

Bold = new language

~~Strikeout~~ = existing language deleted in this rulemaking

TITLE 326 AIR POLLUTION CONTROL DIVISION

DRAFT RULE

LSA Document #20-449

DIGEST

Amends 326 IAC 7-4-14, 326 IAC 7-4.1-10, and 326 IAC 7-4.1-11, concerning revisions to ArcelorMittal's sulfur dioxide (SO₂) emission limits for three locations in Porter and Lake counties, and the removal of two emissions units at the Northern Indiana Public Service Company Bailly Station (NIPSCO) in Porter County that have been retired and taken out of NIPSCO's Title V permit. Effective 30 days after filing with the Publisher.

HISTORY

Findings and Determination of the Commissioner Pursuant to IC 13-14-9-8: September 2, 2020, Indiana Register (DIN: 20200902-IR-326200449FDA).

Notice of Public Hearing: September 2, 2020, Indiana Register (DIN: 20200902-IR-326200449PHA).

Date of Public Hearing: November 18, 2020.

326 IAC 7-4-14

326 IAC 7-4.1-10

326 IAC 7-4.1-11

DRAFT RULE

SECTION 1. 326 IAC 7-4-14 IS AMENDED TO READ AS FOLLOWS:

326 IAC 7-4-14 Porter County sulfur dioxide emission limitations

Authority: IC 13-14-8; IC 13-17

Affected: IC 13-15

Sec. 14. The following sources and ~~facilities~~ **emissions units** located in Porter County shall comply with the sulfur dioxide emission limitations in pounds per million Btu (lbs/MMBtu) and pounds per hour (lbs/hr), unless otherwise specified, and other requirements:

(1) ArcelorMittal Burns Harbor LLC, **Source Identification Number 127-00001**, shall comply with the following:

- (A) The following ~~facilities shall~~ **emissions units must** burn natural gas only:
- (i) BOF Shop FM Boiler.
 - (ii) 160 inch Plate Mill Continuous Hardening and Annealing Heat Treatment Furnace.
 - (iii) 160 inch Plate Mill Boilers No. 2 and 4.

- (iv) Batch Annealing Furnaces (24).
- (v) Continuous Heat Treat Line – Preheat, Heating and Soaking, and Reheat.

(B) The following facilities shall **emissions units must** comply with the sulfur dioxide emission limitations and other requirements:

<u>Facility Description</u>	<u>Emission Limitations</u>	
	<u>lbs/MMBtu</u>	<u>lbs/hr</u>
(i) Blast Furnace C Stoves	0.83	545
(ii) Blast Furnace D Stoves	0.83	545
(iii) Sinter Plant Windbox	1.0 pound per ton process material	400
(iv) No. 1 Coke Battery Underfire	1.73	803
(v) No. 2 Coke Battery Underfire	1.96	911
(vi) Slab Mill Soaking Pits:-		
(AA) Not more than nine (9) of thirty two (32) horizontally discharged soaking pits may be fired on coke oven gas at the same time with total sulfur dioxide emissions not to exceed four hundred eighty two (482) pounds per hour.		
(BB) The remaining twenty three (23) of thirty two (32) horizontally discharged soaking pits may burn blast furnace or natural gas, or both, with total sulfur dioxide emissions not to exceed twenty four (24) pounds per hour.		
(CC) The four (4) vertically discharged soaking pits may burn blast furnace or natural gas, or both, with total sulfur dioxide emissions not to exceed four (4) pounds per hour.		
(vii) (vi) 160 inch Plate Mill Continuous Reheat Furnace No. 1 and Boiler No. 1	1.96	299 29.9
(viii) (vii) 160 inch Plate Mill Continuous Reheat Furnace No. 2 and Boiler No. 3	1.96	299
(ix) (viii) 80 inch Hot Strip Mill Furnace No. 1, 2, and 3	1.96	79 each
(x) (ix) 110 inch Plate Mill Furnaces No. 1 and 2	1.96	441 44.1
(xi) (x) 110 inch Plate Mill Normalizing Furnace	1.07	88
(xii) (xi) 160 inch Plate Mill I & O Furnaces No. 4 and 5	1.96	274 27.4
(xiii) (xii) 160 inch Plate Mill I & O Furnaces No. 6 and 7	1.96	274 27.4
(xiv) 160 inch Plate Mill I & O Furnace No. 8	1.96	176
(xv) (xiii) Power Station Boiler No. 7	0.8	520
(xvi) (xiv) Power Station Boilers No. 8, 9, 10, 11, and 12	1.45	2,798 2,378
(xv) Blast Furnace Gas Flare	0.50	N/A

