



**Region 6 - Enforcement & Compliance Assurance Division**  
**INSPECTION REPORT**

|                                        |                                                                        |                                           |
|----------------------------------------|------------------------------------------------------------------------|-------------------------------------------|
| Inspection Date(s):                    | 03/22/2022 – 3/23/2022                                                 |                                           |
| Media Program:                         | Clean Air Act (CAA)                                                    |                                           |
| Regulatory Program(s)                  | Louisiana SIP, Title V, NESHAP (40 CFR Part 63), NSPS (40 CFR Part 60) |                                           |
| Company Name:                          | <b>Nucor Steel Louisiana LLC</b>                                       |                                           |
| Facility Name:                         | <b>Nucor Steel Louisiana</b>                                           |                                           |
| Facility Physical Location:            | 9101 LA Hwy 3125                                                       |                                           |
| (city, state, zip code)                | Convent, LA 70723                                                      |                                           |
| Mailing address:                       | 9101 LA Hwy 3125                                                       |                                           |
| (city, state, zip code)                | Convent, LA 70723                                                      |                                           |
| County/Parish:                         | St James Parish                                                        |                                           |
| Facility Phone Number                  | (225) 331-4000                                                         |                                           |
| Facility Contact:                      | Marshall Crawford                                                      | Environmental Manager                     |
|                                        | Marshall.Crawford@nucor.com                                            |                                           |
| FRS Number:                            | 110046325400                                                           |                                           |
| Identification/Permit Number:          | LDEQ AI 157847, Permit 3086-V9                                         |                                           |
| Media Identifier Number:               | CEDRI10079752; ICIS 3601404200                                         |                                           |
| NAICS:                                 | 331110 Iron and Steel Mills and Ferroalloy Manufacturing               |                                           |
| SIC:                                   | See NAICS                                                              |                                           |
| Personnel participating in inspection: |                                                                        |                                           |
| Prince Nfodzo                          | EPA Region 6 ECDAP                                                     | Environmental Engineer, Lead Inspector    |
| Aimee Boss                             | EPA Region 6 ECDAP                                                     | Physical Scientist, Inspector-in-Training |
| Cory Lormand                           | LDEQ, Baton Rouge                                                      | Environmental Scientist                   |
| Sean Kelley                            | LDEQ, Baton Rouge                                                      | Environmental Scientist                   |
| Adam Broussard                         | LDEQ, Baton Rouge                                                      | Environmental Scientist                   |
| Marshall Crawford                      | Nucor Steel Louisiana                                                  | Environmental Manager                     |
| Erica Caruso                           | Nucor Steel Louisiana                                                  | Environmental Engineer                    |
| Lane Grant                             | Nucor Steel Louisiana                                                  | Technical Manager                         |
| Beth Brown                             | Nucor Steel Louisiana                                                  | Environmental Coordinator                 |
| Calvin Hart                            | Nucor Steel Louisiana                                                  | General Manager                           |
| Kelly Phillips                         | Nucor Steel Louisiana                                                  | Environmental Engineer                    |
| EPA Lead Inspector<br>Signature/Date   |                                                                        |                                           |
|                                        | Prince Nfodzo                                                          | Date 04/25/2022                           |
| Branch Chief<br>Signature/Date         |                                                                        |                                           |
|                                        | Steve Thompson                                                         | Date                                      |

## Section I – INTRODUCTION

### PURPOSE OF THE INSPECTION

EPA Region 6 inspectors Prince Nfodzo and Aimee Boss, and LDEQ inspectors Corry Lormand and Sean Kelley arrived at the Nucor Steel Louisiana LLC (Nucor) Direct Reduced Iron (DRI) Facility at 8:40 am on March 22, 2022, for an announced inspection. We met with Nucor representatives Marshall Crawford (Environmental Manager), Kelly Phillips (Environmental Engineer), Calvin Hart (General Manager), Lane Grant (Manager), Beth Brown (Environmental Coordinator), and Erica Caruso (Environmental Engineer). I (Prince Nfodzo) presented my credentials to Marshall Crawford and informed them that this was an EPA follow up inspection to an ongoing investigation regarding Nucor's compliance with the facility's Title V Air Permit and the Clean Air Act. The facility is the subject of an October 27, 2021, petition by Inclusive Louisiana, the Louisiana Bucket Brigade and three individual residents of St. James Parish to EPA to overfile the Louisiana Department of Environmental Quality's (LDEQ) proposed settlement with Nucor for several CAA violations. EPA Region 6 previously issued a Notice of Violation and Opportunity to Confer letter to address unauthorized emissions of hydrogen sulfide and sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) mist, and exceedance of permitted annual limits for sulfur dioxide emissions. The scope of the inspection is a full compliance evaluation (FCE) under applicable provisions of the CAA, and includes evaluation of the compliance of the facility with its Title V operating permit, and complaints from the community regarding noxious odors.

