

State of Utah

SPENCER J. COX Governor

DEIDRE HENDERSON Lieutenant Governor

Department of Environmental Quality

Kimberly D. Shelley Executive Director

DIVISION OF AIR QUALITY Bryce C. Bird Director

DAQE-IN100080048-21

September 3, 2021

Doug Jones Nucor Steel PO Box 100 Plymouth, UT 84330 doug.jones@nucor.com

Dear Mr. Jones:

Re: Intent to Approve: Modification to AO DAQE-AN100080046-20 to Add Cooling Towers Project Number: N100080048

The attached document is the Intent to Approve (ITA) for the above-referenced project. The ITA is subject to public review. Any comments received shall be considered before an Approval Order (AO) is issued. The Division of Air Quality is authorized to charge a fee for reimbursement of the actual costs incurred in the issuance of an AO. An invoice will follow upon issuance of the final AO.

Future correspondence on this ITA should include the engineer's name, **Sarah Foran**, as well as the DAQE number as shown on the upper right-hand corner of this letter. Sarah Foran, can be reached at (385) 306-6724 or sforan@utah.gov, if you have any questions.

Sincerely,

(Bh

Jon L Black NSR, Manager New Source Review Section

JLB:SF:sb

cc: Bear River Health Department Dan Fagnant, EPA Region 8

STATE OF UTAH Department of Environmental Quality Division of Air Quality

INTENT TO APPROVE DAQE-IN100080048-21 Modification to AO DAQE-AN100080046-20 to Add Cooling Towers

Prepared By Sarah Foran, Engineer (385) 306-6724 sforan@utah.gov

> Issued to Nucor Steel

Issued On September 3, 2021

Jon (Bhile) Black (Sep 2, 2021 10:06 MDT)

Jon L. Black Manager Section Manager NSR

TABLE OF CONTENTS

TITLE/SIGNATURE PAGE	1
GENERAL INFORMATION	
CONTACT/LOCATION INFORMATION	3
SOURCE INFORMATION	3
General Description	3
NSR Classification	
Source Classification	3
Applicable Federal Standards	3
Project Description	4
SUMMARY OF EMISSIONS	5
PUBLIC NOTICE STATEMENT	5
SECTION I: GENERAL PROVISIONS	5
SECTION II: PERMITTED EQUIPMENT	6
SECTION II: SPECIAL PROVISIONS	10
PERMIT HISTORY	17
ACRONYMS	

GENERAL INFORMATION

CONTACT/LOCATION INFORMATION

Owner Name Nucor Steel

Mailing Address PO Box 100 Plymouth, UT 84330 Source Name Nucor Steel

Physical Address West Nucor Rd PO Box 100 Plymouth, UT 84330

Source Contact Name Doug Jones Phone (435) 458-2415 Email doug.jones@nucor.com **UTM Coordinates**

400,539 m Easting 4,637,480 m Northing Datum NAD83 UTM Zone 12

SIC code

e 3312 (Steel Works, Blast Furnaces (Including Coke Ovens), & Rolling Mills)

SOURCE INFORMATION

General Description

Nucor Steel (Nucor) operates a minimill in Box Elder County. Shredded metal scrap is melted to create new steel products. Steel scrap is charged in the electric arc furnace (EAF). The electric charge heats the scrap until molten. Lime and dolomite are added to the molten steel to react with and float impurities. These impurities are removed as slag. The refined molten steel is then mixed with alloy elements to create the desired composition. The steel mixture is run through the caster to produce the desired mold. The molded slabs or billets are cut to size with gas torches after leaving the caster. The slabs are then sent to the rolling mill. Slabs are heated in the rolling mill to ensure the steel is malleable enough to be reduced to the desired thickness. The reheat furnaces are used to reheat cooled billets before further processing. Nucor is limited to 1.42 million tons of steel production, 8,220 hours per year of melt shop operations, 2.34 billion scf of natural gas, and 2.8 million gallons per year of propane.

<u>NSR Classification</u> Minor Modification at Major Source

Source Classification Located in Box Elder County Airs Source Size: A

Applicable Federal Standards

NSPS (Part 60), A: General Provisions NSPS (Part 60), AAa: Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983 NSPS (Part 60), IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

NSPS (Part 60), JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

MACT (Part 63), A: General Provisions

MACT (Part 63), ZZZZ: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

MACT (Part 63), YYYYY: National Emission Standards for Hazardous Air Pollutants for Area Sources: Electric Arc Furnace Steelmaking Facilities

MACT (Part 63), CCCCCC: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities

Title V (Part 70) Major Source

Project Description

Nucor has requested a modification to AO DAQE-AN100080046-20 dated December 10, 2020, to add a new cooling tower system. The new system will support the addition of a new line in rolling mill #2 to produce spooled rebar. Two (2) new cooling towers will control the new water system. The towers will operate with high-efficiency drift eliminators (0.0006%). The site-wide emissions are limited through the melt shop hours of operation and the natural gas use of the furnace. The new spooling line will divert existing steel production from the rolling mill to the spooling line. This line will increase the site-wide PM₁₀ and PM_{2.5} emissions emitting from the cooling tower.