(C) As an alternative to the sulfur dioxide emission limitations specified in clause (B), ArcelorMittal Burns Harbor LLC shall comply with the sulfur dioxide emission limitations and other requirements as follows:

Facility Description	Emission Limitations	
	lbs/MMBtu	lbs/hr
(i) Blast Furnace C Stoves	0.75	498
(ii) Blast Furnace D Stoves	0.75	498
(iii) Sinter Plant Windbox	1.0 pound per ton process-material	400
(iv) No. 1 Coke Battery Underfire	1.57	730
(v) No. 2 Coke Battery Underfire	1.78	828
(vi) Slab Mill Soaking Pits:-		
(AA) Not more than six (6) of thirty-two (32) horizontally discharged soaking pits may be fired on coke oven gas at the same time with total sulfur dioxide emissions not to exceed two hundred ninety-two (292) pounds per hour.		
(BB) The remaining twenty-six (26) of thirty-two (32) horizontally discharged soaking pits may burn blast furnace or natural gas, or both, with total sulfur dioxide emissions not to exceed twenty-seven (27) pounds per hour.		
(CC) The four (4) vertically discharged soaking pits may burn blast furnace or natural gas, or both, with total sulfur dioxide emissions not to exceed four (4) pounds per hour.		
(vii) 160 inch Plate Mill Continuous Reheat Furnace No. 1 and Boiler No. 1	1.78	293
(viii) 160 inch Plate Mill Continuous Reheat Furnace No. 2 and Boiler No. 3	1.78	293
(ix) 80 inch Hot Strip Mill Furnace No. 1, 2, and 3	1.78	483 each
(x) 110 inch Plate Mill Furnaces No. 1 and 2	1.78	401
(xi) 110 inch Plate Mill Normalizing Furnace	1.07	88
(xii) 160 inch Plate Mill I & O Furnaces No. 4 and 5	1.78	249
If 160 inch Plate Mill I & O Furnaces No. 6 or 7, or both, are in operation on a fuel other than natural gas, Furnaces No. 4 and 5 shall not operate or shall burn natural gas only.		
(xiii) 160 inch Plate Mill I & O Furnaces No. 6 and 7	1.78	249
If 160 inch Plate Mill I & O Furnaces No. 4 or 5, or both, are in operation on a fuel other than natural gas, Furnaces No. 6 and 7 shall not operate or shall burn natural gas only.		
(xiv) 160 inch Plate Mill I & O Furnace No. 8	1.78	160
(xv) Power Station Boilers No. 7	0.8	520
(xvi) Power Station Boilers No. 8, 9, 10, 11, and 12	1.45 total	2,500 total
(xvii) ArcelorMittal Burns Harbor LLC shall notify the department at least twenty-four (24) hours prior to reliance on the alternative set of limits specified in items (i) through (xvi). ArcelorMittal Burns Harbor LLC shall		

~~maintain records of fuel type and operational status of facilities listed in items (xii) and (xiii) and shall make the records available to the department upon request.~~

~~(xviii) For the purposes of 326 IAC 7-2-1(c)(2), compliance shall be determined based on separate calendar month averages for the set of requirements specified in this clause and for the set of requirements specified in clause (B).~~

