

TABLE 1: Fuel Consumption Rates		
From: The Food and Agricultural Organization of the United Nations (FAO) estimate on heavy equipment fuel efficiency http://www.fao.org/docrep/T0579E/t0579e05.htm		
Reference Table		
LMPH = liters of fuel used per machine hour		
$LMPH = (K * GHP * LF) / KPL$		
	Gasoline	Diesel
K (Fuel Consumption kg/brake hp-hour)	0.21	0.17
KPL (weight kg/liter)	0.72	0.84
LF (Load Factor) -Low	0.38	0.38
LF (Load Factor) -Med	0.54	0.54
LF (Load Factor) -High	0.7	0.7
1 Liter = 0.264172 US Gallons		

TABLE 2: Carbon Dioxide (CO2) Emission Rates				
From: The EPA's AP-42 Compilation of Air Emission Factors (Chapter 3.3) Gasoline and Diesel Industrial Engines; Table 3.3-1 https://www3.epa.gov/ttn/chieff/ap42/ch03/final/c03s03.pdf				
From: U.S. Department of Energy - Fuel Properties Comparison https://www.afdc.energy.gov/fuels/fuel_properties.php				
	Gasoline	Units	Diesel	Units
Carbon Dioxide Emissions Factor	154	lb/mmbtu	164	lb/mmbtu
Energy Content of Fuel	0.11609	mmbtu/gal	0.128488	mmbtu/gal
Carbon Dioxide Equivalent per Volume of Fuel	17.87786	lb/gal	21.072032	lb/gal
Carbon Dioxide Equivalent per Volume of Fuel	0.00893893	ton CO2e/gal	0.010536016	ton CO2e/gal

Table 3: Typical Equipment Usage on AML Projects			
From: 35+ years of construction experience and input from DAML Design and Construction Engineers and Construction Staff			
	Project Size Less Than \$500 K	Project Size Greater Than \$500 K	Hours Used Per Week (40- hour Week)
Machine			
Dozer - D4 (John Deere 450)	X		10
Excavator 1 - small (John Deere 60g)	X		40
Excavator 2 - medium (John Deere 75g)	X		40
Dump Truck - 6-wheel (Kenworth T880 Daycab)	X		30
Skid Steer/Compact Track Loader (John Deere 3202/333g)	X		40
Dozer - D4 (John Deere 450)		X	30
Dozer - D7 (John Deere D750)		X	40
Track Loader (John Deere 755K)		X	30
Excavator 1 - medium (John Deere 75g)		X	40
Excavator 2 - large (John Deere 245g)		X	30
Dump Truck 1 - 6-wheel (Kenworth T880 Daycab)		X	40
Dump Truck 2 - 6-wheel (Kenworth T880 Daycab)		X	40
Skid Steer/Compact Track Loader (John Deere 3202/333g)		X	40

Table 4: Fuel and Emissions Calculations Per Machine							
From: Table 1, Table 2, and Table 3 information; horsepower ratings of machines found on manufactures websites.							
Type of Vehicle	Gas or Diesel	Gross Engine Horsepower (GHP)	Hours Vehicle Ran Per Week	Liters of Fuel Used per Machine Hour	Gallons Consumed Per Week	Amount of Carbon Dioxide Emitted (tons)	Gallons Used Per Machine Hour
John Deere 450 Dozer	Diesel	57	10	6.229285714	16.456	0.173380981	1.645602866
John Deere 60g Excavator	Diesel	53	40	5.792142857	61.2049	0.644855579	1.530121963
John Deere 75g	Diesel	56.9	40	6.218357143	65.7086	0.692307216	1.642715843
Kenworth T880 Daycab (Average HP)	Diesel	410	30	44.80714286	355.104	3.741379069	11.83679254
John Deere 320e/333g	Diesel	66	40	7.212857143	76.2174	0.803027703	1.905434897
John Deere 750	Diesel	165	40	18.03214286	190.543	2.007569256	4.763587243
John Deere 755k	Diesel	140	30	15.3	121.255	1.277544072	4.0418316
Cat 735c	Diesel	452	40	49.39714286	521.974	5.499523054	13.04934202
John Deere 245g	Diesel	156	30	17.04857143	135.113	1.423549109	4.503755211

Table 5: CO2 Emissions Per Week	
From: Table 3 and Table 4 Information	
Project Size	Tons of CO2 Emissions per Week
< \$500,000	6.054950548
> \$500,000	19.35965953

Table 6: CO2 Emissions Per Project				
From: table 5 Infomration and DAML experience regarding general correlation of contract length to contract amount \$				
Job Size in dollars \$	Typical Contract Length in Weeks	Tons of CO2 Emissions per Week	Tons of CO2 Emissions per Project	Comparison: Percentage (%) of Kentucky's Total 2015 CO2 Emissions
< \$250,000.00	12	6.0549505	72.659406	0.000000558918508
\$250,001.00 - \$500,000.00	18	6.0549505	108.989109	0.000000838377762
\$500,001.00 - \$750,000.00	24	19.35966	464.63184	0.000003574091077
\$750,001.00 - \$1,000,000.00	36	19.35966	696.94776	0.000005361136615
> \$1,000,000.00	48	19.35966	929.26368	0.000007148182154

Kentucky's Total 2015 CO2 emissions was approximately 130 million metric tons per Department of Energy (DOE)
<https://www.eia.gov/environment/emissions/state/>

**Commonwealth of Kentucky
Energy and Environment Cabinet
Department for Environmental Protection
Division for Air Quality
300 Sower Boulevard, 2nd Floor
Frankfort, Kentucky 40601
(502) 564-3999**

Final

**AIR QUALITY PERMIT
Issued under 401 KAR 52:020**

Permittee Name: Braidy Industries, Inc.
Mailing Address: 1544 Winchester Avenue, Third Floor
Ashland, KY 41101

Source Name: Braidy Industries, Inc.
Mailing Address: 262 Technology Drive
Greenup, KY 41144

Source Location: Greenup County

Permit: V-18-001
Agency Interest: 135588
Activity: APE20180001
Review Type: Title V/Synthetic Minor
Source ID: 21-089-00064

Regional Office: Ashland Regional Office
1550 Wolohan Drive, Suite 1
Ashland, KY 41102
(606) 929-5285

County: Greenup

Application
Complete Date: March 23, 2018
Issuance Date: June 19, 2018
Expiration Date: June 19, 2023

Rick S. Shewekah for

**Sean Alteri, Director
Division for Air Quality**

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	Permit type	Activity#	Complete Date	Issuance Date	Summary of Action
V-18-001	Initial	APE20180001	3/23/2018	6/19/2018	Initial Construction Permit

SECTION A - PERMIT AUTHORIZATION

Pursuant to a duly submitted application the Kentucky Energy and Environment Cabinet (Cabinet) hereby authorizes the operation of the equipment described herein in accordance with the terms and conditions of this permit. This permit has been issued under the provisions of Kentucky Revised Statutes (KRS) Chapter 224 and regulations promulgated pursuant thereto.

