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| **TO** | James D. Rebarchak  Regional Manager  Air Quality |

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| **FROM** | Joseph A. Schlosser, E.I.T.  Engineering Specialist  Air Quality |

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| **THROUGH** | James Beach, P.E.  Environmental Engineer Manager  New Source Review Section  Air Quality |

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| **RE** | RACT Phase II for TVOP No. 15-00010  ArcelorMittal Plate, LLC  APS No. 560025, AUTH No. 1154841  City of Coatesville  Chester County |

**RACT II Application**

On October 4, 2016, the Department of Environmental Protection (“DEP”) received a Reasonably Available Control Technology (RACT) Phase II application for nitrogen oxides (NOx) and volatile organic compounds (VOC) from ArcelorMittal Plate, LLC (“ArcelorMittal”) for sources located at their facility at 139 Modena Rd, Coatesville, PA in the City of Coatesville, in Chester County. On March 31, 2017, the Department received a revised application by email, followed by hardcopy, with revised case-by-case determination. Municipal notifications were performed as required. The application was accompanied by the appropriate fee of $750.

The RACT II regulation applies to any owner or operator of a “major NOx emitting facility” whose potential is greater than 100 tons and a “major VOC emitting facility,” whose potential is greater than 50 tons, that existed on or before July 20, 2012 (25 Pa. Code 129.96(a). Note that for Southeast region, the 25 tons per year thresholds for NOx and VOC do not apply for RACT II purposes. Due to Clean Air Act anti-backsliding provisions, the determinations made under RACT I still apply at the 25 TPY thresholds.

NOTE: The following sources referenced under RACT I (Operating Permit No. 15-0010, Condition No. 3) are no longer in service and have been decommissioned:

* Four (4) 27.3 MMBtu/hr heat input Brandy BH-B&W Boilers (TVOP Source ID 033)
* 1.5 MMBtu/hr Propane Vaporizer (TVOP Source ID 044)
* Electric Arc Furnace C (TVOP Source ID 103)
* Batch Heat Treating Furnace Source No. 7 (TVOP Source ID 136, Furnace #1)
* Batch Heat Treating Furnace Source No. 15 (TVOP Source ID 136, Furnace #9)
* 90 MMBtu/hr heat input Drever Furnace (TVOP Source ID 145)
* Eight (8) 15 MMBtu/hr Soaking Pits (TVOP Source ID 151)
* Zip Line Operation

**Case-by-case RACT for NOx and/or VOC**

Tables 1a, 1b, and 1c on the following pages show sources that are subject to case-by-case RACT for NOx and/or VOC, as per 25 Pa. Code § 129.99. These sources either do not fall into any of the categories of sources that have presumptive RACT requirements or they cannot meet presumptive RACT. Per 25 Pa. Code § 129.99, the permittee is required to propose a NOx or VOC RACT requirement or RACT emission limitation for each subject source.

All the sources in Table 1a and 1b use natural gas only as fuel. The Identification Marking operation (Source ID 250) is simply the use of spray paint throughout the facility and it does not involve any combustion of fuel. The Cont. Cast Spray Chamber (Source ID 270) is not a combustion source and does not burn fuel. None of the sources in Table 1a, 1b, or 1c have any restrictions on hours of operation. However, the EMS Boiler (Source ID 055) does have a fuel restriction that reflects less than 24/7 hours of operation. Unless stated otherwise, the PTE is based on the rated capacity, the emission factor, and 8,760 hours of operation per year.

**Table 1a**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Source ID | Source Name | Rated Capacity (MMBtu/hr) | Emission Factor (EF) | EF Source | PTE of NOx  (TPY)1 | RACT (NOx)2 |
| 055 | EMS Boiler | 62.3 | 0.147 lb/MCF | Manufacturer | 19.623 | 129.99(a)4 |
| 104 | “D” Electric Furnace | 76.5 | 0.440 lb/ton | 2011 Stack Test | 340.65 | 129.99(b) |
| 136 | BHT Furnace #2 | 36.8 | 139 lb/MMcf | AP-42 + 35% SF6 | 22.44 | 129.99(b) |
| 136 | BHT Furnace #3 | 23.0 | 139 lb/MMcf | AP-42 + 35% SF6 | 14.03 | 129.99(b) |
| 136 | BHT Furnace #4 | 35.0 | 139 lb/MMcf | AP-42 + 35% SF6 | 21.34 | 129.99(b) |
| 136 | BHT Furnace #5 | 36.8 | 139 lb/MMcf | AP-42 + 35% SF6 | 22.44 | 129.99(b) |
| 136 | BHT Furnace #6 | 24.0 | 139 lb/MMcf | AP-42 + 35% SF6 | 14.64 | 129.99(b) |
| 136 | BHT Furnace #7 | 40.0 | 139 lb/MMcf | AP-42 + 35% SF6 | 24.39 | 129.99(b) |
| 136 | BHT Furnace #8 | 45.1 | 139 lb/MMcf | AP-42 + 35% SF6 | 27.50 | 129.99(b) |
| 136 | BHT Furnace #10 | 44.2 | 139 lb/MMcf | AP-42 + 35% SF6 | 26.96 | 129.99(b) |
| 146A | 145’ NAB Furnace | 55.0 | 140 lb/MMcf | AP-42 | 33.77 | 129.99(b) |
| 146B | 200’ NAB Furnace | 128.0 | 120 lb/MMcf7 | Limit | 30.67 | 129.99(b) |
| 151 | Soaking Pits #35 - #49 | 30.0 (each) | 255 lb/MMcf | 1998 Stack Test8 | 33.52 (each) | 129.99(b) |