~~(D) (C) Coke oven gas usage at facilities **emissions units** other than the No. 1 and 2 Coke Battery Underfire Stacks shall be~~ **are** ~~restricted to not more than seventy-five (75) million cubic feet per day. Total sulfur dioxide emissions from the facilities listed in clause (B)(i) through (B)(iii), (B)(vi)(AA) through (B)(vi)(BB), (B)(vii) through (B)(x), (B)(vi) through (B)(ix), and (B)(xii) through (B)(xvi) shall (B)(xi) through (B)(xiv) must not exceed four thousand four hundred twenty-nine (4,429) pounds per hour. During periods in which the limits contained in clause (C) are in effect, coke oven gas usage at facilities other than the No. 1 and 2 Coke Battery Underfire Stacks shall be restricted to not more than seventy (70) million cubic feet per day, and total sulfur dioxide emissions from the facilities listed in clause (C)(i) through (C)(iii), (C)(vi)(AA) through (C)(vi)(BB), (C)(vii) through (C)(x), and (C)(xii) through (C)(xvi) shall not exceed four thousand six hundred thirty (4,630) pounds per hour.~~

~~(E) (D) ArcelorMittal Burns Harbor LLC shall achieve compliance **comply** with the requirements specified in clause (B) or (C) prior to December 31, 1988. Thereafter, ArcelorMittal Burns Harbor LLC shall submit a report to the department within thirty (30) days following the end of each calendar quarter containing the following information:~~

~~(i) Records of the total coke oven gas, blast furnace gas, fuel oil, and natural gas usage for each day at each **facility emissions unit** listed in clauses **clause (B) and (C).**~~

~~(ii) Records of the~~

~~(AA) average sulfur content and heating value as determined per the procedures specified in clause (F)(E) for each fuel type used during the calendar quarter. and~~

~~(BB) maximum number of slab mill soaking pits burning coke oven gas at any given time during each day.~~

~~(iii) The calculated sulfur dioxide emission rate in the applicable emission units (pounds per hour, pounds per million Btu, or pounds per ton) for each facility for each day and the average sulfur dioxide emissions from the facilities listed in clause (C)(i) through (C)(iii), (C)(vi)(AA) through (C)(vi)(BB), (C)(vii) through (C)(x), and (C)(xii) through (C)(xvi) for each day in pounds per hour during the calendar quarter.~~

~~(F) (E) **Except for sampling and analysis of blast furnace gas that is subject to the protocol in clause (G),** ArcelorMittal Burns Harbor LLC shall submit a sampling and analysis protocol to the department by December 31, 1988. The protocol shall **must:**~~

- (i) contain a description of planned procedures for:
 - (AA) sampling of sulfur-bearing fuels and materials;
 - (BB) analysis of the sulfur content; and
 - (CC) any planned direct measurement of sulfur dioxide emissions vented to the atmosphere; and
- (ii) specify the frequency of sampling, analysis, and measurement for each:
 - (AA) fuel and material; and
 - (BB) **facility emissions unit**.

The department shall incorporate the protocol into the source's operation permit per procedures specified in 326 IAC 2. The department may revise the protocol as necessary to establish acceptable sampling, analysis, and measurements procedures and frequency. The department may also require that a source conduct a stack test at any **facility emissions unit** listed in this subdivision within thirty (30) days of written notification by the department.

(F) The following emissions units have been permanently shut down:

- (i) The following Slab Mill Soaking Pits:**
 - (AA) Set of nine (9) Coke Oven Gas-Fueled, Horizontally-Discharged Slab Mill Soaking Pits.**
 - (BB) Set of twenty-three (23) Blast Furnace and Natural Gas-Fired, Horizontally-Discharged Slab Mill Soaking Pits.**
 - (CC) Set of four (4) Blast Furnace and Natural Gas-Fired, Vertically-Discharged Slab Mill Soaking Pits.**
- (ii) 160 inch Plate Mill I & O Furnace No. 8.**

(G) ArcelorMittal Burns Harbor LLC shall comply with the following blast furnace gas testing protocol:

- (i) Conduct blast furnace gas (BFG) fuel sampling at a representative location downstream of the gas cleaning system of Blast Furnaces C and D.**
- (ii) Have the fuel sample analyzed for the following:**
 - (AA) Btu content in accordance with ASTM D 3588.**
 - (BB) Fuel composition analysis in accordance with ASTM D 1946.**
 - (CC) Fuel sulfur analysis in accordance with ASTM D 6228.**
- (iii) Conduct BFG sampling:**
 - (AA) on a quarterly basis; and**
 - (BB) during representative performance of each blast furnace operating during the quarter (i.e., performance based on normal operating conditions).**
- (iv) Determine compliance by the average of at least three (3) one (1) hour integrated samples during the quarter.**
- (v) Fuel samples must either be:**
 - (AA) collected in silonite-coated evacuated cylinders; or**
 - (BB) analyzed within twelve (12) hours of being collected.**