The permittee shall not construct, reconstruct, or modify any affected facilities without first submitting a complete application and receiving a permit for the planned activity from the permitting authority, except as provided in this permit or in 401 KAR 52:020, Title V Permits.

Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by the Cabinet or any other federal, state, or local agency.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS

Emission Group A:

Group 1 Furnaces with Control Devices

Description:

Emission Unit #	Unit Name	Maximum Capacity (ton/hr)	Burner Maximum Capacity (MMBtu/hr)	Control Device	Construction Commenced
Process Area 01: Melting & Casting					
001	Melting Furnace #1	21.70	80.2	Lime-Injected Filter House #1	May 2018
002	Melting Furnace #2	21.70	80.2	Lime-Injected Filter House #2	May 2018
003	Melting Furnace #3	21.70	80.2	Lime-Injected Filter House #3	May 2018
007	Holding Furnace #1	21.70	20.5	Lime-Injected Filter House #1	May 2018
008	Holding Furnace #2	21.70	20.5	Lime-Injected Filter House #2	May 2018
009	Holding Furnace #3	21.70	20.5	Lime-Injected Filter House #3	May 2018

APPLICABLE REGULATIONS:**401 KAR 59:010**, *New process operations***401 KAR 63:002, Section 2(4)(ccc)**, 40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR), *National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production***PRECLUDED REGULATIONS:****401 KAR 51:017**, *Prevention of significant deterioration of air quality for PM, PM₁₀, PM_{2.5}, NO_x, CO, and VOC*

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**1. Operating Limitations:**

- a. At all times, the permittee shall operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.1506(a)(5)]
- b. The permittee shall provide and maintain easily visible labels posted at each group 1 furnace that identifies the applicable emission limits and means of compliance, including: [40 CFR 63.1506(b)]
 - i. The type of affected source or emission unit (e.g., group 1 furnace). [40 CFR 63.1506(b)(1)]
 - ii. The applicable operational standard(s) and control method(s) (work practice or control device). This includes, but is not limited to, the type of charge to be used for a furnace (e.g., clean scrap only, all scrap, etc.), flux materials and additional practices, and the applicable operating parameter ranges and requirements as incorporated in the operation, maintenance, and monitoring (OM&M) plan. [40 CFR 63.1506(b)(2)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (d)**, **5. Specific Recordkeeping Requirements (d)(vii)**, and **6. Specific Reporting Requirements (i)(iii)**.

- c. The permittee shall: [40 CFR 63.1506(c)]
 - i. Design and install a system for the capture and collection of emissions to meet the engineering standards for minimum exhaust rates or facial inlet velocities as contained in the ACGIH Guidelines (incorporated by reference, see 40 CFR 63.14); [40 CFR 63.1506(c)(1)]
 - ii. Vent captured emissions through a closed system, except that dilution air may be added to emission streams for the purpose of controlling temperature at the inlet to a fabric filter; and [40 CFR 63.1506(c)(2)]
 - iii. Operate each capture/collection system according to the procedures and requirements in the OM&M plan. [40 CFR 63.1506(c)(3)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (e)**, **5. Specific Recordkeeping Requirements (d)(viii)**, and **6. Specific Reporting Requirements (i)(v)**.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- d. The permittee shall: [40 CFR 63.1506(d)]
- i. Except as provided in 40 CFR 63.1506(d)(3), install and operate a device that measures and records or otherwise determine the weight of feed/charge (or throughput) for each operating cycle or time period used in the performance test; and [40 CFR 63.1506(d)(1)]
 - ii. Operate each weight measurement system or other weight determination procedure in accordance with the OM&M plan. [40 CFR 63.1506(d)(2)]
 - iii. The permittee may choose to measure and record aluminum production weight from an affected source or emission unit rather than feed/charge weight to an affected source or emission unit, provided that: [40 CFR 63.1506(d)(3)]
 1. The aluminum production weight, rather than feed/charge weight is measured and recorded for all emission units within a SAPU; and [40 CFR 63.1506(d)(3)(i)]
 2. All calculations to demonstrate compliance with the emission limits for SAPUs are based on aluminum production weight rather than feed/charge weight. [40 CFR 63.1506(d)(3)(ii)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (f)**, **5. Specific Recordkeeping Requirements (d)(vi)**, and **(d)(xi)**.

- e. If a bag leak detection system is used to meet the monitoring requirements in 40 CFR 63.1510, the permittee shall: [40 CFR 63.1506(m)(1)]
- i. Initiate corrective action within 1 hour of a bag leak detection system alarm. [40 CFR 63.1506(m)(1)(i)]
 - ii. Complete the corrective action procedures in accordance with the OM&M plan. [40 CFR 63.1506(m)(1)(ii)]
 - iii. Operate each fabric filter system such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during a 6-month block reporting period. In calculating this operating time fraction, if inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm shall be counted as a minimum of 1 hour. If the permittee takes longer than 1 hour to initiate corrective action, the alarm time shall be counted as the actual amount of time taken by the permittee to initiate corrective action. [40 CFR 63.1506(m)(1)(iii)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (g)(i)**, **5. Specific Recordkeeping Requirements (d)(i)(1)**, **6. Specific Reporting Requirements (i)(vi)**, and **(j)(i)(1)**.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- f. If a continuous opacity monitoring system is used to meet the monitoring requirements in 40 CFR 63.1510, the permittee shall: [40 CFR 63.1506(m)(2)]
 - i. Initiate corrective action within 1 hour of any 6-minute average reading of 5 percent or more opacity; and [40 CFR 63.1506(m)(2)(i)]
 - ii. Complete the corrective action procedures in accordance with the OM&M plan. [40 CFR 63.1506(m)(2)(ii)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (g)(ii)**, **5. Specific Recordkeeping Requirements (d)(i)(2)**, and **6. Specific Reporting Requirements (j)(i)(2)**.

- g. The permittee shall maintain the 3-hour block average inlet temperature for each fabric filter at or below the average temperatures established during the performance test, plus 25 °F (plus 14 °C). [40 CFR 63.1506(m)(3)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (h)**, **5. Specific Recordkeeping Requirements (d)(ii)**, **6. Specific Reporting Requirements (i)(iv)**, and **(j)(i)(3)**

- h. The permittee shall, for a continuous lime injection system, maintain free-flowing lime in the hopper to the feed device at all times and maintain the lime feeder setting at or above the level established during the performance test. [40 CFR 63.1506(m)(4)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (i)**, **5. Specific Recordkeeping Requirements (d)(iii)**, **6. Specific Reporting Requirements (i)(iv)**, and **(j)(i)(3)**.