### FACILITY DESCRIPTION

Nucor's DRI facility is located at 9101 LA Hwy 3125, in Convent, St. James Parish, Louisiana. The DRI process reduces the iron oxide content of iron ore pellets into iron metal through direct contact with a reducing gas. The effectiveness of this reduction process is called metallization. The process equipment is designed to achieve a metallization rate of at least 92% of the oxides within the ore. The reduction takes place in a countercurrent vertical shaft furnace, where reducing gas passes up through iron oxide pellets which feed downward through the furnace by gravity. The major elements of the DRI process include iron oxide preparation, reducing gas preparation, operation of the DRI reactor shaft furnace, spent reducing gas preparation for reuse, DRI product handling, and, ancillary operations, including two package boilers, two cooling towers, and a flare for controlling vent gas during emergency situations. The detailed facility and process description is included as **Appendix 3**.

## Section II – OBSERVATIONS

### A. Generators

Nucor operates seven (7) emergency generators at the DRI facility which are subject to NSPS Part 60 Subpart IIII. We inspected the generators and I reviewed operating and maintenance records. I observed that Nucor is maintaining the generators per the manufacturers' requirement and keeps records as required. I observed that the generators are equipped with non-resettable hour meters as required under § 60.4209(a). Photographs of a representative generator's boilerplate information and hour meter are included as **Photo Nos. 2 and 3 in Appendix 1**. I verified that the generator boilerplate information matches Nucor's records. I reviewed Nucor's permit 3086-V9 and noticed that one

generator listed in the permit has not been installed and is not operating on site (*see Area of Concern (AOC) #4*). Additionally, some of the generators are not properly represented in the permit (*see AOC #5*).

#### **B. Baghouse/Dust Filters**

We inspected the baghouse and dust filters and did not observe any visible emissions from the exhaust outlets or housings. I reviewed Daily Visible Emissions and Differential Pressure Monitoring records, and observed that Nucor maintained records as required by permit 3086-V9. Nucor previously kept records electronically, but since May 17, 2021, has maintained hard copies of monitoring records. I noted that Nucor's electronic recording system did not have sufficient detail for some entries, and had inconsistencies in other data entered (*see AOC #1*). Additionally, a number of paper records did not provide information in sufficient detail (*see AOC #2*). Excerpts from the records reviewed are included as **Appendix 4**.

#### **C. Particulate Matter Control**

Specific Requirement (SR) 33 of Nucor's permit requires Nucor to provide partial enclosures and/or water sprays for loading, drop points, and material stockpiles; to water unpaved roadways; and, to periodically sweep paved roads. We did not observe any visible airborne dust emissions from stockpiled materials or roadways. We noticed that unpaved roadways were being watered while we were on site. I reviewed roadway watering and sweeping records, and noticed that Nucor kept the required records. However, I also noticed that recordkeeping inconsistencies revealed that some roadways were not watered during some periods (*see AOC #6*). Excerpts of the roadway watering log and roadway status information are included as **Appendix 5**.

#### **D. Process Heater and Boilers**

SR 63 of Nucor's permit requires Nucor to operate the process heater with good air pollution control equipment and practices and comply with best available control technology (BACT) emission limits for carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), and particulate matter (PM), and good combustion practices for volatile organic compounds (VOCs). Additionally, SR 60 requires Nucor to monitor NO<sub>x</sub> emissions with a continuous emissions monitoring system (CEMS). We verified that Nucor has installed a selective catalytic reduction (SCR) unit to control NO<sub>x</sub> emissions and is operating a NO<sub>x</sub> CEMS. A photograph of the CEMS analyzer is included as **Photo No. 1** in **Appendix 1**. I verified that certification and concentration of calibration gases were accurate and current. We observed that a calibration gas bottle was not properly secured, and Nucor properly secured the bottle the next day. I reviewed audit records and noticed that Nucor did not operate and maintain the CEMS at all times in accordance with the requirements of NSPS Part 60 Appendix F (*see AOC #7*). I reviewed CEMS emissions records and noticed that Nucor exceeded the NO<sub>x</sub> limit on several occasions (*see AOC #8*). Per SR 59, Nucor is required to conduct a performance test (PT) every five (5) years. I reviewed reports for PTs conducted in 2015, 2020, and 2021, and noticed that Nucor exceeded emission limits during tests performed in 2020 and 2021 (*see AOC #9*). Nucor operates two (2) natural gas-fired package boilers at the DRI facility. I reviewed and verified that Nucor kept fuel records, and maintained boilers as required.