1Tons per year.

2§ 129.99(b) addresses requirements for a source that cannot meet presumptive RACT.

3Limit based on existing fuel restriction of 267 MMcf/yr and the emission factor.

4Source cannot meet Presumptive RACT; § 129.99(a) states what to do if a source cannot comply with presumptive RACT II.

5Limit based on existing tonnage limit of 1.55 MM tons/yr and the emission factor.

6Adjusted to account for actual BTU rating of 1,052 Btu/cf versus 1,020 used for AP-42, Table 1.4-1; SF = Safety Factor.

7Existing limit in the current TVOP.

8Stack testing was performed while three units were operating; 25% SF added.

**Table 1b**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Source ID | Source Name | Rated Capacity (MMBtu/hr) | Emission Factor (EF) | EF Source | PTE of VOC (TPY) | RACT (VOC) |
| 055 | EMS Boiler | 62.3 | 5.67 lb/MMcf | AP-421 | 0.762 | Exempt3 |
| 104 | “D” Electric Furnace | 76.5 | 0.636 lb/ton | 2005 Stack Test | 492.94 | 129.99(c)5 |
| 136 | BHT Furnace #2 | 36.8 | 5.67 lb/MMcf | AP-421 | 0.91 | Exempt |
| 136 | BHT Furnace #3 | 23.0 | 5.67 lb/MMcf | AP-421 | 0.57 | Exempt |
| 136 | BHT Furnace #4 | 35.0 | 5.67 lb/MMcf | AP-421 | 0.87 | Exempt |
| 136 | BHT Furnace #5 | 36.8 | 5.67 lb/MMcf | AP-421 | 0.91 | Exempt |
| 136 | BHT Furnace #6 | 24.0 | 5.67 lb/MMcf | AP-421 | 0.60 | Exempt |
| 136 | BHT Furnace #7 | 40.0 | 5.67 lb/MMcf | AP-421 | 0.99 | Exempt |
| 136 | BHT Furnace #8 | 45.1 | 5.67 lb/MMcf | AP-421 | 1.12 | 129.97(c)(2)6 |
| 136 | BHT Furnace #10 | 44.2 | 5.67 lb/MMcf | AP-421 | 1.10 | 129.97(c)(2) |
| 146A | 145’ NAB Furnace | 55.0 | 5.67 lb/MMcf | AP-421 | 1.37 | 129.97(c)(2) |
| 146B | 200’ NAB Furnace | 128.0 | 5.67 lb/MMcf | AP-421 | 1.45 | 129.97(c)(2) |
| 151 | Soaking Pits #35 - #49 | 30.0 (each) | 3.16 lb/MMcf | 1998 Stack Test7 | 0.42 (each) | Exempt |

1Adjusted to account for actual BTU rating of 1,052 Btu/cf versus 1,020 used for AP-42, Table 1.4-2

2Limit based on existing fuel restriction of 267 MMcf/yr and the emission factor

3Exemption based on 25 Pa. Code § 129.96(c); RACT does not apply for VOC when less than 1 TPY

4Limit based on existing tonnage limit of 1.55 MM tons/yr and the emission factor

5RACT II Case -by-Case for VOC

6Presumptice RACT applies for VOC emissions between 1 TPY and 2.7 TPY

7Stack testing was performed while three units were operating

**Table 1c**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Source ID | Source Name | Rated Capacity (tons/hr) | Emission Factor (EF) | EF Source | PTE of VOC (TPY) | RACT (VOC) |
| 250 | Identification Marking1 | N/A2 | Mass Balance | N/A | 5.40 | 129.99(c)3 |
| 270 | Cont. Cast Spray Chamber1 | 93.6 | 0.022 lb/ton | 1998 Stack Test | 9.02 | 129.99(c)3 |

1This source does not produce NOx

2This source is the use of spray cans to mark steel slabs for identification purposes; spray cans are randomly used through the plant

3RACT II Case -by-Case for VOC

Table 2a summarizes controls considered for NOx for the various case-by-case sources and the cost/ton removed of NOx. Controls include low-NOx burners (LNB), flue gas recirculation (FGR), selective non-catalyst reduction (SNCR), ultra-low NOx burners (ULNB), and selective catalytic reduction (SCR). As the cost/ton removed of NOx exceeded $3,500 for all controls that were evaluated, ArcelorMittal Plate will not be adding any new controls.