- i. The permittee shall maintain the total reactive chlorine flux injection rate for each operating cycle or time period used in the performance test at or below the average rate established during the performance test. [40 CFR 63.1506(m)(5)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (j)**, **5. Specific Recordkeeping Requirements (d)(iv)**, **6. Specific Reporting Requirements (i)(iv)**, and **(j)(i)(3)**.

- j. The operation of capture/collection systems and control devices associated with natural gas-fired, propane-fired, or electrically heated group 1 furnaces that will be idled for at least 24 hours after the furnace cycle has been completed may be temporarily stopped. Operation of these capture/collection systems and control devices shall be restarted before feed/charge, flux or alloying materials are added to the furnace. [40 CFR 63.1506(m)(7)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- k. When a process parameter or add-on air pollution control device operating parameter deviates from the value or range established during the performance test and incorporated in the OM&M plan, the permittee shall initiate correction action. Corrective action shall restore operation of the affected source or emission unit (including the process or control device) to its normal or usual mode of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. Corrective actions taken shall include follow-up actions necessary to return the process or control device parameter level(s) to the value or range of values established during the performance test and steps to prevent the likely recurrence of the cause of a deviation. [40 CFR 63.1506(p)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements (d)(xii)**, **6. Specific Reporting Requirements (j)**, **(k)**, and **(l)**

1. The permittee shall prepare and implement for each affected source and emission unit, a written OM&M plan. The permittee shall submit the OM&M plan to the Division within 90 days after a successful initial performance test under 40 CFR 63.1511(b). The plan shall be accompanied by a written certification by the permittee that the OM&M plan satisfies all requirements of 40 CFR 63.1510 and is otherwise consistent with the requirements of 40 CFR 63, Subpart RRR. The permittee shall comply with all of the provisions of the OM&M plan as submitted to the Division, unless and until the plan is revised in accordance with the procedures in 40 CFR 63.1510(b). If the Division determines at any time after receipt of the OM&M plan that any revisions of the plan are necessary to satisfy the requirements of 40 CFR 63.1510 or 40 CFR 63, Subpart RRR, the permittee shall promptly make all necessary revisions and resubmit the revised plan. If the permittee determines that any other revisions of the OM&M plan are necessary, such revisions will not become effective until the permittee submits a description of the changes and a revised plan incorporating them to the Division. Each plan shall contain the following information: [40 CFR 63.1510(b)]
 - i. Process and control device parameters to be monitored to determine compliance, along with established operating levels or ranges, as applicable, for each process and control device. [40 CFR 63.1510(b)(1)]
 - ii. A monitoring schedule for each affected source and emission unit. [40 CFR 63.1510(b)(2)]
 - iii. Procedures for the proper operation and maintenance of each process unit and add-on control device used to meet the applicable emission limits or standards in 40 CFR 63.1505. [40 CFR 63.1510(b)(3)]
 - iv. Procedures for the proper operation and maintenance of monitoring devices or systems used to determine compliance, including: [40 CFR 63.1510(b)(4)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

1. Calibration and certification of accuracy of each monitoring device, at least once every 6 months, according to the manufacturer's instructions; and [40 CFR 63.1510(b)(4)(i)]
2. Procedures for the quality control and quality assurance of continuous emission or opacity monitoring systems as required by the general provisions in 40 CFR 63, Subpart A. [40 CFR 63.1510(b)(4)(ii)]
- v. Procedures for monitoring process and control device parameters, including lime injection rates, and if applicable, the procedure to be used for determining charge/feed (or throughput) weight if a measurement device is not used. [40 CFR 63.1510(b)(5)]
- vi. Corrective actions to be taken when process or operating parameters or add-on control device parameters deviate from the value or range established in 40 CFR 63.1510(b)(1), including: [40 CFR 63.1510(b)(6)]
 1. Procedures to determine and record the cause of any deviation or excursion, and the time the deviation or excursion began and ended; and [40 CFR 63.1510(b)(6)(i)]
 2. Procedures for recording the corrective action taken, the time corrective action was initiated, and the time/date corrective action was completed. [40 CFR 63.1510(b)(6)(ii)]
- vii. A maintenance schedule for each process and control device that is consistent with the manufacturer's instructions and recommendations for routine and long-term maintenance [40 CFR 63.1510(b)(7)].
- viii. Documentation of the work practice and pollution prevention measures used to achieve compliance with the applicable emission limits. [40 CFR 63.1510(b)(8)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements** (d)(x), **6. Specific Reporting Requirements** (a) and (b).

- m. The permittee shall limit natural gas combustion in each of Emission Unit #'s 001 through 003 to meet all of the following requirements: [To preclude 401 KAR 51:017]
 - i. 334.5 MMscf per year per unit on a 12-month rolling total basis; and
 - ii. An amount, based upon the most recent emission factors approved by the Division, which would not cause an exceedance of the NO_x emission limitations taken for the project authorized by V-18-001 to preclude 401 KAR 51:017; and
 - iii. The permittee shall evaluate the adequacy of permitted throughput limits taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 for PM, PM₁₀, PM_{2.5}, and CO based upon the most recent performance test results to verify and establish emission factors. If the permitted throughput limits are not adequate to meet the emission limitations in **Section D – Source Emission Limitations and Testing Requirements**

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

and preclude 401 KAR 51:017, the permittee shall submit an application within 180 days of completion of the test for revision of throughput limits accordingly.

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (b)** and **5. Specific Recordkeeping Requirements (e)**, **6. Specific Reporting Requirements (n)**, and **(o)**.

- n. The permittee shall limit natural gas combustion in each of Emission Unit #'s 007 through 009 to meet all of the following requirements: [To preclude 401 KAR 51:017]
 - i. 123.7 MMscf per year per unit on a 12-month rolling total basis; and
 - ii. An amount, based upon the most recent emission factors approved by the Division, which would not cause NO_x emission limitations taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 to be exceeded; and
 - iii. The permittee shall evaluate the adequacy of permitted throughput limits taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 for PM, PM₁₀, PM_{2.5}, and CO based upon the most recent performance test results to verify and establish emission factors. If the permitted throughput limits are not adequate to meet the emission limitations in **Section D – Source Emission Limitations and Testing Requirements** and preclude 401 KAR 51:017, the permittee shall submit an application within 180 days of completion of the test for revision of throughput limits accordingly.