I reviewed reports for performance tests conducted for both boilers in 2020, and noted that emission limits were not exceeded.

#### E. Flares

Nucor operates an emergency flare. During the inspection, we did not observe any visible emissions from the flare. I viewed the flare tip exit with a Forward Looking Infrared (FLIR) optical gas imaging camera and did not observe any hydrocarbon emissions. I reviewed flare records and noted that Nucor maintained records as required by NSPS and the facility's air permit.

#### F. DRI Unit 2

Nucor's Title V Permit includes provisions for a second DRI unit. Since Nucor no longer wishes to construct and operate the second DRI unit, Nucor should remove all equipment and emission representations associated with the second unconstructed unit from their permit (*see AOC #3*)

### Section III – AREAS OF CONCERN

1. The electronic system used for recording visible emissions monitoring does not provide sufficient detail on the observations made. The data system only notes whether visible emissions were observed or not, and does not provide any additional information or comments. Additionally, inconsistencies were noted in the records, for example, the records show that on 5/14/2021, VE DC-11 and VE DC-12 were both not in service (indicated with a '0'), yet visible emissions were observed (indicated with a '1').
2. Paper records of visible emissions monitoring show incomplete information, insufficient detail, and wrong entries. For example, records from 11/7/2021 show time entries for EQT 0176 and EQT 0177 as 6.0 and 3.0 respectively, instead of recognizable time designations. Additionally, the form is pre-populated with an opacity of  $\leq 20$ . Based on the content of the records reviewed, it appears that the records from the technicians are not checked for accuracy or completeness before filing.
3. Nucor's Title V permit includes provisions for the construction of DRI Unit 2, including emissions representation for a Furnace Dust Collection system and a Package Boiler which are aggregated in the facility's total emissions. Since Nucor has no intention to construct the additional unit, the DRI Unit 2 with its associated equipment and emission representations should be removed from the Title V and PSD permits.
4. Nucor's Title V permit includes provisions for the construction/installation of six (6) emergency generators. However, only five (5) generators were installed and operating. Since Nucor has no intention to construct/install the additional generator (represented as EQT 0171), this unit with its associated emission representations should be removed from the Title V permit.
5. Information Nucor provided regarding the generators show that some of the generators are incorrectly represented in the Title V permit. For example, all five of the operating emergency generators are grouped and permitted as being subject to 40 CFR 60.4205(b): *"Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in § 60.4202, for all pollutants, for the same model year and maximum*

*engine power for their 2007 model year and later emergency stationary CI ICE.”* However, generator information Nucor provided shows that EQT 0122 has a displacement of 65.3 liters per cylinder, and should comply instead with 40 CFR 60.4205(d): *“Owners and operators of emergency stationary CI engines with a displacement of greater than or equal to 30 liters per cylinder must meet the requirements in this section.”* Nucor should review and modify its permit as appropriate to ensure that each generator is properly represented with regard to applicable rules and requirements.

6. Based on records reviewed, there have been several occasions when some roadways were not watered for a long period of time. For example, there is no record of watering roadways 9, 10, 11, 12, 13, 14, 15, 16, 17, A, and B for the period of November 1 – 17, 2021. Nucor’s explanation that the roadways were not in use at such times is inconsistent with the records provided. Separate additional information provided by Nucor on roadway status showed that only roadways 9, 10, 11, 12, and A were not in use during the period.
7. NSPS Part 60 Appendix F requires CEMS to be audited quarterly and successive audit conducted not closer than two months. Nucor conducted a Cylinder Gas Audit (CGA) for the Process Heater NO<sub>x</sub> CEMS 3/13/2019 and a Relative Accuracy Test Audit (RATA) 5/7/2019. Additionally, Nucor did not conduct a CGA during the 4<sup>th</sup> quarter of 2021. NSPS Part 60 Appendix F also requires that RATA be conducted after every three quarters of conducting a CGA. Nucor did not conduct a RATA during the 2<sup>nd</sup> quarter of 2020 after conducting CGAs for the 3<sup>rd</sup> and 4<sup>th</sup> quarters of 2019 and 1<sup>st</sup> quarter of 2020.
8. CEMS data reviewed shows that Nucor exceeded the Process Heater NO<sub>x</sub> emission limit on several occasions. Additionally, there were several occasions that the NO<sub>x</sub> CEMS was out of service or out of control, and the data acquisition system (DAS) was out of service.
9. Performance Test reports reviewed show that Nucor exceeded PM, CO, SO<sub>2</sub>, H<sub>2</sub>SO<sub>4</sub> emission limits during the test conducted 1/14/2021 and PM, VOC, CO, SO<sub>2</sub> emission limits during the test conducted 11/17-18/2020

