ladle Metallurgical Furnace	**Stationary, electrical**	**120 tons steel per hour**	**3310-3000-0000**	**ABB/Amerifab**	**1996/1995**
Continuous Casting Machine	**Stationary**	**120 tons steel per hour**	**3402-7000-0000**	**Concast**	**1996/1995**
Tundish Dryer	**Natural gas-fired**	**3 MMBtu/hr heat input**	**3410-0000-0000**	**Advanced Combustion TD-3**	**1996/1995**
Tundish Preheater #1	**Natural gas-fired**	**4.5 MMBtu/hr heat input**	**3410-4000-1000**	**Advanced Combustion TD-4.5**	**1996/1995**
Tundish Preheater #2	**Natural gas-fired**	**4.5 MMBtu/hr heat input**	**3410-4000-10000**	**Advanced Combustion TD-4.5**	**1996/1995**
Ladle Dryer #1	**Stationary, natural gas-fired**	**10 MMBtu/hr heat input**	**3411-1000-1000**	**Advanced Combustion LD-10**	**1996/1995**
Ladle Dryer #2	**Portable, natural gas-fired**	**10 MMBtu/hr heat input**	**3411-1000-1000**	**Advanced Combustion LD-10**	**1996/1995**
Ladle Preheater #1	**Natural gas-fired**	**14 MMBtu/hr heat input**	**3141-5001-0000**	**Advanced Combustion HLPH-14**	**1996/1995**
Ladle Preheater #2	**Natural gas-fired**	**14 MMBtu/hr heat input**	**3141-5002-0000**	**Advanced Combustion**	**1996/1995**

Permitted Equipment					
				HLPH-14	
Cut-off Torch #1	Natural gas-fired	1.043 MMBtu/hr heat input	3400-1200-1000	ALBACUT 6/A	1996/1995
Cut-off Torch #2	Natural gas-fired	1.043 MMBtu/hr heat input	3400-1200-2000	ALBACUT 6/A	1996/1995
Cut-off Torch #3	Natural gas-fired	1.043 MMBtu/hr heat input	3400-1200-3000	ALBACUT 6/A	1996/1995
Bar Test Furnace	Natural gas-fired	1.4 MMBtu/hr heat input	4330-1950-3000	Shad 5118-0	1996/1995
Re-Heat Furnace	Walking-beam type, five zones, natural gas-fired	120 tons steel per hour; 21 burners with 74 MMBtu/hr heat input	4301-0000-0000	Pittsburgh Industrial Furnace	1996/1995
ICW Cooling Tower	Mechanical draft	34,500 gpm total three cells	6410-2010-0000	N/A	1996
DCW Cooling Tower	Mechanical draft	14,000 gpm total two cells	6410-3010-0000	N/A	1996

ATTACHMENT "E": INSIGNIFICANT ACTIVITIES

Air Quality Control Permit No. 1000992
for
North Star Steel Company

No.	POTENTIAL EMISSION POINTS CLASSIFIED AS "INSIGNIFICANT ACTIVITIES" PURSUANT TO A.A.C. R18-2-101.54
1	Landscaping, building maintenance, janitorial activities
2	Building Air Conditioning Units, including portable air conditioning units and the exhaust vents from air conditioning equipment
3	Sanitary Sewer Vents
4	Batch mixers with rated capacity of 5 cubic feet or less
5	Hand-held or manually operated shop equipment, including but not limited to scrap and billet cutting, portable welders, portable torches, and pressure washer.
6	Parts cleaners
7	Laboratory equipment
8	Aerosol paint cans
9	(1) 1,000-gallon diesel tank & (2) 10,000-gallon lube oil tanks
10	10,000-gallon ethylene glycol storage tank
11	Emergency generator, diesel engine,1500 kilowatt output capacity, Caterpillar Model 3516
12	Emergency generator, diesel engine, 300 kilowatt output capacity, Caterpillar Model 3406
13	(3) Cut-off torch pilots, natural gas-fired, 37,000 Btu heat input per hour
14	Tanks and ancillary outdoor holding reservoirs required by the stormwater retention plan
15	Portable emergency generators of up to 1,750 kW, powered by internal combustion engine(s), used on a temporary basis
16	Boiler, natural gas-fired, 0.495 MMBtu/hr heat input
17	(2) Water heaters, natural gas-fired, 1.48 MMBtu/hr heat input each

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