(vi) The following calculation methodology will be utilized:

$$E_{lb/mmbtu} = C_{gr/dscf} \left(\frac{1 \text{ lb } S}{7000 \text{ gr}} \right) \left(\frac{1 \text{ lb-mol } S}{32 \text{ lb } S} \right) \left(\frac{1 \text{ lb-mol } SO_2}{1 \text{ lb-mol } S} \right) \left(\frac{64 \text{ lb } SO_2}{1 \text{ lb-mol } SO_2} \right) F_d$$

Where:

$E_{lb/mmbtu}$ = The emission rate in units of the standard in pounds per one million (1,000,000) British thermal units (lb/MMBtu).

$C_{gr/dscf}$ = The sulfur concentration, as measured by ASTM D 6228 in units of grains per dry standard cubic feet.

$mol S$ = Molar mass of sulfur.

$mol SO_2$ = Molar mass of sulfur dioxide.

F_d = Volume of combustion components per unit of heat content in units of standard cubic feet per one million (1,000,000) British thermal units (scf/MMBtu).

$$F_d = 10^6 \frac{[3.64(\%H) + 1.53(\%C) + 0.57(\%S) + 0.14(\%N) - 0.46(\%O)]}{GHV}$$

Where:

F_d = Volume of combustion components per unit of heat content in units of scf/mmBTU.

$\%H$ = Concentration of hydrogen from ultimate analysis of fuel, weight percent.

$\%C$ = Concentration of carbon from ultimate analysis of fuel, weight percent.

$\%S$ = Sulfur content of as-fired fuel, dry basis, weight percent.

$\%N$ = Concentration of nitrogen from ultimate analysis of fuel, weight percent.

$\%O$ = Concentration of oxygen from ultimate analysis of fuel, weight percent.

GHV = Gross calorific value of the fuel determined by ASTM D 3588, Btu/lb.

The equation presumes that sulfur concentration will be measured in gr/dscf. If sulfur is measured in parts per million (ppm), the equation will require an adjustment using standard temperature and pressure (STP) defined as sixty-eight (68) degrees Fahrenheit and one (1) standard atmosphere (atm).

(vii) ArcelorMittal Burns Harbor may request the department and U.S. EPA approval of an alternative sampling or analysis methodology or alternative sampling frequency that is of equivalent accuracy as those specified in this protocol. If approved by the department and U.S. EPA, ArcelorMittal Burns Harbor may utilize the approved alternative methodology or alternative sampling frequency to demonstrate compliance with the applicable emission

limits in 326 IAC 7-4-14.

(2) Northern Indiana Public Service Company Bailly Station shall comply with the following:

<u>Facility Description</u>	<u>Emission Limitations</u>
(A) Boilers 7 and 8	6.0 each
Boilers 7 and 8 shall be fired with coal, fuel oil, or natural gas.	
(B) Gas Turbine 10	natural gas only

(3) Midwest Steel shall comply with the following:

<u>Facility Description</u>	<u>Emission Limitations</u>
Babcock and Wilcox Boiler 1 and Erie City Boilers No. 1, 2, and 3	1.33 each

Only two (2) of four (4) boilers may burn fuel oil with a sulfur dioxide emission rate greater than three-tenths (0.3) pounds per million Btu at the same time. Midwest Steel shall maintain records of fuel type for each boiler for each hour. The records of fuel type shall be made available to the department upon request.