EPA Region 6 inspectors Prince Nfodzo and Aimee Boss conducted an inspection closing conference at Nucor Steel Louisiana LLC DRI Facility at 12:15 pm on March 23, 2022. During the closing conference, I presented preliminary findings of the inspection and reviewed AOC #s 1 – 3, which were noted during the inspection. I informed the company representatives present at the closing conference of the procedures that EPA will follow the field inspection, and that the inspection report will be made public on EPA’s website. AOC #s 4-9 were determined after the conclusion of the inspection and were not identified or discussed during the closing conference. The sign-in sheets for the opening and closing conferences are included as **Appendix 2**.

#### **Section IV – FOLLOW UP**

After the EPA inspection team exited the Facility on March 23, 2022, Nucor uploaded all the information requested during the inspection to an EPA shared OneDrive folder by March 25, 2022. On April 5, 2022, I requested information regarding Process Heater NO<sub>x</sub> emissions and CEMS downtime, and had a follow-up call with Nucor representatives to discuss the data provided. The additional information regarding NO<sub>x</sub> emissions and CEMS downtime was uploaded to the shared folder on April 8, 2022.

**Section V – LIST OF APPENDICES**

Appendix 1 – Photo Log – 3 photos taken 3/22/2022

Appendix 2 – Opening and closing conference sign-in sheets

Appendix 3 – Facility and Process Description

Appendix 4 – Daily Visible Emissions and Differential Pressure Monitoring

Appendix 5 – Roadway watering log and roadway status information

*There was no video recorded during the inspection.*

## Appendix 1

### Photograph Log



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

## Photograph Log

Photo No. 1

|                                                |                         |                  |
|------------------------------------------------|-------------------------|------------------|
| Location: Nucor Steel Louisiana - DRI Facility |                         |                  |
| City: Convent                                  | County/Parish: St James | State: Louisiana |



Photo File Name: DSCN0770.JPG  
Date of Photo: March 22, 2022  
Time of Photo: 12:42 pm  
Photographer: Aimee Boss  
Description: Process Heater NOx CEMS



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

## Photograph Log

Photo No. 2

|                                                |                         |                  |
|------------------------------------------------|-------------------------|------------------|
| Location: Nucor Steel Louisiana - DRI Facility |                         |                  |
| City: Convent                                  | County/Parish: St James | State: Louisiana |



Photo File Name: DSCN0771.JPG  
Date of Photo: March 22, 2022  
Time of Photo: 12:55 pm  
Photographer: Aimee Boss  
Description: Emergency Generator EQT 0122 Engine Information



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

## Photograph Log

Photo No. 3

|                                                |                         |                  |
|------------------------------------------------|-------------------------|------------------|
| Location: Nucor Steel Louisiana - DRI Facility |                         |                  |
| City: Convent                                  | County/Parish: St James | State: Louisiana |



Photo File Name: DSCN0773.JPG  
Date of Photo: March 22, 2022  
Time of Photo: 12:57 pm  
Photographer: Aimee Boss  
Description: Emergency Generator EQT 0122 Non-resettable hour meter

## Appendix 2

Opening and closing conference sign-in sheets

## Opening/Pre-Inspection Meeting

Commence opening/pre-inspection meeting 3/22/22 Time: 9:00 am

| Name              | Title                     | Representing   | Telephone No.  |
|-------------------|---------------------------|----------------|----------------|
| Prince Nfodzo     | Environmental Engineer    | EPA Region 6   | (214) 665-7491 |
| Aimee Boss        | Physical Scientist        | EPA Region 6   | (214) 665-7397 |
| Cory Lormand      | Environmental Scientist   | LDED - CRO     | (225) 219-3040 |
| Sean Kelby        | Environmental Scientist   | LDEG - CRO     | 478-347-6879   |
| Marshall Crawford | Environmental Manager     | Nucor Steel LA | 979-525-5472   |
| Kelly Phillips    | Environmental Engineer    | NUCOR Steel LA | 225-331-4063   |
| Calvin Hart       | GM                        | NUCOR          | 225-264-1499   |
| LANE GRANT        | Manager                   | Nucor          | 225-331-4005   |
| Beth Brown        | Environmental Coordinator | NUCOR          | 225-331-4041   |
| Erica Coruzzo     | Environmental Engineer    | NUCOR          | (225)-331-4000 |
|                   |                           |                |                |