**Table 2a**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Source ID | Source Name | LNB | FGR/LNB | SNCR | ULNB | SCR |
| 055 | EMS Boiler | $21,758 | $26,091 | N/A1 | $11,236 | $68,295 |
| 104 | “D” Electric Furnace | N/A2 | N/A2 | N/A3 | N/A2 | N/A3 |
| 136 | BHT Furnace #2 | $18,751 | N/A4 | N/A1 | N/A5 | $43,164 |
| 136 | BHT Furnace #3 | $30,001 | $41,046 | N/A1 | N/A5 | $51,768 |
| 136 | BHT Furnace #4 | $19,715 | N/A4 | N/A1 | N/A5 | $44,007 |
| 136 | BHT Furnace #5 | $18,751 | N/A4 | N/A1 | N/A5 | $43,164 |
| 136 | BHT Furnace #6 | $28,751 | $39,621 | N/A1 | N/A5 | $50,920 |
| 136 | BHT Furnace #7 | $18,751 | $28,007 | N/A1 | N/A5 | $43,164 |
| 136 | BHT Furnace #8 | $15,300 | N/A4 | N/A1 | N/A5 | $39,915 |
| 136 | BHT Furnace #10 | $18,751 | $28,007 | N/A1 | N/A5 | $43.164 |
| 146A | 145’ NAB Furnace | $18,264 | $29,224 | N/A1 | $48,659 | $36,787 |
| 146B | 200’ NAB Furnace | $32,201 | $48,825 | N/A1 | $26,191 | $68,391 |
| 151 | Soaking Pits #35 - #49 (minus #41) | $10,465 | $16,712 | $12,217 | $10,556 | $25,570 |
| 151 | Soaking Pit #41 | $10,465 | $16,712 | $12,217 | $10,556 | $25,570 |

1Not technically feasible due to exhaust temperature being too low

2NOx emissions produced primarily from electric arc

3Not technically feasible due to widely variable flow rate and temperature, and high particulate matter

4NOx emissions are already low

5Ultra Low-NOx burners cannot reduce NOx beyond that of Low-NOx burners for this source type

Table 2b summarizes controls considered for VOC for the various case-by-case sources and the cost/ton removed of VOC. As the cost/ton removed of VOC exceeded $7,000 for all controls that were evaluated, ArcelorMittal Plate will not be adding any new controls.

**Table 2b**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Source ID | Source Name | RTO | Thermal Incinerator | Carbon Adsorption | Flare | Condenser |
| 104 | “D” Electric Furnace – Canopy | $27,650 | $32,4581 | $32,4581 | N/A2 | N/A2 |
| 104 | “D” Electric Furnace – Baghouse Stack | $35,428 | $37,1991 | $37,1991 | N/A2 | N/A2 |
| 250 | Identification Marking | N/A3 | N/A3 | N/A3 | N/A3 | N/A3 |
| 270 | Cont. Cast Spray Chamber | $45,089 | $44,683 | $184,275 | $17,081 | N/A2 |

1Carbon Adsorption combined with thermal incineration for the “D” Electric Furnace

2Not technically feasible; these controls require high concentrations of VOC to work and the effluent streams from these sources have very low VOC concentrations

3Emissions are spread out throughout the facility making VOC controls technically infeasible at this time

The majority of sources at the facility have never been stack tested and there is no intention by DEP to require any new stack testing, with the exception for 5-year testing for the EMS Boiler, to test for NOx emissions. The only other source that has regularly scheduled stack testing is the “D” Electric Furnace. For the two sources that will have regularly scheduled stack testing, short-term emission limits have been proposed for RACT II. However, for all the other sources that have never been tested, or where there is insufficient data to determine an appropriate short-term emission limit, it is impractical to impose a short-term limit without knowing if the limit is appropriate and without there being a reasonable method of demonstrating compliance with such limits. Table 2c reflects DEP’s determination of case-by-case RACT requirements/limitations for all the sources listed in Tables 1a, 1b, and 1c, as well as their respective methods of compliance with RACT.