Nucor will also replace two (2) of the existing 9.33 MBtu/hr burners on Reheat Furnace #2 (II.A.9 of this modification) with four (4) 4.66 MMBtu/hr Ultra-Low NO_x burners. This will result in a net-zero emissions decrease. The replacement does not change the existing NO_x limitations.

Equipment items II.A.2 - II.A.6 of AO DAQE-AN100080046-20 were previously incorporated to verify the changes reviewed in the 2013 modification and potential for significant deterioration evaluation (AO DAQE-AN100080020-13 dated December 3, 2013). Nucor's site-wide steel production was modified in 2013 to include a site-wide 1.42 million tons of steel per year. (This value is summarized on page 653 of 1301 of the 2013 NOI). The 2013 modification incorporated the changes, as follows, required for Nucor to achieve the proposed throughput: The furnaces and associated support equipment may be adjusted through the installation of eccentric bottom tap(s); sidewall and door oxygen lance burner technologies, and/or door lancing technologies; alterations in furnace movements including roof swings and tilt mechanisms; and associated components. Additional changes include water cooling system improvements, computer control equipment, refractories, alterations to raw material feeds such as alloy addition in wire and in bulk, and support equipment improvements. Support Equipment adjustments include charge bucket, ladle, crane, electrical transformers, and structure improvements, as well as associated building adjustments. Nucor projected minimizing lost time associated with equipment breakdowns through improved maintenance practices associated with the EAFs and casting system.

Adjustments to the EAFs and casting systems, improved maintenance practices to achieve the projected production rates through a continuous program of construction. The caster and associated equipment will be adjusted to increase or vary the number of strands to meet this production. Additionally, ladle handling or manipulation systems; ladle stirring; tundish; slag system; alloy additions; casting speed; mold size and shape and; liquid steel washout capture systems adjustments to meet the desired production rate.

Condition II.B.1.a incorporates this throughput for which the 2013 PTE was estimated.

SUMMARY OF EMISSIONS

The emissions listed below are an estimate of the total potential emissions from the source. Some rounding of emissions is possible.

Criteria Pollutant	Change (TPY)	Total (TPY)
CO ₂ Equivalent	0	151073.00
Carbon Monoxide	0	2993.21
Nitrogen Oxides	0	346.85
Particulate Matter	0	235.50
Particulate Matter - PM ₁₀	0.09	266.58
Particulate Matter - PM _{2.5}	0.08	245.54
Sulfur Dioxide	0	253.32
Volatile Organic Compounds	0	150.27

Hazardous Air Pollutant	Change (lbs/yr)	Total (lbs/yr)
Total HAPs (CAS #THAPS)	0	33820
	Change (TPY)	Total (TPY)
Total HAPs	0	16.91

PUBLIC NOTICE STATEMENT

The NOI for the above-referenced project has been evaluated and has been found to be consistent with the requirements of UAC R307. Air pollution producing sources and/or their air control facilities may not be constructed, installed, established, or modified prior to the issuance of an AO by the Director.

A 30-day public comment period will be held in accordance with UAC R307-401-7. A notification of the intent to approve will be published in the Box Elder News & Journal on September 8, 2021. During the public comment period the proposal and the evaluation of its impact on air quality will be available for the public to review and provide comment. If anyone so requests a public hearing within 15 days of publication, it will be held in accordance with UAC R307-401-7. The hearing will be held as close as practicable to the location of the source. Any comments received during the public comment period and the hearing will be evaluated. The proposed conditions of the AO may be changed as a result of the comments received.

SECTION I: GENERAL PROVISIONS

The intent is to issue an air quality AO authorizing the project with the following recommended conditions and that failure to comply with any of the conditions may constitute a violation of the AO.

I.1	All definitions, terms, abbreviations, and references used in this AO conform to those used in the UAC R307 and 40 CFR. Unless noted otherwise, references cited in these AO conditions refer to those rules. [R307-101]
I.2	The limits set forth in this AO shall not be exceeded without prior approval. [R307-401]
I.3	Modifications to the equipment or processes approved by this AO that could affect the emissions covered by this AO must be reviewed and approved. [R307-401-1]

I.4	All records referenced in this AO or in other applicable rules, which are required to be kept by the owner/operator, shall be made available to the Director or Director's representative upon request, and the records shall include the five-year period prior to the date of the request. Unless otherwise specified in this AO or in other applicable state and federal rules, records shall be kept for a minimum of five (5) years. [R307-401-8]
I.5	At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any equipment approved under this AO, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Director which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. All maintenance performed on equipment authorized by this AO shall be recorded. [R307-401-4]
I.6	The owner/operator shall comply with UAC R307-107. General Requirements: Breakdowns. [R307-107]
I.7	The owner/operator shall comply with UAC R307-150 Series. Emission Inventories. [R307-150]
I.8	The owner/operator shall submit documentation of the status of construction or modification to the Director within 18 months from the date of this AO. The owner/operator shall install II.A.32 no later than December 1, 2022. This AO may become invalid if construction is not commenced within 18 months from the date of this AO or if construction is discontinued for 18 months or more. To ensure proper credit when notifying the Director, send the documentation to the Director, attn.: NSR Section. [R307-401-18]

SECTION II: PERMITTED EQUIPMENT

The intent is to issue an air quality AO authorizing the project with the following recommended conditions and that failure to comply with any of the conditions may constitute a violation of the AO.