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (b)** and **5. Specific Recordkeeping Requirements (e)**, **6. Specific Reporting Requirements (n)**, and **(o)**.

- o. The permittee shall limit aluminum charge processed in each of Emission Unit #'s 001 through 003 to meet all of the following requirements: [To preclude 401 KAR 51:017]
 - i. 162,316 tons per year per unit on a 12-month rolling total basis; and
 - ii. The permittee shall evaluate the adequacy of permitted throughput limits taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 for PM, PM₁₀, PM_{2.5}, and CO based upon the most recent performance test results to verify and establish emission factors. If the permitted throughput limits are not adequate to meet the emission limitations in **Section D – Source Emission Limitations and Testing Requirements** and preclude 401 KAR 51:017, the permittee shall submit an application within 180 days of completion of the test for revision of throughput limits accordingly.

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (b)** and **5. Specific Recordkeeping Requirements (f)**, **6. Specific Reporting Requirements (n)**, and **(o)**.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- p. The permittee shall limit molten aluminum processed in each of Emission Unit #'s 007 through 009 to meet all of the following requirements: [To preclude 401 KAR 51:017]
- i. 162,316 tons per year per unit on a 12-month rolling total basis; and
 - ii. The permittee shall evaluate the adequacy of permitted throughput limits taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 for PM, PM₁₀, PM_{2.5}, and CO based upon the most recent performance test results to verify and establish emission factors. If the permitted throughput limits are not adequate to meet the emission limitations in **Section D – Source Emission Limitations and Testing Requirements** and preclude 401 KAR 51:017, the permittee shall submit an application within 180 days of completion of the test for revision of throughput limits accordingly.

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (b)** and **5. Specific Recordkeeping Requirements (f)**, **6. Specific Reporting Requirements (n)**, and **(o)**.

- q. The permittee shall prepare and maintain for Emission Unit #'s 001 through 003 and 007 through 009, within 90 days of startup, a good combustion and operations practices plan (GCOP) that defines, measures, and verifies the use of operational and design practices for natural gas combustion systems to minimize NO_x emissions. Any revisions requested by the Division shall be made in accordance with the timeframe specified in the Division's request for revisions and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Division's inspection. The plan shall include a list of combustion optimization practices and a means of verifying the practices have occurred. Combustion optimization practices shall include, but not be limited to: [To preclude 401 KAR 51:017]
- i. For Emission Unit #'s 001 through 003:
 1. Installing and maintaining seals and modern insulation media to minimize heat losses from any openings around the burners or other equipment traversing through the furnace shell.
 2. Installing and maintaining a limit switch on the door to drive burners to low fire when the door is raised.
 3. Periodic preventative maintenance of gas supply valves in accordance with the manufacturer's recommended procedures and schedule
 4. Periodic calibration of gas supply meter in accordance with the manufacturer's recommended procedures and schedule.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

5. Periodic calibration of furnace pressure control system in accordance with the manufacturer's recommended procedures and schedule.
 6. Installing, operating, and maintaining burners with regenerators in accordance with manufacturer's specifications to achieve consistent air preheat temperatures resulting in high thermal efficiency.
- ii. For Emission Unit #'s 007 through 009:
1. Installing and maintaining seals and modern insulation media to minimize heat losses from any openings around the burners or other equipment traversing through the furnace shell.
 2. Installing and maintaining a limit switch on the door to drive burners to low fire when the door is raised.
 3. Periodic preventative maintenance of gas supply valves in accordance with the manufacturer's recommended procedures and schedule
 4. Periodic calibration of gas supply meter in accordance with the manufacturer's recommended procedures and schedule.
 5. Periodic calibration of furnace pressure control system in accordance with the manufacturer's recommended procedures and schedule.
 6. Installing, operating, and maintaining a combustion system that includes air to fuel ratio control for improved fuel efficiency.
 7. Implementing burner temperature control to achieve optimum temperature uniformity.

Compliance Demonstration Method:

Compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements (g), (h), and 6. Specific Reporting Requirements (p)**.

- r. The permittee shall not utilize scrap with a higher sampled oil or coating content than the sampled oil or coating content of the feed/charge material processed during the most recent performance test. [To preclude 401 KAR 51:017]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **1. Operating Limitations (s)** and **5. Specific Recordkeeping Requirements (l)**.

- s. The permittee shall prepare, maintain, and implement for Emission Unit #'s 001 through 003 and 007 through 009, within 90 days of startup, a scrap inspection program to verify the only external scrap processed is from customers supplying return scrap from coils supplied by the permittee, to assess the condition of the material, and to evaluate representative scrap samples. Any revisions requested by the Division shall be made in

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

accordance with the timeframe specified in the Division's request for revisions and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Division's inspection. The plan shall include a list of inspection practices and a means of verifying the practices have occurred. The scrap inspection plan shall include, but not be limited to: [To preclude 401 KAR 51:017]

- i. A proven method for collecting representative samples and measuring the oil and coatings content of the representative scrap samples;
 - ii. A scrap inspector training program;
 - iii. An established correlation between visual inspection and physical measurement of oil and coatings content of scrap samples;
 - iv. Periodic physical measurements of oil and coating content of randomly-selected scrap samples and comparison with visual inspection results;
 - v. A system for assuring that only acceptable scrap is charged to an affected group 1 furnace; and
 - vi. Recordkeeping requirements to document conformance with plan requirement.
- t. Prior to changing furnace classifications to those not already authorized in **Section B – Emission Units, Emission Points, Applicable Regulations, and Operating Conditions**, the permittee shall submit a permit application to incorporate the applicable standards from 40 CFR 63, Subpart RRR regarding changes in furnace classification. [401 KAR 52:020, Section 7]
- u. Refer to **Section D – Source Emission Limitations and Testing Requirements** for reactive flux usage limitations.
- 2. Emission Limitations:**
- a. The permittee shall not cause, suffer, allow, or permit any continuous emission into the open air from a control device or stack associated with any affected facility which is equal to or greater than 20 percent opacity. [401 KAR 59:010, Section 3(1)(a)]
- Compliance Demonstration Method:**
Compliance with the opacity standard shall be demonstrated according to **4. Specific Monitoring Requirements (a)** and **5. Specific Recordkeeping Requirements (a)**.
- b. For emissions from a control device or stack, the permittee shall not cause, suffer, allow or permit the emission into the open air of particulate matter (PM) from any affected facility which is in excess of the quantity specified in Appendix A to 401 KAR 59:010. [401 KAR 59:010, Section 3(2)]
- i. For process weight rates of 0.50 ton/hr or less: 2.34 lb/hr

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- ii. For process weight rates up to 30.00 tons/hr: $E = 3.59 * P^{0.62}$

Where:

E = the allowable PM emissions rate (pounds/hour)

P = the process weight rate (tons/hour)

Compliance Demonstration Method:

Compliance shall be demonstrated according to **3. Testing Requirements** (s), (t), **4. Specific Monitoring Requirements** (b), and **5. Specific Recordkeeping Requirements** (b).