**Table 2c**

|  |  |  |  |
| --- | --- | --- | --- |
| Source ID | Source Name | RACT Requirement(s) | Compliance Method(s) |
| 055 | EMS Boiler | 0.147 lb NOx/Mcf of NG  267 million cf natural gas/yr1  19.62 TPY NOx  BMP for minimizing NOx2 | 5-year Stack Testing  Monthly Recordkeeping  Monthly Recordkeeping  N/A |
| 104 | “D” Electric Furnace | 0.440 lb NOx/ton production  1.55 million tons production/yr1  340.6 TPY NOx  BMP for minimizing NOx2 | 5-year Stack Testing  Monthly Recordkeeping  Monthly Recordkeeping  N/A |
| 0.636 lb VOC/ton production  1.55 million tons production/yr1  492.9 TPY VOC  BMP for minimizing VOC2 | 5-year Stack Testing  Monthly Recordkeeping  Monthly Recordkeeping  N/A |
| 136 | BHT Furnace #2-8 &#10 | 2,495.7 million cf natural gas/yr3  173.6 TPY NOx  BMP for minimizing NOx | Monthly Recordkeeping  Monthly Recordkeeping  N/A |
| 146A | 145’ NAB Furnace | 481.8 million cf natural gas/yr1  33.7 TPY NOx1  BMP for minimizing NOx | Monthly Recordkeeping  Monthly Recordkeeping  N/A |
| 146B | 200’ NAB Furnace | 510.0 million cf natural gas/yr1  30.6 TPY NOx1  BMP for minimizing NOx | Monthly Recordkeeping  Monthly Recordkeeping  N/A |
| 151 | Soaking Pits #35 - #49 | 3,942 million cf natural gas/yr1  502.8 TPY NOx  BMP for minimizing NOx | Monthly Recordkeeping  Monthly Recordkeeping  N/A |
| 250 | Identification Marking | 5.40 TPY VOC  BMP for minimizing VOC | Monthly Recordkeeping  N/A |
| 270 | Cont. Cast Spray Chamber | 9.02 TPY VOC  820,000 tons of steel/yr  BMP for minimizing VOC | Monthly Recordkeeping  Monthly Recordkeeping  N/A |

1Existing restriction in the current Title V Operating Permit

2BMP – Best management practices, including operating according to manufacturer’s specifications.

3Fuel limit based on the rated capacity, 1,000 Btu/cf of natural gas, and 8,760 hours per year

**Presumptive RACT for NOx and/or VOC**

Table 3a and Table 3b list the sources that are subject to presumptive RACT for NOx and/or VOC, as required under 25 Pa. Code § 129.97, unless otherwise noted. Except for Source IDs 211, 249, 768, and 770, all other sources listed in Table 3a and Table 3b burn natural gas only for fuel. Source IDs 211 and 249 do not burn fuel. Sources under Source ID 768 only burn diesel fuel, and sources under Source ID 770 burn either natural gas, propane, or diesel fuel. There is no restriction on hours of operation for the sources in Table 3a/3b, except for Source IDs 768, 769, and 770, which are restricted to 500 hours of operation per year. Except for the Parts Washer (Source ID 211), Surface Coating (Source ID 249), and the emergency generators (Source IDs 768, 769, and 770), the PTE for sources listed in Table 3a and 3b is based on the rated capacity, the emission factor, and 8,760 hours of operation per year. The PTE for the Parts Washer (Source ID 211) Surface Coating (Source ID 249) are based on mass balancing and historical use of these sources. The PTE for the emergency generators is based on the rated capacity, the emission factor, and 500 hours of operation.

**Table 3a**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Source ID | Source Name | Rated Capacity  (MMBtu/hr)1 | Emission Factor (EF) | EF Source | PTE of NOx (TPY) | Presumptive RACT (NOx) |
| 035 | Arc Build Boiler #1 | 6.3 | 103 lb/MMcf | AP-422 | 2.7 | 129.97(c)(3)3 |
| 035 | Arc Build Boiler #2 | 6.3 | 103 lb/MMcf | AP-422 | 2.7 | 129.97(c)(3) |
| 183 | Misc - ICA Ladle Preheater (Lg) | 9.5 | 0.13 lb/MMBtu | Manufacturer | 5.41 | 129.97(c)(3) |
| 183 | Misc - ICA Ladle Preheater (Sm) | 3.8 | 0.13 lb/MMBtu | Manufacturer | 2.16 | 129.97(c)(3) |
| 190 | Bickley Furnace | 6.2 | 103 lb/MMcf | AP-422 | 2.6 | 129.97(c)(3) |
| 192 | 140M Sauder Furnace | 8.2 | 103 lb/MMcf | AP-422 | 3.5 | 129.97(c)(3) |
| 229 | Ladle Pre-heater #1 | 10.0 | 103 lb/MMcf | AP-422 | 4.5 | 129.97(c)(3) |
| 229A | Ladle Pre-heater #4 | 12.0 | 113.3 lb/MMcf | Manufacturer | 5.78 | 129.97(c)(3) |
| 229B | Ladle Pre-heater #2 | 12.0 | 113.3 lb/MMcf | Manufacturer | 5.78 | 129.97(c)(3) |
| 229B | Ladle Pre-heater #3 | 12.0 | 113.3 lb/MMcf | Manufacturer | 5.78 | 129.97(c)(3) |
| 230 | Vacuum Oxygen  Decarburization (VOD) | 8.7 | 103 lb/MMcf | AP-422 | 3.9 | 129.97(c)(3) |
| 231 | EMS Ladle Dryer/Pre-heater | 10.3 | 103 lb/MMcf | AP-422 | 4.7 | 129.97(c)(3) |
| 768 | Emer Pump/Generator | 3.054 | 3.2 lb/MMBtu | AP-42 | 2.4 | 129.97(c)(8)5 |
| 769 | 4SLB Emergency Generator | 0.06 | 4.08 lb/MMBtu | AP-42 | 0.06 | 129.97(c)(8) |
| 770 | Small Emergency Generators | 0.644 | 4.08 lb/MMBtu | AP-42 | 0.65 | 129.97(c)(8) |