II.A <u>THE APPROVED EQUIPMENT</u>

II.A.1	Nucor Plymouth Minimill Electric Arc Furnace Steel Mill
II.A.2	Melt Shop Equipment and Operations Melt shop operations include: skull lancing; natural gas-fired horizontal and vertical ladle preheaters; tundish preheaters; ladle/ tundish demolition, reconstruction, rebricking and torching. Control: EAF Baghouse

II.A.3	Two (2) Electric Arc Furnaces (EAF) Capacity: 65-tons Each Includes: natural gas oxy-fuel fired burners and oxygen lances, flux/carbon addition and injection systems. Control: EAF baghouse. Direct emission control (DEC) system during melting/refining and by a canopy evacuation system during charging/tapping.				
	NSPS Applicability: Subpart AAa				
II.A.4	Caster and associated equipment				
	Continuous casting system with provisions for alloy addition; supplemental oxygen injection heating; backup alloy stir station; and automatic and manual torching operations to cut billets to length.				
	Control: EAF baghouse				
II.A.5	Seven (7) Storage silos				
	A. One (1) EAF Baghouse Material Storage Silo				
	B. Two (2) Lime/Dolomite Storage Silos Control: Fabric Filter baghouse(s)				
	C. Two (2) Carbon Storage Silos Control: Internal venting; EAF baghouse				
	D. Two (2) Carbon Process Silos Control: Baghouse Filter Each				
II.A.6	Scrap/scrap substitute handling operations				
II.A.7	Slag stockpiles* *The stockpiles are listed for informational purposes only.				
II.A.8	Raw Materials Handling System Alloy, Coal, and Flux Unloading, Storage, and Charge Bucket Loading				
	A. Northeast Rail Station				
	B. Melt Shop Station(s)				
II.A.9	Billet reheat furnace #1Fuel:Natural Gas/PropaneControl:Low-NOx burnersMaximum NOx Burner Rating:0.090 lb NOx/MMBTUCapacity:1320 MMcf/yr				
II.A.10	Billet reheat furnace #2Fuel:Natural Gas/PropaneControl:Ultra-Low NOx burnersMaximum NOx Burner Rating:0.075 lb NOx/MMBTUCapacity:980 MMcf/yr				
II.A.11	Water desalination plant Plant wide water treatment.				

II.A.12	Associated mobile equipment* *This equipment is listed for informational purposes only.			
II.A.13	Miscellaneous parts washers			
II.A.14	Sandblast station(s)			
II.A.15	Six (6) Water Cooling Systems* *includes one (1) new system with two (2) new cooling towers Control: High efficiency drift eliminator (0. 0006%) Cooling Tower Cells (Each)			
II.A.16	Lime, fluorspar, charge carbon, and alloy handling			
II.A.17	Miscellaneous Gas-Fired Equipment Miscellaneous plant-wide natural gas/ propane cutting torches and burners Rating: Less than 1 MMBtu/hour Each *This equipment is listed for informational purposes only.			
II.A.18	Hot steel rolling operations Control: Internally venting baghouses			
II.A.19	Scrap Steel Stockpiles* *This equipment is listed for informational purposes only.			
II.A.20	Fuel Storage TanksContents:Diesel and GasolineCapacity:Less than 19,812 gallonsMACT Applicability:Subpart CCCCCC			
П.А.21	Two (2) Reheat Backup Water Pump Engines Reheat #2 Emergency Cooling Water Pump Engine Rating: 36 kW, 66 hp Fuel: Diesel Spare Reheat #2 Emergency Cooling Water Pump Rating: 36 kW, 66 hp Fuel: Diesel NSPS Applicability: Subpart IIII MACT Applicability: Subpart ZZZZ			
II.A.22	Two (2) Pumphouse Backup Water Pump Engines Main Pumphouse Emergency Cooling Water Pump Engine Rating 368 hp Fuel: Diesel Spare Main Pumphouse Emergency Cooling Water Pump Engine Rating 368 hp Fuel: Diesel NSPS Applicability: Subpart IIII MACT Applicability: Subpart ZZZZ			

II.A.23	Two (2) Mold Backup Water Pump Engines Mold Water Emergency Pump Engine Fuel: Natural Gas				
	Spare Mold Water Emergency Pump Engine Fuel: Natural Gas				
	NSPS Applicability: Subpart JJJJ MACT Applicability: Subpart ZZZZ				
II.A.24	One (1) Di-ethylene glycol storage tank Capacity: 12,000 gallons				
II.A.25	Paint Dip Line				
II.A.26	Roll Mill #1 Roll Mill Heat Retention Boxes Fuel: Natural Gas Controls: Jump Mill Baghouse Abrasive Saw Shack Baghouse				
II.A.27	Unpowered Ladle Stir Stations/Powered LMFs* Ladle Metallurgy Furnaces (LMFs) *electric powered				
II.A.28	Ladle Vacuum DegasserBurner rating0.005 lb NOx/tonControl:Flare				
II.A.29	EAF hydraulics Engines Fuel: Natural Gas				
II.A.30	Maintenance Building Equipment Control: Fabrication Shop Baghouse				
II.A.31	Three (3) Natural Gas Emergency GeneratorsCapacities:One (1) - 100 hp or lessTwo (2) - 460 hp or less EachNSPS Applicability:Subpart JJJJMACT Applicability:Subpart ZZZZ				
II.A.32	Two (2) Diesel Emergency GeneratorsCapacities:51 hp or less EachNSPS Applicability:Subpart IIIIMACT Applicability:Subpart ZZZ				
II.A.33	Six (6) Gasoline Emergency GeneratorsCapacities:Less than 25hp EachNSPS Applicability:Subpart JJJJMACT Applicability:Subpart ZZZZ				