- c. The permittee may limit emissions from the units in Emission Group A on an individual basis or as part of a Secondary Aluminum Processing Unit (SAPU), included in the OM&M plan. On an individual basis, the permittee shall not allow the emissions from the furnaces in Emission Group A to exceed the following: [40 CFR 63.1505(i) and (k)]
- i. PM emissions shall not exceed 0.40 lb/ton (0.20 kg/Mg) of feed/charge. [40 CFR 63.1505(i)(1)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **3. Testing Requirements** and using 40 CFR 63.1513 Equation 7: [40 CFR 63.1513(b)(1)]

$$E = \frac{C \times Q \times K_1}{P}$$

Where:

E = Emission rate of PM, in lb/ton (kg/Mg) of feed;

C = Concentration of PM, in gr/dscf (g/dscm);

Q = Volumetric flow rate of exhaust gases, in dscf/hr (dscm/hr)

K₁ = Conversion factor, 1 lb/7,000 gr (1 kg/1,000 g); and

P = Production rate, in ton/hr (Mg/hr).

- ii. Dioxin and furan (D/F TEQ) emissions shall not exceed 2.1×10^{-4} gr D/F TEQ/ton (15 µg D/F TEQ/Mg) of feed/charge. [40 CFR 63.1505(i)(3)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **3. Testing Requirements** and using 40 CFR 63.1513 Equation 7A: [40 CFR 63.1513(b)(2)]

$$E = \frac{C \times Q}{P}$$

Where:

E = Emission rate of D/F, in gr/ton (µg/Mg) of feed;

C = Concentration of D/F, in gr/dscf (µg/dscm);

Q = Volumetric flow rate of exhaust gases, in dscf/hr (dscm/hr); and

P = Production rate, in ton/hr (Mg/hr).

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

To convert D/F measurements to TEQ units, the permittee shall use the procedures and equations in *Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxins and -Dibenzofurans (CDDs and CDFs) and 1989 Update*, incorporated by reference see 40 CFR 63.14. [40 CFR 63.1513(d)]

iii. Hydrochloric acid (HCl) emissions shall not exceed: [40 CFR 63.1505(i)(4)]

1. 0.40 lb/ton (0.20 kg/Mg) of feed/charge, or

Compliance Demonstration Method:

Compliance shall be demonstrated according to **3. Testing Requirements** and using 40 CFR 63.1513 Equation 7: [40 CFR 63.1513(b)(1)]

$$E = \frac{C \times Q \times K_1}{P}$$

Where:

- E = Emission rate of HCl, in lb/ton (kg/Mg) of feed;
- C = Concentration of HCl, in gr/dscf (g/dscm);
- Q = Volumetric flow rate of exhaust gases, in dscf/hr (dscm/hr)
- K₁ = Conversion factor, 1 lb/7,000 gr (1 kg/1,000 g); and
- P = Production rate, in ton/hr (Mg/hr).

2. 10% of the uncontrolled HCl emissions, by weight.

Compliance Demonstration Method:

Compliance shall be demonstrated according to **3. Testing Requirements** and using 40 CFR 63.1513 Equation 8: [40 CFR 63.1513(c)]

$$\%R = \frac{L_i - L_o}{L_i} \times 100$$

Where:

- %R = Percent reduction of the control device;
- L_i = Inlet loading of pollutant, lb/ton (kg/Mg); and
- L_o = Outlet loading of pollutant, lb/ton (kg/Mg).

- d. If a continuous opacity monitor (COM) is chosen as the monitoring option, the permittee shall not discharge or cause to be discharged to the atmosphere visible emissions in excess of 10 percent opacity from any PM add-on air pollution control device. [40 CFR 63.1505(i)(5)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (g)(ii)**, **5. Specific Recordkeeping Requirements (d)(i)(2)**, and **6. Specific Reporting Requirements (k)**.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- e. The permittee may determine the emission standards for a SAPU by applying the group 1 furnace limits on the basis of the aluminum production weight in each group 1 furnace, rather than on the basis of feed/charge. [40 CFR 63.1505(i)(6)]
- f. The permittee shall maintain emissions at or below the limitations in the following table: [To preclude 401 KAR 51:017]

Emission Unit #	Unit Name	Pollutant	Emission Limit
001 & 007	Melting Furnace #1 and Holding Furnace #1 (combined)	NO _x	24.38 tpy on a 12-month rolling total basis
002 & 008	Melting Furnace #2 and Holding Furnace #2 (combined)	NO _x	24.38 tpy on a 12-month rolling total basis
003 & 009	Melting Furnace #3 and Holding Furnace #3 (combined)	NO _x	24.38 tpy on a 12-month rolling total basis

Compliance Demonstration Method:

Compliance shall be demonstrated according to **3. Testing Requirements** (s), (t), **4. Specific Monitoring Requirements** (k), and **5. Specific Recordkeeping Requirements** (j).

- g. Refer to **Section D – Source Emission Limitations and Testing Requirements** for SAPU requirements from 40 CFR 63, Subpart RRR and source-wide emission limitations to preclude 401 KAR 51:017.