1Rated capacity is reported in MMBtu/hr unless otherwise noted

2Adjusted to account for actual BTU rating of 1,052 Btu/cf versus 1,020 used for AP-42, Table 1.4-1

3Presumptice RACT for boilers or other combustion sources with an individual rated gross heat input less than 20 million Btu/hour

4Reflects largest unit included under this Source ID

5Presumptive RACT for emergency standby engines is operating less than 500 hours in a 12-month rolling period

**Table 3b**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Source ID | Source Name | Rated Capacity  (MMBtu/hr)1 | Emission Factor (EF) | EF Source | PTE of VOC (TPY) | Presumptive RACT (VOC) |
| 035 | Arc Build Boiler #1 | 6.3 | 5.67 lb/MMcf | AP-422 | 0.2 | Exempt3 |
| 035 | Arc Build Boiler #2 | 6.3 | 5.67 lb/MMcf | AP-422 | 0.2 | Exempt |
| 183 | Misc - ICA Ladle Preheater (Lg) | 9.5 | 5.67 lb/MMcf | AP-422 | 0.2 | Exempt |
| 183 | Misc - ICA Ladle Preheater (Sm) | 3.8 | 5.67 lb/MMcf | AP-422 | 0.1 | Exempt |
| 190 | Bickley Furnace | 6.2 | 5.67 lb/MMcf | AP-422 | 0.2 | Exempt |
| 192 | 140M Sauder Furnace | 8.2 | 5.67 lb/MMcf | AP-422 | 0.2 | Exempt |
| 211 | Parts Washer | N/A | Mass Balance | N/A | 2.7 | 129.63(a)4 |
| 229 | Ladle Pre-heater #1 | 10.0 | 5.67 lb/MMcf | AP-422 | 0.3 | Exempt |
| 229A | Ladle Pre-heater #4 | 12.0 | 5.67 lb/MMcf | AP-422 | 0.3 | Exempt |
| 229B | Ladle Pre-heater #2 | 12.0 | 5.67 lb/MMcf | AP-422 | 0.3 | Exempt |
| 229B | Ladle Pre-heater #3 | 12.0 | 5.67 lb/MMcf | AP-422 | 0.3 | Exempt |
| 230 | Vacuum Oxygen  Decarburization (VOD) | 8.7 | 5.67 lb/MMcf | AP-422 | 0.2 | Exempt |
| 231 | EMS Ladle Dryer/Pre-heater | 10.3 | 5.67 lb/MMcf | AP-422 | 0.3 | Exempt |
| 249 | Surface Coating | 50 Gal/hr | Mass Balance | N/A | 2.89 | 129.524,5 |
| 768 | Emer Pump/Generator | 3.057 | 0.082 lb/MMBtu | AP-42 | 0.06 | Exempt |
| 769 | 4SLB Emergency Generator | 0.06 | 0.12 lb/MMBtu | AP-42 | 0.002 | Exempt |
| 770 | Small Emergency Generators | 0.646 | 0.12 lb/MMBtu | AP-42 | 0.2 | Exempt |

1Rated capacity is reported in MMBtu/hr unless otherwise noted.

2Adjusted to account for actual BTU rating of 1,052 Btu/cf versus 1,020 used for AP-42, Table 1.4-1

3Exemption based on 25 Pa. Code § 129.96(c); RACT does not apply for VOC when less than 1 TPY

4Sources subject to 129.52 or 129.63 are not subject to RACT requirements

5Based on RACT I determination

6Reflects worst case emissions from an individual unit

**NOx and/or VOC Sources Exempt from RACT (Phase II)**

Table 4 lists the sources whose potential NOx and VOC emissions are less than 1.0 ton per year, and therefore are exempt from RACT (Phase II), in accordance with 25 Pa. Code § 129.96(c):

**Table 4**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Source ID** | **Source Name** | **Rated Capacity** | **PTE of NOx (TPY)** | **PTE of VOC (TPY)** |
| **226** | 12,000 Gal Underground  Gas Storage Tank | 12,000 Gallons | N/A | 0.7 |
| **235** | Slab Cut-off Torch & Baghouse | 2.2 MMBtu/hr | 0.5 | 0.1 |

**RACT II Implementation and Comparison to RACT I Requirements by Source ID**

Table 5a summarizes changes reflected in Title V Operating Permit No. 15-00010 as a result of the incorporation of RACT II.