SECTION II: SPECIAL PROVISIONS

The intent is to issue an air quality AO authorizing the project with the following recommended conditions and that failure to comply with any of the conditions may constitute a violation of the AO.

II.B <u>REQUIREMENTS AND LIMITATIONS</u>

II.B.1	Site-wide Limitations				
II.B.1.a	The owner/operator shall not exceed 1.42 million tons of steel production per rolling 12-month period. [R307-401-8]				
II.B.1.a.1	To demonstrate compliance, the owner/operator shall maintain a log of monthly production rates. To determine compliance with a rolling 12-month total, the owner/operator shall calculate a new 12-month total by the 20th day of each month using data from the previous 12 months. Records of production shall be kept for all periods when the plant is in operation. [R307-401-8]				
II.B.1.b	The owner/operator shall not allow visible emissions from the following emission points to exceed the following opacities:				
	А.	Fabrication Shop baghouse - 10%			
	B.	Natural gas-fired generators - 10%			
	C.	Emissions from the shop and due solely to operations of any electric arc furnaces - 6%			
	D. Exhaust of the EAF baghouse - less than 3%E. EAF dust handling equipment - less than 10%				
	F.	F. Carbon storage silo baghouse exhaust - 10%			
	G. Lime/dolomite storage silo exhaust - 10%				
	H. Roll Mill #1 baghouses - 10%I. Unpaved haul roads and service roads - 20% on site and 10% at the property bound				
	J. Fugitive Emission Sources- 15%				
	K.	Paved haul roads and service roads - 10%			
	L.	Additive (coke breeze, feldspar, alloys, lime, etc.) batching operations - 10%			
	M.	Reheat Furnace #1 and #2 - 10%			
	N. Sandblasting - 40%				
	О.	All other points - 20%.			
	[40 CF	FR 60 Subpart AAa, R307-201, R307-206-4, R307-309-4, R307-309-5, R307-401-8]			

II.B.1.b.1	 Unless otherwise noted, opacity observations of emissions from stationary sources shall be conducted according to 40 CFR 60, Appendix A, Method 9. In lieu of monitoring via visible emission observations for Reheat Furnace #1 and #2, fuel usage shall be monitored to demonstrate that only natural gas or propane is being used as fuel. Results of monitoring for Reheat Furnace #1 and #2 shall be maintained in accordance with R307-415-6a(3)(b). [R307-201, R307-415-6a]
II.B.1.c	The owner/operator shall perform visible emission observations of emissions from the EAF baghouse with a certified observer. Observations shall be conducted at least once per day when at least one (1) of the furnaces is operating in the melting/refining stage. These observations shall be taken in accordance with Method 9, and for at least three (3) six-minute periods. Records of daily observations shall be maintained on site. [R307-401]
II.B.1.c.1	Opacity observations of fugitive dust from intermittent sources shall be conducted according to 40 CFR 60, Appendix A, Method 9; however, the requirement for observations to be made at 15-second intervals over a six-minute period shall not apply. The number of observations and the time period shall be determined by the length of the intermittent source. For fugitive dust generated by mobile sources, visible emissions shall be measured at the densest point of the plume but at a point not less than one-half vehicle length behind the vehicle and not less than one-half the height of the vehicle. [R307-401-8]
II.B.2	Requirements and Limitations for the Melt Shop
II.B.2.a	The owner/operator shall not exceed 8,220 hours of melt shop operation per rolling 12-month period. [R307-401-8]
II.B.2.a.1	Hours of operation shall be determined by supervisor's monitoring and maintenance of a daily operations log. Total hours shall be calculated, by the twentieth day of each month. The 12-month total shall be totaled on the first day of each month using data from the previous 12 months. [R307-401-8]

II.B.2.b	The owner/operator shall not allow emissions to the atmosphere from the indicated emission point(s) to exceed the following rates and concentrations*: Source: EAF Baghouse				
	Pollutant (68F, 29.92 in Hg)	lb/hr	grains/dscf	tons/year	
	TSP (filterable) PM ₁₀ (filterable) PM _{2.5} (filterable, 24-hr ave) PM _{2.5} (condensibles, 24-hr ave) SO ₂ (3-hr ave) SO ₂ (24-hr ave)	27.0 17.8 17.4 29.53 93.98 89.0	0.0030 0.0018 0.00176		
	SO_2 (colling 12-month total) NO_x (colling 12-month total) CO (1-hr ave) CO (8-hr ave)	1,200 682.93		245 245	
	CO (rolling 12-month total) VOC	22.20		2,800	
	Source: Reheat Furnace #1				
	Pollutant	lb/hr			
	NO _x	15.0			
	Source: Reheat Furnace #2				
	Pollutant	lb/hr			
	NO _x	8.0			
	*For particulate emission limits where dual limits are listed, both limits apply.				
	[R307-401-8]				