3. Testing Requirements:

- a. Except as provided in 401 KAR 50:045, performance tests used to demonstrate compliance with 401 KAR 59:010, Section 3 shall be conducted according to the following methods. Methods are filed by reference in 401 KAR 50:015. [401 KAR 59:010, Section 4]
- i. For the emission rates of particulate matter and the associated moisture content, U.S. EPA Reference Method 5 shall be used. [401 KAR 59:010, Section 4(1)]
 - ii. U.S. EPA Reference Method 1 for sample and velocity traverses. [401 KAR 59:010, Section 4(2)]
 - iii. U.S. EPA Reference Method 2 for velocity and volumetric flow rate. [401 KAR 59:010, Section 4(3)]
 - iv. U.S. EPA Reference Method 3 for gas analysis. [401 KAR 59:010, Section 4(4)]
 - v. U.S. EPA Reference Method 9 for opacity of continuous emissions. [401 KAR 59:010, Section 4(5)]
 - vi. For U.S. EPA Reference Method 5, U.S. EPA Reference Method 1 shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- be 0.85 dscm (thirty (30) dscf) except that smaller sampling time or volumes, when necessitated by process variables or other factors, may be approved by the cabinet. [401 KAR 59:010, Section 4(7)]
- b. Performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted as required by the Division in accordance with 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1.
 - c. Prior to conducting any performance test required by 40 CFR 63, Subpart RRR, the permittee shall prepare a site-specific test plan which satisfies all of the rule requirements, and shall obtain approval of the plan pursuant to the procedures set forth in 40 CFR 63.7. Performance tests shall be conducted under such conditions as the Administrator specifies to the permittee based on representative performance of the affected source for the period being tested. Upon request, the permittee shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests. [40 CFR 63.1511(a)]
 - d. Following approval of the site-specific test plan, the permittee shall demonstrate initial compliance with each applicable emission, equipment, work practice, or operational standard for each affected source and emission unit, and report the results in the notification of compliance status report as described in 40 CFR 63.1515(b). The permittee shall conduct the initial performance test within 180 days after startup. Except for the date by which the performance test shall be conducted, the permittee shall conduct each performance test in accordance with the requirements and procedures set forth in 40 CFR 63.7(c). [40 CFR 63.1511(b)]
 - i. The performance test shall be conducted under representative conditions expected to produce the highest level of HAP emissions in the units of the emission standard for the HAP (considering the extent of feed/charge contamination, reactive flux addition rate, and feed/charge rate). If a single test condition is not expected to produce the highest level of emissions for all HAP, testing under two or more sets of conditions (for example high contamination at low feed/charge rate, and low contamination at high feed/charge rate) may be required. Any subsequent performance test for the purposes of establishing new or revised parametric limits shall be allowed upon pre-approval from the Division. These new parametric settings shall be used to demonstrate compliance for the period being tested. [40 CFR 63.1511(b)(1)]
 - ii. Each performance test for a continuous process shall consist of 3 separate runs; pollutant sampling for each run shall be conducted for the time period specified in the applicable method or, in the absence of a specific time period in the test method, for a minimum of three hours [40 CFR 63.1511(b)(2)].
 - iii. Each performance test for a batch process shall consist of three separate runs; pollutant sampling for each run shall be conducted over the entire process operating cycle. Additionally, for batch processes where the length of the process operating cycle is not known in advance, and where isokinetic sampling shall be conducted based on the procedures in U.S. EPA Reference Method 5 in 40 CFR Part 60, Appendix A, use the

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

following procedure to ensure that sampling is conducted over the entire process operating cycle: [40 CFR 63.1511(b)(3)]