(4) Air Products and Chemical shall comply with the following:

<u>Facility Description</u>	<u>Emission Limitations</u>
All boilers and the No. 3 Hydrogen Reformer	natural gas only

(Air Pollution Control Division; 326 IAC 7-4-14; filed Aug 28, 1990, 4:50 p.m.: 14 IR 78; readopted filed Jan 10, 2001, 3:20 p.m.: 24 IR 1477; errata filed Dec 12, 2002, 3:35 p.m.: 26 IR 1568; filed Sep 29, 2009, 3:00 p.m.: 20091028-IR-326070088FRA)

SECTION 2. 326 IAC 7-4.1-10 IS AMENDED TO READ AS FOLLOWS:

326 IAC 7-4.1-10 ArcelorMittal USA LLC (Indiana Harbor West) sulfur dioxide emission limitations

Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11

Affected: IC 13-15; IC 13-17

Sec. 10. (a) ~~ISG~~ **ArcelorMittal USA LLC (Indiana Harbor West)**, Source Identification Number 00318, shall comply with the sulfur dioxide emission limits in pounds per million British thermal units (MMBtu), pounds per hour, and other requirements as follows:

<u>Emissions Unit Description</u>	<u>Emission Limit</u> <u>lbs/MMBtu</u>	<u>Emission Limit</u> <u>lbs/hour</u>
(1) Utility Boilers 5, 6, 7, and 8:	0.594 each	1456.5 total
(A) Total actual heat input from fuel oil usage at all boilers combined shall must not exceed two thousand four hundred fifty-two (2,452) MMBtu per hour.		

(B) Boilers ~~shall~~ **must** be fired on fuel oil, blast furnace gas, and natural gas only.

(C) Fuel oil burned ~~shall~~ **must** not exceed one and three-tenths percent (1.3%) sulfur and one and thirty-five hundredths (1.35) pounds per MMBtu.

(D) Utility Boilers 5, 6, 7, and 8 in combination with the Ironside Energy, LLC Utility Boiler No. 9 are limited to an annual operating limit of five thousand eight hundred seventy-one and sixty-one hundredths (5,871.61) tons per year.

(2) Hot Strip Mill Slab Heat Reheat Furnaces 1, 2, and 3	1.254 each	535.1 each
(3) Sinter Plant Windbox		240
(4) (2) Blast Furnace Stoves:		
(A) No. 3 Blast Furnace Stove	0.290	127.89
(B) No. 4 Blast Furnace Stove	0.290	140.94
(5) (3) Reladling and Desulfurization Baghouse	0.057 pounds per ton feed material	30.40
(6) (4) Number 4 Blast Furnace EC Baghouse	0.18 pounds per ton feed material	69.9

(b) ISG **ArcelorMittal USA LLC (Indiana Harbor West)**, shall:

(1) maintain records of the:

- (A) total coke oven gas, blast furnace gas, fuel oil, and natural gas usage for each day at each emissions unit listed in subsection (a)(1) through ~~(a)(4)~~ **(a)(2)**; and
- (B) average sulfur content and heating value for each day for each fuel type used during the calendar quarter; and

(2) submit to the department within thirty (30) days of the end of each calendar quarter the calculated sulfur dioxide emission rate in pounds per MMBtu for each emissions unit for each day during the calendar quarter and the total fuel usage for each type at each emissions unit for each day.

(Air Pollution Control Division; 326 IAC 7-4.1-10; filed May 25, 2005, 10:50 a.m.: 28 IR 2958)

SECTION 3. 326 IAC 7-4.1-11 IS AMENDED TO READ AS FOLLOWS:

326 IAC 7-4.1-11 ArcelorMittal USA LLC (Indiana Harbor East) sulfur dioxide emission limitations

Authority: IC 13-14-8; IC 13-17-3-4; IC 13-17-3-11

Affected: IC 13-15; IC 13-17

Sec. 11. (a) ~~Ispat Inland Inc.~~ **ArcelorMittal USA LLC (Indiana Harbor East)**, Source Identification Number 00316, shall comply with the sulfur dioxide emission limits in pounds per million British thermal units (MMBtu), pounds per ton, pounds per hour, and other requirements as follows:

<u>Emissions Unit Description</u>	<u>Emission Limit lbs/MMBtu</u>	<u>Emission Limit lbs/hour</u>
(1) No. 1 Blast Furnace Stoves	0.080 total	11.92 total
(2) No. 2 Blast Furnace Stoves	0.080 total	12.4 total
(3) No. 5 and 6 Blast Furnace Stoves	0.140 each	41.02 each
(4)(1) No. 7 Blast Furnace Stoves	0.195 total	162 total
(5)(2) No. 5 Boilerhouse	0.198	265.2
(6) No. 2AC Boilers 207, 208, 209, and 210	-	15.873 total
(7) No. 2AC Boilers 211, 212, and 213	0.140 each	168.0 total
(8) No. 4AC Boilers 401, 402, 403, 404, and 405:	-	890.23 total
(A) Stack 1 (Boilers 401 and 402) and Stack 2 (Boilers 403 and 404)	1.5 per stack	
(B) Stack 3 (Boiler 405)	1.0	
(C) Sulfur dioxide emissions from Stacks 1, 2, and 3 shall be limited in accordance with the following equation in units of pounds per MMBtu: $(\text{Stack 1} + \text{Stack 2})/2 + 0.425 \times \text{Stack 3} \leq 1.6$ If any one (1) of Boilers 401 through 405 is not operating for a given calendar day, the pounds per MMBtu for Stack 3 for the purposes of the equation in this clause is twenty-four hundredths (0.24) pounds per MMBtu.		
(D) Ispat Inland Inc. shall maintain and operate sulfur dioxide continuous emission monitoring systems (CEMS) in Stacks 1, 2, and 3. CEMS data shall be used to determine compliance and to determine the sulfur dioxide emission rate in pounds per MMBtu for the report required under subsection (b)(3). The CEMS shall be operated in accordance with the procedures specified in 326 IAC 3-5, and records of hourly emissions data shall be maintained and made available to the department upon request.		
(9)(3) Lime Plant Kiln Baghouse Stacks	0.460	32.08 total
(10) Anneal 3, 4	0.000	0.000
	<u>Emission Limit</u>	<u>Emission</u>
	<u>lbs/ton</u>	<u>Limit</u>
		<u>lbs/hour</u>
(11) EAF Shop Ladle Metal Baghouse	0.125	13.90
(12)(4) Pigging Ladle Facility	0.020	4.000
(13)(5) Sinter Plant Windbox		180.000
(14)(6) No. 7 Blast Furnace Canopy West Baghouse and East Baghouse	0.220	50.400 432
		total
(15) No. 7 BF Casthouse Baghouse	0.220	50.400
(16)(7) No. 2 BOF Secondary Vent Stack	0.014	6.440
(17)(8) No. 2 BOF Charge Aisle and HMS Baghouse	0.151	69.460
(18)(9) No. 2 BOF Ladle Metal Baghouse	0.025	11.500

(19)(10) No. 4 BOF HMS Baghouse S and N	0.151 each	36.391 each
(20)(11) No. 4 BOF Secondary Vent Stack	0.001	0.535

(b) ~~Ispat Inland Inc.~~ **ArcelorMittal USA LLC (Indiana Harbor East)** shall:

(1) maintain records of the:

(A) total blast furnace gas, fuel oil, and natural gas usage for each day at each emissions unit listed in this section; and

(B) average sulfur content and heating value for each day for each fuel type used during the calendar quarter; ~~and of the operational status of 2AC Station Boilers 207, 208, 209, 210, 211, 212, and 213, 4AC Station Boilers 401, 402, 403, 404, and 405; and~~

(C) hourly sulfur dioxide emission rate in pounds of sulfur dioxide per hour calculated by dividing the total daily sulfur dioxide emissions in pounds of sulfur dioxide per day by twenty-four (24) hours; and

(D) hourly sulfur dioxide emission rate in pounds of sulfur dioxide per MMBtu or per ton for emissions units with a pounds of sulfur dioxide per MMBtu limit in this rule calculated by dividing the total daily sulfur dioxide emissions in pounds of sulfur dioxide per day by the total heat input per day in MMBtu or by the total tons per day, respectively.

(2) submit to the department within thirty (30) days of the end of each calendar quarter the calculated sulfur dioxide emission rate in pounds per million Btu and pounds per hour for each emissions unit for each day during the calendar quarter, the total fuel usage for each type of fuel used at each emissions unit for each day.

(Air Pollution Control Division; 326 IAC 7-4.1-11; filed May 25, 2005, 10:50 a.m.: 28 IR 2958)