II.B.2.c	The owner/operator shall perform stack testing to demonstrate compliance with the emission limitations within the following frequencies:		
	Emissions Point Pollutant		Test Frequency
	EAF B TSP PM ₁₀ PM _{2.5} PM _{2.5} C SO ₂ NO _x CO VOC	aghouse Condensable	Every year Every year Every year Every year CEM CEM Every year
	Reheat Furnace #1 NO _x		Every year
	Reheat NO _x	Furnace #2	Every year.
	[R307-	401-8, SIP Secti	ion IX.H.12.k]
II.B.2.c.1	Stack testing shall be performed as outlined below:		erformed as outlined below:
	A.	Testing Status PM ₁₀ and PM _{2.} TSP emissions with the PM ₁₀ a testing will be a yearly TSP test	⁵ (filterable) compliance may be demonstrated through TSP testing. If the are below the PM_{10} and $PM_{2.5}$ limit, then that will constitute compliance and $PM_{2.5}$ limits. If the TSP emissions are not below the PM_{10} limit, required. If required, this test will be completed within 120 days of the t.
	B.	Notification The Director sh testing. A sour submitted to th	hall be notified at least 30 days prior to conducting any required emission rece test protocol shall be submitted to DAQ when the testing notification is e Director.
		The source test The source test and procedures Director.	protocol shall be approved by the Director prior to performing the tests. protocol shall outline the proposed test methodologies, stack to be tested, to be used. A pretest conference shall be held, if directed by the
	C.	Sample Location The emission p Appendix A, M Director. An O and Health Adu location.	on boint shall be designed to conform to the requirements of 40 CFR 60, Method 1, or other EPA approved testing methods acceptable to the Occupational Safety and Health Administration (OSHA) or Mine Safety ministration (MSHA) approved access shall be provided to the test
	D.	Volumetric Flo 40 CFR 60, Ap to the Director.	w Rate opendix A, Method 2 or other EPA-approved testing methods acceptable
	E.	TSP 40 CFR 60. Ap to the Director. and 160 dscfm.	ppendix A, Method 5D, or other EPA-approved testing method acceptable. The minimum sample time and sample volume shall be four (4) hours