Conclude opening/pre-inspection meeting 3/22/22 Time: 9:40 amInitials / Date: PN / 3/22/22

## Exit interview / Out-briefing Meeting

Commenced meeting March 23, 2022 Time: 12:15pm

| Name              | Title                     | Representing | Telephone No.  |
|-------------------|---------------------------|--------------|----------------|
| Prince Nfodzo     | Environmental Engineer    | EPA Region 6 | (214) 665-7491 |
| Aimee Boss        | Physical Scientist        | EPA Region 6 | (214) 665-7397 |
| Cory Lormand      | Environmental Scientist   | LDEQ-CRO     | (225) 219-3040 |
| Sean Kelley       | Environmental Scientist   | LDEQ-CRO     | (225) 219-3340 |
| Adam Broussard    | Environmental Scientist   | LDEQ-CRO     | 225-219-3031   |
| Beth Brown        | Environmental Coordinator | Nucor        | 225-331-4041   |
| Marshall Crawford | Environmental Manager     | Nucor        | 979-525-5472   |
| Alvin Hart        | BM                        | NUCOR        | 225-264-1459   |
| LAMAR GRANT       | Manager                   | NUCOR        | 225-331-4005   |
| Erica Caruso      | Environmental Engineer    | NUCOR        | 225-331-4006   |
|                   |                           |              |                |
|                   |                           |              |                |

Conclude meeting March 23, 2022 Time: 12:30Initials / Date: PN / 3/23/22

## Appendix 3

### Facility and Process Description

**AIR PERMIT BRIEFING SHEET**  
**AIR PERMITS DIVISION**  
**LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY**

**Direct Reduced Iron Facility**  
**Agency Interest No.: 157847**  
**Nucor Steel Louisiana, LLC**  
**Convent, St. James Parish, Louisiana**

**I. Background**

Nucor Steel Louisiana, LLC (Nucor) owns and operates the Direct Reduced Iron (DRI) Facility in Convent, Louisiana, under permits 3086-V8 (dated January 30, 2020) and PSD-LA-751(M3) (dated June 13, 2019).

**II. Origin**

A permit application dated April 27, 2020, was submitted requesting a permit modification.

**III. Description**

The DRI process reduces the iron oxide content of iron ore pellets into iron metal through direct contact with a reducing gas. The effectiveness of this reduction process is called metallization, and the process equipment is designed to achieve a metallization rate of at least 92% of the oxides within the ore. The reduction takes place in a countercurrent vertical shaft furnace, where reducing gas passes up through iron oxide pellets which feed through the furnace by gravity. The major elements of the DRI process include the following: (1) iron oxide preparation; (2) reducing gas preparation; (3) DRI reactor shaft furnace; (4) spent reducing gas preparation for reuse; (5) DRI product handling; and (6) ancillary operations, including two package boilers, two cooling towers, and a flare for emergency situations.

Iron Oxide Preparation

Iron oxide pellets are brought to the site by ship. The iron oxide pellets are unloaded onto a conveying system and transferred to storage piles. From the storage piles, the iron oxide pellets are screened and coated with a cement mixture in preparation for charging to the DRI reactor furnace. Emissions include particulate matter from the iron oxide screening, conveying, and coating operations. Any excess iron oxide fines are transferred to storage and sold to customers.

Reducing Gas Preparation

Reducing gas requires preparation prior to introduction into the DRI reactor shaft furnace, and much of the reactor furnace off-gas is reused in the process. Reducing gas is generated initially from natural gas, which is heated by the process heater to an elevated temperature. At this elevated temperature, and in the presence of iron as a catalyst, the natural gas dissociates into a reducing gas rich in carbon monoxide and hydrogen, which are the primary reductants for the process:

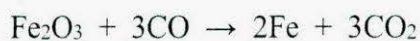


**AIR PERMIT BRIEFING SHEET**  
**AIR PERMITS DIVISION**  
**LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY**

**Direct Reduced Iron Facility**  
**Agency Interest No.: 157847**  
**Nucor Steel Louisiana, LLC**  
**Convent, St. James Parish, Louisiana**

DRI Reactor Shaft Furnace

The DRI reactor shaft furnace is a countercurrent vertical shaft furnace, where reducing gas is passed up through the iron oxide pellets which are charged into the shaft furnace. The carbon monoxide and hydrogen of the reducing gas scavenge oxygen from the iron oxides from the iron oxide pellet charge in the shaft furnace, reducing the oxygenation state of the ores. The resulting products of the reduction process are pure iron, carbon dioxide, and water:



The rate at which these reactions occur determines the residence time needed to metallize the iron oxide pellets into DRI product, which typically takes several hours. Once the metallization process is complete, the metalized DRI pellets are cooled and discharged to the cold product pressurized discharge bins.