1. Choose a minimum operating cycle length and begin sampling assuming this minimum length will be the run time (e.g., if the process operating cycle is known to last from four to six hours, the assume a sampling time of four hours and divide the sampling time evenly between the required number of traverse points); [40 CFR 63.1511(b)(3)(i)]
 2. After each traverse point has been sampled once, begin sampling each point again for the same time per point, in the reverse order, until the operating cycle is complete. All traverse points as required by U.S. EPA Reference Method 1 of 40 CFR Part 60, Appendix A, shall be sampled at least once during each test run; [40 CFR 63.1511(b)(3)(ii)]
 3. In order to distribute the sampling time most evenly over all the traverse points, do not perform all runs using the same sampling point order (e.g., if there are four ports and sampling for run 1 began in port 1, then sampling for run 2 could begin in port 4 and continue in reverse order.). [40 CFR 63.1511(b)(3)(iii)]
- iv. Where multiple affected sources or emission units are exhausted through a common stack, pollutant sampling for each run shall be conducted over a period of time during which all affected sources or emission units complete at least 1 entire process operating cycle or for 24 hours, whichever is shorter. [40 CFR 63.1511(b)(4)]
 - v. Initial compliance with an applicable emission limit or standard is demonstrated if the average of three runs conducted during the performance test is less than or equal to the applicable emission limit or standard. [40 CFR 63.1511(b)(5)]
 - vi. Apply 40 CFR 63.1511(b)(1) through (5) for each pollutant separately if a different production rate, charge material or, if applicable, reactive fluxing rate would apply and thereby result in a higher expected emissions rate for that pollutant. [40 CFR 63.1511(b)(6)]
 - vii. The permittee shall not conduct performance tests during periods of malfunction. [40 CFR 63.1511(b)(7)]
- e. The permittee shall use the following methods in 40 CFR Part 60, Appendix A to determine compliance with the applicable emission limits or standards: [40 CFR 63.1511(c)]
 - i. U.S. EPA Reference Method 1 for sample and velocity traverses. [40 CFR 63.1511(c)(1)]
 - ii. U.S. EPA Reference Method 2 for velocity and volumetric flow rate. [40 CFR 63.1511(c)(2)]
 - iii. U.S. EPA Reference Method 3 for gas analysis. [40 CFR 63.1511(c)(3)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- iv. U.S. EPA Reference Method 4 for moisture content of the stack gas. [40 CFR 63.1511(c)(4)]
- v. U.S. EPA Reference Method 5 for the concentration of PM. [40 CFR 63.1511(c)(5)]
- vi. U.S. EPA Reference Method 9 for visible emission observations. [40 CFR 63.1511(c)(6)]
- vii. U.S. EPA Reference Method 23 for the concentration of D/F. [40 CFR 63.1511(c)(7)]
- viii. U.S. EPA Reference Method 25A for the concentration of THC, as propane. [40 CFR 63.1511(c)(8)]
- ix. U.S. EPA Reference Method 26A for the concentration of HCl and HF. U.S. EPA Reference Method 26 may also be used, except at sources where entrained water droplets are present in the emission stream. Where a lime-injected fabric filter is used as the control device to comply with the 90 percent reduction standard, the permittee shall measure the fabric filter inlet concentration of HCl at a point before lime is introduced to the system. [40 CFR 63.1511(c)(9)]
- f. The permittee may use alternative test methods as provided in 40 CFR 63.1511(d)(1) through (3). [40 CFR 63.1511(d)]
 - i. The permittee may use test method ASTM D7520-13 as an alternative to U.S. EPA Reference Method 9 subject to conditions described in 40 CFR 63.1510(f)(4). [40 CFR 63.1511(d)(1)]
 - ii. In lieu of conducting the annual flow rate measurements using U.S. EPA Reference Methods 1 and 2, the permittee may use U.S. EPA Reference Method 204 in 40 CFR Part 51, Appendix M to conduct annual verification of a permanent total enclosure for the affected source/emission unit. [40 CFR 63.1511(d)(2)]
 - iii. The permittee may use an alternative test method approved by the Administrator. [40 CFR 63.1511(d)(3)]
- g. The permittee shall conduct a performance test every 5 years following the initial performance test. [40 CFR 63.1511(e)]
- h. The permittee shall establish a minimum or maximum operating parameter value, or an operating parameter range for each parameter to be monitored as required by 40 CFR 63.1510 that ensures compliance with the applicable emission limit or standard. To establish the minimum or maximum value or range, the permittee shall use the appropriate procedures in 40 CFR 63.1511 and submit the information required by 40 CFR 63.1515(b)(4) in the notification of compliance status report. The permittee may use existing data in addition to the results of performance test to establish operating parameter values for compliance monitoring provided each of the following conditions are met to the satisfaction of the Division: [40 CFR 63.1511(g)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- i. The complete emission test report(s) used as the basis of the parameter(s) is submitted. [40 CFR 63.1511(g)(1)]
 - ii. The same test methods and procedures as required by 40 CFR 63, Subpart RRR were used in the test. [40 CFR 63.1511(g)(2)]
 - iii. The permittee certifies that no design or work practice changes have been made to the source, process, or emission control equipment since the time of the report. [40 CFR 63.1511(g)(3)]
 - iv. All process and control equipment operating parameters required to be monitored were monitored as required in 40 CFR 63, Subpart RRR and documented in the test report. [40 CFR 63.1511(g)(4)]
 - v. If the permittee wants to conduct a new performance test and establish different operating parameter values, they shall submit a revised site specific test plan and receive approval in accordance with 40 CFR 63.1511(a). In addition, if the permittee want to use existing data in addition to the results of the new performance test to establish operating parameter values, they shall meet the requirements in 40 CFR 63.1511(g)(1) through (4). [40 CFR 63.1511(g)(5)]
- i. When group 1 furnaces and/or in-line fluxers are included in a single existing SAPU or new SAPU, and the emissions from more than one emission unit within that existing SAPU or new SAPU are manifolded to a single control device, compliance for all units within the SAPU is demonstrated if the total measured emissions from all controlled and uncontrolled units in the SAPU do not exceed the emission limits calculated for that SAPU based on the applicable equation in 40 CFR 63.1505(k). [40 CFR 63.1511(h)]
 - j. With the prior approval of the Division, the permittee may do combined performance testing of two or more individual affected sources or emission units which are not included in a single existing SAPU or new SAPU, but whose emissions are manifolded to a single control device. Any such performance testing of commonly-ducted units shall satisfy the following basic requirements: [40 CFR 63.1511(i)]
 - i. All testing shall be designed to verify that each affected source or emission unit individually satisfies all emission requirements applicable to that affected source or emission unit; [40 CFR 63.1511(i)(1)]
 - ii. All emissions of pollutants subject to a standard shall be tested at the outlet from each individual affected source or emission unit while operating under the highest load or capacity reasonable expected to occur, and prior to the point that the emissions are manifolded together with emission from other affected sources or emission units; [40 CFR 63.1511(i)(2)]
 - iii. The combined emissions from all affected sources and emission units which are manifolded to a single emission control device shall be tested at the outlet of the emission control device; [40 CFR 63.1511(i)(3)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- iv. All tests at the outlet of the emission control device shall be conducted with all affected sources and emission units whose emissions are manifolded to the control device operating simultaneously under the highest load or capacity reasonable expected to occur; and [40 CFR 63.1511(i)(4)]
- v. For purposes of demonstrating compliance of a commonly-ducted unit with any emission limit for a particular type of pollutant, the emission of that pollutant by the individual unit shall be presumed to be controlled by the same percentage as total emissions of that pollutant from all commonly-ducted units are controlled at the outlet of the emission control device. [40 CFR 63.1511(i)(5)]
- k. The permittee shall conduct performance tests to measure emissions of PM and D/F at the outlet of the control device and emissions of HCl at the outlet (for the emission limit) or the inlet and outlet (for the percent reduction standard). [40 CFR 63.1512(d)(1)]
- l. The permittee may choose to determine the rate of reactive flux addition to the group 1 furnace and assume, for the purposes of demonstrating compliance with the SAPU emission limit, that all reactive flux added to the group 1 is emitted. Under these circumstances, the permittee is not required to conduct an emission test for HCl. [40 CFR 63.1512(d)(3)]
- m. The permittee shall conduct performance test as described in 40 CFR 63.1512(j)(1) through (3). The results of the performance tests are used to establish emission rates in lb/ton of feed/charge for PM, HCl, and HF and $\mu\text{g TEQ/Mg}$ of feed charge for D/F emissions from each emission unit. These emission rates are used for compliance monitoring in the calculation of the 3-day, 24-hour rolling average emission rates using the equation in 40 CFR 63.1510(t). A performance test is required for: [40 CFR 63.1512(j)]
 - i. Each group 1 furnace that processes scrap other than clean charge to measure emissions of PM and D/F and either: [40 CFR 63.1512(j)(2)]
 - 1. Emissions of HF and HCl (for determining the emission limit); or [40 CFR 63.1512(j)(2)(i)]
 - 2. The mass flow rate of HCl at the inlet to and outlet from the control device (for the percent reduction standard). [40 CFR 63.1512(j)(2)(ii)]
- n. During the emission test(s) conducted to determine compliance with emission limits in a kg/Mg (lb/ton) format, the permittee of an affected source or emission unit, subject to an emission limit in a kg/Mg (lb/ton) of feed/charge format, shall measure (or otherwise determine) and record the total weight of feed/charge to the affected source or emission unit for each of the three test runs and calculate and record the total weight. If the permittee chooses to demonstrate compliance on the basis of the aluminum production weight shall measure the weight of aluminum produced by the emission unit or affected source instead of the feed/charge weight. [40 CFR 63.1512(k)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- o. If the permittee uses a continuous opacity monitoring system, the permittee shall conduct a performance evaluation to demonstrate compliance with Performance Specification 1 in 40 CFR Part 60, Appendix B. Following the performance evaluation, the permittee shall measure and record the opacity of emissions from each exhaust stack for all consecutive 6-minute periods during the PM emission test. [40 CFR 63.1512(l)]
- p. The permittee shall use these procedures to establish an operating parameter value or range for the inlet gas temperature: [40 CFR 63.1512(n)]
 - i. Continuously measure and record the temperature at the inlet to the lime-injected fabric filter every 15 minutes during the HCl and D/F performance tests; [40 CFR 63.1512(n)(1)]
 - ii. Determine and record the 15-minute block average temperatures for the 3 test runs; and [40 CFR 63.1512(n)(2)]
 - iii. Determine and record the 3-hour block average of the recorded temperature measurements for the 3 test runs. [40 CFR 63.1512(n)(3)]
- q. The permittee shall use these procedures to establish an operating parameter value or range for the total reactive chlorine flux injection rate: [40 CFR 63.1512(o)]
 - i. Continuously measure and record the weight of gaseous or liquid reactive flux injected for each 15 minute period during the HCl, HF, and D/F tests, determine and record the 15-minute block average weights, and calculate and record the total weight of the gaseous or liquid reactive flux for the 3 test runs; [40 CFR 63.1512(o)(1)]
 - ii. Record the identity, composition, and total weight of each addition of solid reactive flux for the 3 test runs; [40 CFR 63.1512(o)(2)]
 - iii. Determine the total reactive chlorine flux injection rate by adding the recorded measurement of the total weight of chlorine in the gaseous or liquid reactive flux injected and the total weight of chlorine in the solid reactive flux using the equation below. [40 CFR 63.1512(o)(3)]

$$W_t = F_1W_1 + F_2W_2$$

Where,

W_t = Total chlorine or fluorine usage, by weight;