 Condensable particulate emissions shall not be used for compliance demonstration, but shall be used for inventory purposes. G. PM_{2.5} Filterable PM_{2.5} 40 CFR 51, Appendix M, Method 201A or other EPA-approved testing method as acceptable to the Director. If other approved testing methods are used which cannot measure the PM_{2.5} fraction of the filterable particulate emissions, all of the filterable particulate emissions shall be considered PM_{2.5}. The following methods shall be used to measure condensable particulate emissions: 40 CFR 51, Appendix M, Method 202, or other EPA-approved testing method, as acceptable to the Director. Both the filterable particulate emissions and the condensable particulate emissions shall be used for compliance demonstration. H. Nitrogen Oxides (NO_x) 40 CFR 60, Appendix A, Method 7, 7A, 7B, 7C, 7D, 7E, or other EPA approved testing methods acceptable to the Director. I. Volatile Organic Compounds (VOCs) VOC emissions shall be determined using 40 CFR 60, App. A, Method 25A using a flame ionization analyzer equipped with a methane separator. If such an analyzer is unavailable, VOC emissions shall be determined simultaneously using two (2) analyzers, with one (1) configured to read only methane. The difference between the total organic detector shall constitute the VOC measurement. or VOC shall be determined through a combination of40 CFR 60, App. A, Method 25A and Method 18. The Method 25A flame ionization analyzer, calibrated as propane, shall measure total hydrocarbons. The owner/operator shall use Tedlar bags to collect and analyze methane in accordance with 40 CFR 60, App. A-6, Method 18. Methane shall be subtracted from the total hydrocarbons to determine the total non-methane VOC emissions. [R307-165, R307-401-8] 	F.	PM_{10} Filterable PM_{10} 40 CFR 51, Appendix M, Method 201; Method 201A; or other EPA-approved testing method as acceptable to the Director. If other approved testing methods are used which cannot measure the PM_{10} fraction of the filterable particulate emissions, all of the filterable particulate emissions shall be considered PM_{10}
 G. PM_{2.5} Filterable PM_{2.5} 40 CFR 51, Appendix M, Method 201A or other EPA-approved testing method as acceptable to the Director. If other approved testing methods are used which cannot measure the PM_{2.5} fraction of the filterable particulate emissions, all of the filterable particulate emissions shall be considered PM_{2.5}. The following methods shall be used to measure condensable particulate emissions: 40 CFR 51, Appendix M, Method 202, or other EPA-approved testing method, as acceptable to the Director. Both the filterable particulate emissions and the condensable particulate emissions shall be used for compliance demonstration. H. Nitrogen Oxides (NO_x) 40 CFR 60, Appendix A, Method 7, 7A, 7B, 7C, 7D, 7E, or other EPA approved testing methods acceptable to the Director. I. Volatile Organic Compounds (VOCs) VOC emissions shall be determined using 40 CFR 60, App. A, Method 25A using a flame ionization analyzer equipped with a methane separator. If such an analyzer is unavailable, VOC emissions shall be determined simultaneously using two (2) analyzers, with one (1) configured to read only methane. The difference between the total organic detector and the methane detector shall constitute the VOC measurement. or VOC shall be determined through a combination of40 CFR 60, App. A, Method 25A and Method 18. The Method 25A flame ionization analyzer, calibrated as propane, shall measure total hydrocarbons. The owner/operator shall use Tedlar bags to collect and analyze methane in accordance with 40 CFR 60, App. A-6, Method 18. Methane shall be subtracted from the total hydrocarbons to determine the total non-methane VOC emissions. 	Conder The con be used	nsable ndensable particulate emissions shall not be used for compliance demonstration, but shall I for inventory purposes.
 The following methods shall be used to measure condensable particulate emissions: 40 CFR 51, Appendix M, Method 202, or other EPA-approved testing method, as acceptable to the Director. Both the filterable particulate emissions and the condensable particulate emissions shall be used for compliance demonstration. H. Nitrogen Oxides (NO_x) 40 CFR 60, Appendix A, Method 7, 7A, 7B, 7C, 7D, 7E, or other EPA approved testing methods acceptable to the Director. I. Volatile Organic Compounds (VOCs) VOC emissions shall be determined using 40 CFR 60, App. A, Method 25A using a flame ionization analyzer equipped with a methane separator. If such an analyzer is unavailable, VOC emissions shall be determined simultaneously using two (2) analyzers, with one (1) configured to read only methane. The difference between the total organic detector and the methane detector shall constitute the VOC measurement. or VOC shall be determined through a combination of40 CFR 60, App. A, Method 25A and Method 18. The Method 25A flame ionization analyzer, calibrated as propane, shall measure total hydrocarbons. The owner/operator shall use Tedlar bags to collect and analyze methane in accordance with 40 CFR 60, App. A-6, Method 18. Methane shall be subtracted from the total hydrocarbons to determine the total non-methane VOC emissions. 	G.	PM _{2.5} Filterable PM _{2.5} 40 CFR 51, Appendix M, Method 201A or other EPA-approved testing method as acceptable to the Director. If other approved testing methods are used which cannot measure the PM _{2.5} fraction of the filterable particulate emissions, all of the filterable particulate emissions shall be considered PM _{2.5} .
 Both the filterable particulate emissions and the condensable particulate emissions shall be used for compliance demonstration. H. Nitrogen Oxides (NO_x) 40 CFR 60, Appendix A, Method 7, 7A, 7B, 7C, 7D, 7E, or other EPA approved testing methods acceptable to the Director. I. Volatile Organic Compounds (VOCs) VOC emissions shall be determined using 40 CFR 60, App. A, Method 25A using a flame ionization analyzer equipped with a methane separator. If such an analyzer is unavailable, VOC emissions shall be determined using the determined using two (2) analyzers, with one (1) configured to read only methane. The difference between the total organic detector and the methane detector shall constitute the VOC measurement. or VOC shall be determined through a combination of40 CFR 60, App. A, Method 25A and Method 18. The Method 25A flame ionization analyzer, calibrated as propane, shall measure total hydrocarbons. The owner/operator shall use Tedlar bags to collect and analyze methane in accordance with 40 CFR 60, App. A-6, Method 18. Methane shall be subtracted from the total hydrocarbons to determine the total non-methane VOC emissions. iR307-165, R307-401-8] 	The fol Append	llowing methods shall be used to measure condensable particulate emissions: 40 CFR 51, dix M, Method 202, or other EPA-approved testing method, as acceptable to the Director.
 H. Nitrogen Oxides (NO_x) 40 CFR 60, Appendix A, Method 7, 7A, 7B, 7C, 7D, 7E, or other EPA approved testing methods acceptable to the Director. I. Volatile Organic Compounds (VOCs) VOC emissions shall be determined using 40 CFR 60, App. A, Method 25A using a flame ionization analyzer equipped with a methane separator. If such an analyzer is unavailable, VOC emissions shall be determined simultaneously using two (2) analyzers, with one (1) configured to read only methane. The difference between the total organic detector and the methane detector shall constitute the VOC measurement. or VOC shall be determined through a combination of40 CFR 60, App. A, Method 25A and Method 18. The Method 25A flame ionization analyzer, calibrated as propane, shall measure total hydrocarbons. The owner/operator shall use Tedlar bags to collect and analyze methane in accordance with 40 CFR 60, App. A-6, Method 18. Methane shall be subtracted from the total hydrocarbons to determine the total non-methane VOC emissions.	Both th for com	ne filterable particulate emissions and the condensable particulate emissions shall be used appliance demonstration.
 I. Volatile Organic Compounds (VOCs) VOC emissions shall be determined using 40 CFR 60, App. A, Method 25A using a flame ionization analyzer equipped with a methane separator. If such an analyzer is unavailable, VOC emissions shall be determined simultaneously using two (2) analyzers, with one (1) configured to read only methane. The difference between the total organic detector and the methane detector shall constitute the VOC measurement. or VOC shall be determined through a combination of40 CFR 60, App. A, Method 25A and Method 18. The Method 25A flame ionization analyzer, calibrated as propane, shall measure total hydrocarbons. The owner/operator shall use Tedlar bags to collect and analyze methane in accordance with 40 CFR 60, App. A-6, Method 18. Methane shall be subtracted from the total hydrocarbons to determine the total non-methane VOC emissions. [R307-165, R307-401-8] 	H.	Nitrogen Oxides (NO _x) 40 CFR 60, Appendix A, Method 7, 7A, 7B, 7C, 7D, 7E, or other EPA approved testing methods acceptable to the Director.
VOC shall be determined through a combination of40 CFR 60, App. A, Method 25A and Method 18. The Method 25A flame ionization analyzer, calibrated as propane, shall measure total hydrocarbons. The owner/operator shall use Tedlar bags to collect and analyze methane in accordance with 40 CFR 60, App. A-6, Method 18. Methane shall be subtracted from the total hydrocarbons to determine the total non-methane VOC emissions.	I.	Volatile Organic Compounds (VOCs) VOC emissions shall be determined using 40 CFR 60, App. A, Method 25A using a flame ionization analyzer equipped with a methane separator. If such an analyzer is unavailable, VOC emissions shall be determined simultaneously using two (2) analyzers, with one (1) configured to read only methane. The difference between the total organic detector and the methane detector shall constitute the VOC measurement. or
[R307-165, R307-401-8]	VOC s Method measure methan from the	hall be determined through a combination of 40 CFR 60, App. A, Method 25A and d 18. The Method 25A flame ionization analyzer, calibrated as propane, shall re total hydrocarbons. The owner/operator shall use Tedlar bags to collect and analyze is in accordance with 40 CFR 60, App. A-6, Method 18. Methane shall be subtracted are total hydrocarbons to determine the total non-methane VOC emissions.
	[R307-	165, R307-401-8]