**Table 5a**

|  |  |  |
| --- | --- | --- |
| **Source ID** | **Under RACT I** | **Under RACT II** |
| **035** | * This source was subject to presumptive RACT, operating per the manufacturer’s specifications and good operating practices, but this requirement was omitted from the source under the TVOP. | * A requirement to operate the source in accordance with manufacturer’s specifications (if available) and good operating practices has been placed under the source in the TVOP. |
| **055** | * A case-by-case analysis was performed for NOx, and it was determined that there were no technically and economically feasible controls for this source. No emission limits were incorporated into the RACT Operating Permit. | * The EMS Boiler was unable to meet the presumptive RACT limit of 0.10 lb NOx/million Btu heat input. Therefore, a case-by-case analysis was performed, and it was determined that there were no technically and economically feasible controls for this source. Therefore, the EMS Boiler will be subject to a short-term NOx limit of 0.147 lb/Mcf of natural gas and a long-term NOx limit of 19.62 tons per 12-month rolling period. According to ArcelorMittal Plate, the short-term emission rate was provided by the manufacturer. Testing shall be performed every 5 years to demonstrate compliance to the short-term NOx limit. Additionally, the EMS Boiler is subject to a fuel restriction of 267 million cubic of natural gas per 12-month rolling period. Records shall be maintained to demonstrate compliance with the long-term NOx limit and the fuel restriction. |

|  |  |  |
| --- | --- | --- |
| **Source ID** | **Under RACT I** | **Under RACT II** |
| **055 Cont’d** | * Per case-by-case RACT I, this source was subject to operating per the manufacturer’s specifications and good operating practices, but this requirement was omitted from the source under the TVOP. | * A requirement to operate the source in accordance with manufacturer’s specifications (if available) and good operating practices has been placed under the source in the TVOP. |
| **104** | * A case-by-case analysis was performed for NOx and VOC, and it was determined that there were no technically and economically feasible controls for this source. No emission limits were incorporated into the RACT Operating Permit. | * A case-by-case analysis was performed, and it was determined that there were no technically and economically feasible controls for this source. The following emission limits have been determined to meet RACT II, which were derived from stack testing (refer to Table 5b for supporting calculations):   0.44 lb NOx/ton of steel produced  340.6 tons NOx per 12-month rolling period  0.636 lb VOC/ton of steel produced  492.9 tons per 12-month rolling period  Testing shall be performed every 5 years to demonstrate compliance to the short-term limits. Additionally, this source is subject to a throughput restriction of 1.55 million tons of steel per year. Records shall be maintained to demonstrate compliance with the long-term emission limits and throughput restriction. |
|  | * Per case-by-case RACT I, this source was subject to operating per the manufacturer’s specifications and good operating practices, but this requirement was omitted from the source under the TVOP. | * A requirement to operate the source in accordance with manufacturer’s specifications (if available) and good operating practices has been placed under the source in the TVOP. |

|  |  |  |
| --- | --- | --- |
| **Source ID** | **Under RACT I** | **Under RACT II** |
| **136** | * A case-by-case analysis was performed for NOx, and it was determined that there were no technically and economically feasible controls for this source group. There were no NOx limits. * Per case-by-case RACT I, this source group was subject to operating per the manufacturer’s specifications and good operating practices, but this requirement was omitted from the source group under the TVOP. | * A case-by-case analysis was performed, and it was determined that there were no technically and economically feasible controls for this source group. This source group shall comply with 12-month limit of 173.6 tons for NOx by complying with a combined fuel restriction of 2,495.7 million cubic feet of natural gas per 12-month rolling period. The combined fuel rate under RACT I of 3,039.28 million cubic of natural gas per 12-month rolling period was reduced due to two units being shut down and decommissioned. The revised fuel rate was calculated using the total rated capacity, 1,000 Btu/cf, and 8,760 hours per year * A requirement to operate the source in accordance with manufacturer’s specifications (if available) and good operating practices has been placed under this source group in the TVOP. |
| **146A** | * A case-by-case analysis was performed for NOx, and it was determined that there were no technically and economically feasible controls for this source. No emission limits were incorporated into the RACT Operating Permit. * Per case-by-case RACT I, this source was subject to operating per the manufacturer’s specifications and good operating practices, but this requirement was omitted from the source under the TVOP. | * A case-by-case analysis was performed, and it was determined that there were no technically and economically feasible controls for this source. RACT II for this source is complying with a NOx limit of 33.7 tons per 12-month rolling period along with a 12-month fuel restriction. Due to a modification made to Source ID 146B after RACT I, Source ID 146A was given an individual fuel restriction under Plan Approval No. 15-0010A, which is based on the rated capacity, 1,000 Btu/cf, and 8,760 hours per year, which is consistent with how the original fuel restriction was determined. * A requirement to operate the source in accordance with manufacturer’s specifications (if available) and good operating practices has been placed under the source in the TVOP. |