Spent reducing gas preparation for reuse

Once the process has initiated, spent reducing gas exits the top of the DRI reactor shaft furnace and is cooled and passed through a scrubber to remove entrained dust and excess moisture. A portion of this gas is then prepared for reuse as reducing gas by removing acid gases such as CO<sub>2</sub>, H<sub>2</sub>S, and other reduced sulfur compounds. The reducing gas is passed through an amine absorber which strips it of the acid gas components. The cleaned reducing gas may then be adjusted with sulfur (reformer-less process) and/or natural gas prior to preheating and reforming in preparation for reintroduction into the DRI reactor shaft furnace. Oxygen injection may occur just prior to the shaft furnace to further enhance the reaction.

The acid gases removed by the amine absorption system are passed through an iron-based catalyst bed to capture sulfur compounds. After passing through the catalyst, the resulting off-gas is nearly pure carbon dioxide. The captured carbon dioxide may be pipelined and sold to offsite customers. Sulfur is captured by a proprietary sulfur recovery system and is sold as a product or disposed, depending on quality and market conditions.

The remaining top gas leaving the furnace, after the removal of acid gases, contains unreacted carbon monoxide and hydrogen. This gas is routed to the process gas heater for use as fuel.

DRI Product Handling

Any excess DRI fines are sent to the briquetting plant and then conveyed to the DRI product silos where they are blended with DRI pellets and sold to customers. Product DRI is conveyed from the storage silos back to the docks, where it is loaded onto barges for shipment to Nucor's electric arc furnace mills and/or outside customers.

Ancillary Operations

Additional sources serving the DRI facility include two package boilers, two cooling towers, plant roads, and several dust collection points controlled by baghouse filters.

## Appendix 4

### Daily Visible Emissions and Differential Pressure Monitoring

| TEST_DATE           | 'VE DC-11 - InService' | 'VE DC-11 - VE' | 'VE DC-12 - DP' | 'VE DC-12 - InService' | 'VE DC-12 - VE' | 'VE DC-13 - DP' | 'VE DC-13 - InService' |
|---------------------|------------------------|-----------------|-----------------|------------------------|-----------------|-----------------|------------------------|
| 04/17/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 04/18/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 04/19/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 04/20/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 04/21/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 04/22/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 04/23/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 04/24/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 04/25/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 04/26/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 04/27/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 04/28/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 04/29/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 04/30/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 05/01/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 05/02/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 05/03/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 05/04/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 05/05/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 05/06/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 05/07/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 05/08/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 05/09/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 05/10/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 05/11/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 05/12/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 05/13/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 05/14/2021 00:00:00 | 0                      | 1               | 1               | 0                      | 1               | 1               | 1                      |
| 05/15/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |
| 05/16/2021 00:00:00 | 1                      | 0               | 1               | 1                      | 0               | 1               | 1                      |

## Daily Visible Emissions Monitoring Record - Nucor Steel Louisiana

Reference FOP 3086-V9

[1] If applicable, attach a completed Method 9 form and schematic. If there are no VE's present, leave Method 9 result's column blank.

Observer(s):

Gregory Oliphant

Check the status which applies:

Normal Operations ☒Outage / Shutdown ☐All DC's are OOS ☐

\* If all DC's are OOS is checked then sign, date, &amp; submit form.