II.B.2.c.2	J. Calculations	
	To determine mass emission rates (lb/hr, etc.) the pollutant concentration as determined by the appropriate methods above shall be multiplied by the volumetric flow rate and any necessary conversion factors determined by the Director, to give the results in the specified units of the emission limitation.	
	K. Existing Source Operation	
	For an existing source/emission point, the production rate during all compliance testing shall be no less than 90% of the maximum production achieved in the previous three (3) years.	
	[R307-401-8]	
II.B.2.d	The owner/operator shall install, calibrate, maintain, and operate a CEM system on EAF baghouse exhaust stacks. The owner/operator shall record the output of the system, for measuring the NO_x emissions, SO_2 emissions, and CO emissions. The monitoring system shall comply with all applicable sections of R307-170 and 40 CFR 60, Appendix B.	
	Except for system breakdown, repairs, calibration checks, and zero and span adjustments required under paragraph (d) 40 CFR 60.13, the owner/operator shall continuously operate all required continuous monitoring systems and shall meet minimum frequency of operation requirements as outlined in 40 CFR 60.13 and Section R307-170.	
	[R307-401-8]	
II.B.2.e	The owner/operator shall comply with the monitoring of operations parameters of 40 CFR § 60.274a. [40 CFR 60 Subpart AAa]	
II.B.3	Fuels	
II.B.3.a	The owner/operator shall use only natural gas or propane as a fuel in the steel making processes. [R307-401-8]	
II.B.3.b	The owner/operator shall not exceed the following per rolling 12-month total:	
	A. 2,340,000,000 scf of natural gas plant-wide, not including fuel consumed by oxy-fuel burners for the two (2) EAFs.	
	B. 2,800,000 gallons of propane.	
	[R307-401-8]	
II.B.3.b.1	Compliance with the natural gas limitation shall be determined through vendor billing statements. Records shall include the appropriate conversion of acf to scf, as recommended by the vendor. Fuel consumed by the EAF oxy-fuel burners may be subtracted. Consumption of propane shall be determined by records of propane consumed at the steel making plant. [R307-401-8]	
II.B.3.b.2	The owner/operator shall install a meter or meters, which measures the amount of natural gas consumed by the EAF oxy-fuel burner and a meter, which measures the volume of propane-consumed plant wide. [R307-401-8]	
II.B.3.c	The owner/operator shall only combust diesel fuel (fuel oil #1, #2, or diesel fuel oil additives) that meet the definition of ultra-low sulfur diesel (ULSD), and contain no more than 15 ppm sulfur on-site. [R307-401-8]	