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| **Source ID** | **Under RACT I** | **Under RACT II** | |
| **146B** | * A case-by-case analysis was performed for NOx. It was determined that there were no technically and economically feasible controls for this source. No emission limits were incorporated into the RACT Operating Permit. | * A case-by-case analysis was performed, and it was determined that there were no technically and economically feasible controls for this source. RACT II for this source is complying with a NOx limit of 30.6 tons per 12-month rolling period along with a 12-month fuel restriction. The fuel restriction for Source ID 146B is an existing limit that was back calculated from the NOx emission limit accepted by ArcelorMittal under Plan Approval #15-0010A, to avoid PSD. 1,000 Btu/cf and an emission factor of 120 lb/MMcf were used to back calculate the fuel usage. Continuing to comply with this limit has been deemed to meet RACT II. | |
|  | * Per case-by-case RACT I, this source was subject to operating per the manufacturer’s specifications and good operating practices, but this requirement was omitted from the source under the TVOP. | | * A requirement to operate the source in accordance with manufacturer’s specifications (if available) and good operating practices has been placed under the source in the TVOP. | |
| **151** | * A case-by-case analysis was performed for NOx, and it was determined that there were no technically and economically feasible controls for this source group. No emission limits were incorporated into the RACT Operating Permit. * Per case-by-case RACT I, this source group was subject to operating per the manufacturer’s specifications and good operating practices, but this requirement was omitted from the source group under the TVOP. | | * A case-by-case analysis was performed, and it was determined that there were no technically and economically feasible controls for this source group. This source group shall comply with 12-month limit of 502.8 tons for NOx by complying with the combined fuel restriction of 3,942 million cubic feet of natural gas per 12-month rolling period. The fuel limit is based on the total rated capacity, 1,000 Btu/cf, and 8,760 hours per year. * A requirement to operate this source group in accordance with manufacturer’s specifications (if available) and good operating practices has been placed under the source group in the TVOP. | |
| **183** | * It is uncertain if the ICA Ladle Preheater (Lg) and the ICA Ladle Preheater (Sm) were evaluated under RACT I. They do not appear in OP-15-0010. | | * The ICA Ladle Preheater (Lg) and the ICA Ladle Preheater (Sm) are subject to presumptive RACT. A requirement to operate these sources in accordance with manufacturer’s specifications (if available) and good operating practices has been placed in the TVOP for these two sources. | |

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| **Source ID** | **Under RACT I** | | **Under RACT II** |
| **190** | * This source was subject to presumptive RACT, operating per the manufacturer’s specifications and good operating practices, but this requirement was omitted from the source under the TVOP. | | * A requirement to operate the source in accordance with manufacturer’s specifications (if available) and good operating practices has been placed under this source in the TVOP. |
| **192** | | * This source was subject to presumptive RACT, operating per the manufacturer’s specifications and good operating practices, but this requirement was omitted from the TVOP. | * A requirement to operate the source in accordance with manufacturer’s specifications (if available) and good operating practices has been placed under this source in the TVOP. |
| **211** | | * This source was subject to 25 Pa. Code § 129.63 as presumptive RACT. | * This source will continue to be subject to 25 Pa. Code § 129.63. |
| **229** | | * This source was subject to presumptive RACT, operating per the manufacturer’s specifications and good operating practices, but this requirement was omitted from the TVOP. | * A requirement to operate the source in accordance with manufacturer’s specifications (if available) and good operating practices has been placed under this source in the TVOP. |
| **229A** | | * This source was subject to presumptive RACT, operating per the manufacturer’s specifications and good operating practices, but this requirement was omitted from the TVOP. | * Under Plan Approval No. 15-0010D, this source became subject to BAT, which included annual tune-ups. This is more stringent than presumptive RACT II. The annual tune-ups shall be deemed as a streamlined condition assuring compliance with presumptive RACT II. |
| **229B** | | * This source was subject to presumptive RACT, operating per the manufacturer’s specifications and good operating practices, but this requirement was omitted from the TVOP. | * Under Plan Approval No. 15-0010E, this source became subject to BAT, which included annual tune-ups. This is more stringent than presumptive RACT II. The annual tune-ups shall be deemed as a streamlined condition assuring compliance with presumptive RACT II. |