Date: 11/7/2021

| Emission Point No.                                                                                                                                   | Source Name                           | Time | Equipment In Service? | Visible Emissions? | Method 9 <sup>[1]</sup> completed? | Method 9 <sup>[1]</sup> attached? | Method 9 <sup>[1]</sup> Result | DP Reading | Opacity |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------|-----------------------|--------------------|------------------------------------|-----------------------------------|--------------------------------|------------|---------|
|                                                                                                                                                      |                                       |      | Y/N                   | Y/N                | Y/N                                | Y/N                               |                                |            |         |
| Specific Requirement No. 20 (Opacity) Specific Requirement No. 27 (VEO) - Baghouses/Dust Filters - Visible Emissions of Filter Vents Monitored Daily |                                       |      |                       |                    |                                    |                                   |                                |            |         |
| Specific Requirement No. 25 - Differential Pressure Monitored Daily                                                                                  |                                       |      |                       |                    |                                    |                                   |                                |            |         |
| EQT0093                                                                                                                                              | DC-1 Transfer Tower 1 East            | 0739 | ✓                     | N                  |                                    |                                   |                                | 3.27       | ≤20%    |
| EQT0094                                                                                                                                              | DC-2 Transfer Tower 2 South           | 0722 | ✓                     | N                  |                                    |                                   |                                | 3.40       | ≤20%    |
| EQT0095                                                                                                                                              | DC-3 GTU Tower R3-C01                 | 0724 | ✓                     | N                  |                                    |                                   |                                | 2.04       | ≤20%    |
| EQT0100                                                                                                                                              | DC-4 Iron Ore Screen Tower East       | 0755 | ✓                     | N                  |                                    |                                   |                                | 3.77       | ≤20%    |
| EQT0101                                                                                                                                              | DC-5 Iron Ore Screen Tower Reject Bin | 0855 | ✓                     | N                  |                                    |                                   |                                | 2.25       | ≤20%    |
| EQT0102                                                                                                                                              | DC-6 Iron Ore Feed Bin Tower          | 0803 | ✓                     | N                  |                                    |                                   |                                | 4.78       | ≤20%    |
| EQT0103                                                                                                                                              | DC-7 Coating/Transfer Station         | 0804 | ✓                     | N                  |                                    |                                   |                                | 3.81       | ≤20%    |
| EQT0104                                                                                                                                              | DC-8 Iron Ore Surge Bin Tower         | 0715 | ✓                     | N                  |                                    |                                   |                                | 3.96       | ≤20%    |
| EQT0105                                                                                                                                              | DC-11 DRI Buffer Bin Emergency Bunker | 0712 | ✓                     | N                  |                                    |                                   |                                | 2.94       | ≤20%    |
| EQT0106                                                                                                                                              | DC-12 Cold DRI Screening Station      | 0735 | ✓                     | N                  |                                    |                                   |                                | 3.99       | ≤20%    |
| EQT0107                                                                                                                                              | DC-13 Cold DRI Fines/Dust Silo        | 0742 | ✓                     | N                  |                                    |                                   |                                | 3.86       | ≤20%    |
| EQT0108                                                                                                                                              | DC-14 DRI Product Silos               | 0702 | ✓                     | N                  |                                    |                                   |                                | 5.29       | ≤20%    |
| EQT0109                                                                                                                                              | DC-15A DRI Product Screen House North | 0708 | ✓                     | N                  |                                    |                                   |                                | 5.91       | ≤20%    |
| EQT0110                                                                                                                                              | DC-15B DRI Product Screen House South | 0710 | ✓                     | N                  |                                    |                                   |                                | 5.74       | ≤20%    |
| EQT0111                                                                                                                                              | DC-16 Cold DRI Fines Bin              | 0715 | ✓                     | N                  |                                    |                                   |                                | 4.35       | ≤20%    |

Comments:

Date:

11/7/21

| Emission Point No. | Source Name | Time | Equipment In Service? | Visible Emissions? | Method 9 <sup>[1]</sup> completed? | Method 9 <sup>[1]</sup> attached? | Method 9 <sup>[1]</sup> Result | DP Reading | Opacity |
|--------------------|-------------|------|-----------------------|--------------------|------------------------------------|-----------------------------------|--------------------------------|------------|---------|
|                    |             |      | Y/N                   | Y/N                | Y/N                                | Y/N                               |                                |            |         |

Specific Requirement No. 20 (Opacity) Specific Requirement No. 27 (VEO) - Baghouses/Dust Filters - Visible Emissions of Filter Vents Monitored Daily (continued)