II.B.3.c.1	To demonstrate compliance with the ULSD fuel requirement, the owner/operator shall maintain records of diesel fuel purchase invoices or obtain certification of sulfur content from the diesel fuel supplier. The diesel fuel purchase invoices shall indicate that the diesel fuel meets the ULSD requirements. [R307-401-8]
II.B.4	Roads and Fugitive Dust Requirements and Limitations
II.B.4.a	The owner/operator shall water spray and/or chemically treat all unpaved roads and other unpaved operational areas that are used by mobile equipment to control fugitive dust. Treatment with water shall be of sufficient frequency and quantity to maintain the surface material in a damp/moist condition. [R307-401-8]
II.B.4.b	The owner/operator shall sweep or water-flush-clean the paved haul roads and operational areas as needed to maintain the opacity requirements listed in this AO. [R307-401-8]
II.B.4.b.1	Records of chemical, water treatment, and sweeping shall be kept in a log for all periods when the plant is in operation. Records shall include the following items:
	A. Date and time
	B. Number and type of treatments made
	C. Dilution ratio, if applicable.
	[R307-401-8]
II.B.4.c	The owner/operator shall not have active exterior coke breeze, and feldspar stockpiles on site. [R307-401-8]
II.B.4.d	The owner/operator shall install and operate water sprays on all conveyor transfer points and batching equipment drop points. The sprays shall operate to maintain the opacities listed in this AO. Water spray are not required on enclosed transfer/drop points. [R307-401-8]
II.B.5	VOC Limitations
II.B.5.a	The owner/operator shall not emit more than 42.64 tons of VOCs per rolling 12-month period from evaporative sources (miscellaneous solvent, cleaners (excluding janitorial), painting, and rolling mill oil and grease) on site. [R307-401-8]
II.B.5.a.1	The owner/operator shall calculate a new 12-month total by the 20th day of each month using data from the previous 12 months. The plant-wide emissions of VOCs from the solvents, cleaners, and paints shall be determined through material-use each month and material VOC-content. The rolling mill VOC calculation shall be determined by the weight of oil and grease purchased for the rolling mill multiplied by 4.63%. [R307-401-8]
II.B.6	Emergency Generator and Backup Pump Engine Requirements
II.B.6.a	The owner/operator shall not operate any emergency generator engine and backup pump engine on site for more than 100 hours per calendar year for regular maintenance, testing, and other allowed non-emergency uses listed in 40 CFR 60 Subpart ZZZZ. There is no restriction on use during emergency situations. [40 CFR 60 Subpart ZZZZ, R307-401-8]

II.B.6.a.1	Compliance shall be determined using the total hours of non-emergency use per calendar year, totaled at the end of each calendar month. Records documenting the operation of each emergency engine and backup pump engine shall be kept in a log and shall include the following:		
	1. The date the engine was used		
	2. The duration of operation in hours		
	3. The reason for use		
	[40 CFR 60 Subpart ZZZZ, R307-401-8]		
II.B.6.a.2	To determine the duration of operation, the owner/operator shall install a non-resettable hour meter for each emergency engine. [40 CFR 60 Subpart ZZZZ, R307-401-8]		
II.B.6.b	The owner/operator shall only operate one backup water pump engine (II.A.21, II.A.22, and II.A.23) at any time. The total backup water pump engines installed shall not exceed three (3) engines.		
	[R307-401-8]		

PERMIT HISTORY

This Approval Order shall supersede (if a modification) or will be based on the following documents:

Is Derived From Supersedes Incorporates Incorporates Notice of Intent dated November 17, 2020 DAQE-AN100080046-20 dated December 10, 2020 Additional Information dated March 24, 2021 Additional Information dated June 3, 2021

ACRONYMS

The following lists commonly used acronyms and associated translations as they apply to this document:

40 CFR	Title 40 of the Code of Federal Regulations
AO	Approval Order
BACT	Best Available Control Technology
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CDS	Classification Data System (used by Environmental Protection Agency to classify
CEN (sources by size/type)
CEM	Continuous emissions monitor
CEMS	Continuous emissions monitoring system
CFR	Code of Federal Regulations
CMS	Continuous monitoring system
CO	Carbon monoxide
CO_2	Carbon Dioxide
CO_2e	Subpart A, Table A-1
COM	Continuous opacity monitor
DAQ/UDAQ	Division of Air Quality
DAQE	This is a document tracking code for internal Division of Air Quality use
EPA	Environmental Protection Agency
FDCP	Fugitive dust control plan
GHG	Greenhouse Gas(es) - Title 40 of the Code of Federal Regulations 52.21 (b)(49)(i)
GWP	Global Warming Potential - Title 40 of the Code of Federal Regulations Part 86.1818- 12(a)
HAP or HAPs	Hazardous air pollutant(s)
ITA OF ITA S	Intent to Approve
I D/VD	Dounds per year
LD/IK	Poullus per year Maximum Ashiayahla Control Tashnalasy
	Million Pritich Thormal Units
	Niniton Brush Thermal Units
NAA	Notional Ambiant Air Quality Standards
NESHAD	National Emission Standards for Hazardous Air Pollutants
NOI	National Emission Standards for Hazardous An Fondants
NO	Oxides of nitrogen
NCDC	Navy Source Performance Standard
NGD	New Source Perior
DM	Particulate matter less than 10 microns in size
DM	Particulate matter loss than 10 microns in size
F 1V12.5	Particulate matter less than 2.5 microns in size
PSD	Prevention of Significant Deterioration
PIE	Potential to Emit
R307	Rules Series 307
R307-401	Rules Series 307 - Section 401
SO_2	Sulfur dioxide
Title IV	Title IV of the Clean Air Act
Title V	Title V of the Clean Air Act
TPY	Tons per year
UAC	Utah Administrative Code
VOC	Volatile organic compounds