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| **Source ID** | **Under RACT I** | **Under RACT II** |
| **230** | * This source was subject to presumptive RACT, operating per the manufacturer’s specifications and good operating practices, but this requirement was omitted from the TVOP. | * A requirement to operate the source in accordance with manufacturer’s specifications (if available) and good operating practices has been placed under the source in the TVOP. |
| **231** | * This source was subject to presumptive RACT, operating per the manufacturer’s specifications and good operating practices, but this requirement was omitted from the TVOP. | * A requirement to operate the source in accordance with manufacturer’s specifications (if available) and good operating practices has been placed under the source in the TVOP. |
| **249** | * This source was subject to 25 Pa. Code § 129.52 as presumptive RACT. * This source was subject to operating per the manufacturer’s specifications and good operating practices under RACT I but this was not a regulatory requirement. | * This source continues to be subject to 129.52. * As this source is subject to 129.52, the requirement to operate the source per the manufacturer’s specifications is not a regulatory requirement and has therefore not been included in RACT II. |
| **250** | * A case-by-case analysis was performed for VOC. It was determined that there were no technically and economically feasible controls for this source. No emission limits were incorporated into the RACT Operating Permit. * Per case-by-case RACT I, this source was subject to operating per the manufacturer’s specifications and good operating practices, but this requirement was omitted from the source under the TVOP. | * A case-by-case analysis was performed, and it was determined that there were no technically and economically feasible controls for this source. This source shall comply with 12-month limit of 5.4 tons for VOC. The permittee shall monitor and record spray can usage and determine compliance with the limit through mass balancing. * A requirement to operate the source in accordance with manufacturer’s specifications (if available) and good operating practices has been placed under the source in the TVOP. |

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| **Source ID** | **Under RACT I** | **Under RACT II** |
| **270** | * A case-by-case analysis was performed for VOC, and it was determined that there were no technically and economically feasible controls for this source. No emission limits were incorporated into the RACT Operating Permit.      * Per case-by-case RACT I, this source was subject to operating per the manufacturer’s specifications and good operating practices, but this requirement was omitted from the source under the TVOP. | * A case-by-case analysis was performed, and it was determined that there were no technically and economically feasible controls for this source. Based on stack testing performed in 1998, an emission factor of 0.011 lb/ton of steel processed was developed. Using the throughput of 93.6 tons per hour and a safety factor of 100%, a limit of 9.02 tons per 12-month rolling period has been established for this source. ArcelorMittal Plate will demonstrate compliance with this limit by tracking the steel throughput on a monthly basis and complying with a 12-month steel throughput restriction of 820,000 tons. * A requirement to operate the source in accordance with manufacturer’s specifications (if available) and good operating practices has been placed in the TVOP. |
| **768** | * This source was subject to presumptive RACT, operating with a restriction of 500 hour per year under OP-15-0010. * This source was subject to presumptive RACT, operating per the manufacturer’s specifications and good operating practices, but this requirement was omitted from the TVOP. | * This source continues to be subject to a 500 hour per year limit, in accordance with presumptive RACT. * Per 40 C.F.R. § 63.6625, the operating permit already contains a requirement to operate the source(s) in accordance with manufacturer’s specifications and good operating practices. Compliance with this requirement ensures compliance with presumptive RACT. |

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| **Source ID** | **Under RACT I** | **Under RACT II** |
| **769** | * This source was not installed until 2009 so it was not evaluated under RACT I. | * This source is subject to presumptive RACT of 500 hours per year, and operating the source per the manufacturer’s specifications and good operating practices. Per 40 C.F.R. § 60.4243, the operating permit already contains a requirement to operate the source(s) in accordance with manufacturer’s specifications and good operating practices. Compliance with this requirement ensures compliance with presumptive RACT. |
| **770** | * This source was subject to presumptive RACT, operating with a restriction of 500 hour per year under OP-15-0010, but erroneously omitted from the TVOP. * This source was subject to presumptive RACT, operating per the manufacturer’s specifications and good operating practices, but this requirement was omitted from the TVOP. | * This source is subject to presumptive RACT of 500 hours per year. Presumptive RACT of 500 hours per year has been placed in the RACT II operating permit. * Per 40 C.F.R. § 63.6625, the operating permit already contains a requirement to operate the source(s) in accordance with manufacturer’s specifications and good operating practices. Compliance with this requirement ensures compliance with presumptive RACT. |

**Table 5b**

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| **Source ID** | **Supporting Calculations for Source 104 Limits** |
| **104** | Emission factor for VOC is derived from 2005 stack tests on Control Devices C003 and C090. The following reflect the highest result of 3 test runs:  C003 – 0.075 lbs/ton C090 – 0.349 lbs/ton   |  |  |  |  |  | | --- | --- | --- | --- | --- | | VOC = | (0.075 + 0.349) | +   50%  = | 0.636 | lbs/ton of steel |   Emission factor for NOx is derived from 2011 stack tests on Control Devices C003 and C090. The following reflect the highest result of 3 test runs:  C003 – 0.240 lbs/ton C090 – 0.053 lbs/ton   |  |  |  |  |  | | --- | --- | --- | --- | --- | | NOx = | (0.240 + 0.053) | +   50%  = | 0.440 | lbs/ton of steel | |

**Recommendations**

DEP agrees with the proposed RACT II determination from ArcelorMittal for their case-by-case sources, that there are no new control technologies that are both technically feasible and economically feasible. Short term limits, long term limits, and throughput limits have been included where appropriate. I recommend that Title V Operating Permit No. 15-00010 be modified to incorporate RACT II for sources located at 139 Modena Rd, Coatesville, PA in the City of Coatesville, in Chester County.