Specific Requirement No. 25 - Differential Pressure Monitored Daily (continued)

|         |                                                        |      |   |  |  |  |  |                      |      |
|---------|--------------------------------------------------------|------|---|--|--|--|--|----------------------|------|
| EQT0112 | DC-17 DRI Metering Bin                                 | 0717 | Y |  |  |  |  | <del>5.29</del> 3.49 | ≤20% |
| EQT0113 | DC-18 DRI Product Loadout                              | 0750 | Y |  |  |  |  | <del>5.29</del> 1.17 | ≤20% |
| EQT0078 | DC-19 Briquetting Mill                                 | 0744 | Y |  |  |  |  | <del>5.29</del> 3.36 | ≤20% |
| EQT0121 | DC-20 Furnace Emergency Bunker Baghouse                | 0710 | Y |  |  |  |  | 41-35                | ≤20% |
| EQT0123 | MDC-01 Mobile Dust Collector<br>*** Note the run hours | 0700 | N |  |  |  |  | <del>3.50</del> 0    | ≤20% |
| EQT0148 | DC-21 South Side of R7 Dry Screen Building             | 0818 | Y |  |  |  |  | <del>3.50</del> 3.2  | ≤20% |
| EQT0149 | DC-22 West Side of R8 Wet/Dry Screen Building          | 0850 | Y |  |  |  |  | 2.4                  | ≤20% |
| EQT0150 | DC-23 Top Cone of Day Bin 1                            | 0831 | Y |  |  |  |  | 1.8                  | ≤20% |

Specific Requirement No. 87 (Opacity) and No. 92 (VEO) - New Baghouses - Visible Emissions of Filter Vents Monitored Daily

|         |                                |      |   |  |  |  |  |     |      |
|---------|--------------------------------|------|---|--|--|--|--|-----|------|
| EQT0172 | DC-24 Top Cone of Day Bin 2    | 0835 | Y |  |  |  |  | 1.7 | ≤20% |
| EQT0173 | DC-25 Top Cone of Day Bin 3    | 0834 | Y |  |  |  |  | 3.1 | ≤20% |
| EQT0174 | DC-26 Top Cone of Day Bin 4    | 0832 | Y |  |  |  |  | 3.3 | ≤20% |
| EQT0175 | DC-27 Head Chute of R7-C06     | 0838 | Y |  |  |  |  | 3.2 | ≤20% |
| EQT0176 | DC-28 Weigh Belt Feeder Pair 1 | 6.0  | Y |  |  |  |  | 6.0 | ≤20% |
| EQT0177 | DC-29 Weigh Belt Feeder Pair 2 | 3.0  | Y |  |  |  |  | 3.0 | ≤20% |

Specific Requirement No. 75 (Opacity) and No. 78 and 81 (VEO) - Hot Flares - Visible Emissions Monitored Daily (Once Every Two Hours During a Process Upset Vent)

|                                                                                                                                                                        |                     |     |  |  |  |  |  |  |         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----|--|--|--|--|--|--|---------|
| EQT0071                                                                                                                                                                | HF-1 Hot Flare No.1 | n/a |  |  |  |  |  |  |         |
| ** ≤20% except for a combined total of 6 hours in any 10 consecutive day period for burning in connection with pressure valve releases for control over process upsets |                     |     |  |  |  |  |  |  | ** ≤20% |

Comments:

## Appendix 5

### Roadway watering log and roadway status information







## Nucor Steel Louisiana LLC

## Road Watering

| RD # | Roads/Areas              | Decommissioned | Notes                                   |
|------|--------------------------|----------------|-----------------------------------------|
| 1    | Plant Road / Ground Area | N/A            |                                         |
| 2    | Plant Road / Ground Area | N/A            |                                         |
| 3    | Plant Road               | N/A            |                                         |
| 4    | Plant Road               | N/A            |                                         |
| 5    | Plant Road               | N/A            |                                         |
| 6    | Plant Road               | N/A            |                                         |
| 7    | Plant Road               | N/A            |                                         |
| 8    | Plant Road               | N/A            |                                         |
| 9    | Non Road                 | 5/7/2021       |                                         |
| 10   | Non Road                 | 3/10/2021      |                                         |
| 11   | Non Road/ Non Accessible | 7/29/2020      |                                         |
| 12   | Plant Road               | 10/1/2020      | paused road watering due to contruction |
| 13   | Plant Road -Low traffic  | N/A            |                                         |
| 14   | Plant Road -Low traffic  | N/A            |                                         |
| 15   | Plant Road -Low traffic  | N/A            |                                         |
| 16   | Contractor Parking       | N/A            |                                         |
| 17   | Plant Road / Ground Area | N/A            |                                         |
| A    | Public Road              | 8/6/2021       | public/shared road                      |
| B    | Plant Road               | N/A            |                                         |
| C    | Plant Road               | N/A            |                                         |
| D    | Plant Road               | N/A            |                                         |
| E    | Plant Road               | N/A            |                                         |
| F    | Plant Road               | N/A            |                                         |
| G    | Plant Road               | N/A            |                                         |
| H    | Plant Road               | N/A            |                                         |