F_1 = Fraction of gaseous or liquid flux that is chlorine or fluorine;

W_1 = Weight of reactive flux gas injected;

F_2 = Fraction of solid reactive chloride flux that is chlorine (*e.g.*, $F = 0.75$ for magnesium chloride) or fraction of solid reactive flux that is fluorine (*e.g.*, $F = 0.33$ for potassium fluoride); and

W_2 = Weight of solid reactive flux

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- iv. Divide the weight of total chlorine or fluorine usage (W_t) for the 3 test runs by the recorded measurement of the total weight of feed for the 3 test runs; and [40 CFR 63.1512(o)(4)]
- v. If a solid reactive flux other than magnesium chloride or potassium fluoride is used, the permittee shall derive the appropriate proportion factor subject to approval by the Division. [40 CFR 63.1512(o)(5)]
- r. The permittee shall use these procedures during the HCl and D/F test to establish an operating parameter value for the feeder setting for each operating cycle or time period used in the performance test: [40 CFR 63.1512(p)]
 - i. For continuous lime injection systems, ensure that lime in the feed hopper or silo is free-flowing at all times; and [40 CFR 63.1512(p)(1)]
 - ii. Record the feeder setting and lime injection rate for the 3 test runs. If the feed rate setting and lime injection rates vary between the runs, determine and record the average feed rate and lime injection rate from the 3 runs. [40 CFR 63.1512(p)(2)]
- s. Within 60 days after achieving the maximum production rate at which the affected facilities will be operated but not later than 180 days after initial start-up of the first Melting Furnace/Holding Furnace pair and associated control device, the permittee shall conduct performance testing over an entire process operating cycle to verify and establish the PM, PM₁₀, PM_{2.5}, NO_x, and CO emission factors associated with Emission Unit #'s 001 through 003 and 007 through 009. The results from a single Melting Furnace/Holding Furnace pair and associated control device (controlling a melting furnace, holding furnace, and in-line degasser in series) on any of the three identical casting lines are assumed to be representative of the other furnaces and control devices. [To Preclude 401 KAR 51:017]
 - i. Prior to performance testing, the permittee shall:
 - 1. Establish a pressure drop range for the lime-injected filter house and a volumetric flowrate range for the furnace capture systems in accordance with the manufacturer's written instructions and operate the control devices within these ranges during the test.
 - 2. Define the process operating cycle in the test protocol submittal.
 - ii. Pollutant measurement shall be made at the following locations:
 - 1. Uncontrolled exhaust from the Melting Furnace for PM, PM₁₀, and PM_{2.5};
 - 2. Uncontrolled exhaust from the Holding Furnace for PM, PM₁₀, and PM_{2.5}; and
 - 3. Combined inlet to the lime-injected filter house for PM, PM₁₀, and PM_{2.5}; simultaneously with
 - 4. Stack outlet from the lime-injected filter house for PM, PM₁₀, PM_{2.5}, NO_x, and CO.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- iii. Performance testing shall be conducted using the following U.S. EPA Reference Test Methods:
 - 1. U.S. EPA Reference Method 5 for PM;
 - 2. U.S. EPA Reference Methods 201A/202 for PM₁₀ and PM_{2.5};
 - 3. U.S. EPA Reference Method 7 for NO_x; and
 - 4. U.S. EPA Reference Method 10 for CO; or
 - 5. Other test methods, as approved by the Division.
 - iv. During performance testing, the permittee shall monitor the following parameters:
 - 1. Process weight rate;
 - 2. Volumetric flow rate at each pollutant measurement location; and
 - 3. Volumetric flow rate at the filter house stack discharge.
 - t. The permittee shall conduct subsequent performance testing within 5 years of the date the previous performance test, which verified compliance with the emission limits required to preclude 401 KAR 51:017, was conducted. Performance testing shall be conducted to verify and establish the PM, PM₁₀, PM_{2.5}, NO_x, and CO emission factors associated with Emission Unit #'s 001 through 003 and 007 through 009. The results from a single Melting Furnace/Holding Furnace pair and associated control device (controlling a melting furnace, holding furnace, and in-line degasser in series) on any of the three identical casting lines are assumed to be representative of the other furnaces and control devices. Subsequent performance testing conducted to verify compliance with the emission limits required to preclude 401 KAR 51:017 shall: [To preclude 401 KAR 51:017]
 - i. Satisfy all conditions specified for initial performance testing required to preclude 401 KAR 51:017.
 - ii. Subsequent performance testing shall not be repeated on a given Melting Furnace/Holding Furnace pair and associated control device until all Melting Furnace/Holding Furnace pairs and associated control devices have completed a performance testing cycle.
 - u. Refer to **Section G – General Provisions** for additional requirements.
- 4. Specific Monitoring Requirements:**
- a. The permittee shall perform a qualitative visual observation of the emissions from each stack while any of the associated equipment is operating on a weekly basis. If visible emissions are present then the opacity shall be determined by using U.S. EPA Reference Method 9. [401 KAR 52:020, Section 10]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- b. The permittee shall monitor hours of operation, process weight rate (tons), as defined in 401 KAR 59:010, Section 2, aluminum production (tons), and natural gas combusted (MMscf) on a monthly basis. [401 KAR 52:020, Section 10]
- c. The permittee shall prepare and implement for each affected source, a written OM&M plan. [40 CFR 63.1510(b)]
- d. The permittee shall inspect the labels for each group 1 furnace at least once per calendar month to confirm that posted labels as required by the operational standard in 40 CFR 63.1506(b) are intact and legible. [40 CFR 63.1510(c)]
- e. The permittee shall: [40 CFR 63.1510(d)]
 - i. Install, operate, and maintain a capture/collection system for each affected source and emission unit equipped with an add-on air pollution control device; and [40 CFR 63.1510(d)(1)]
 - ii. Inspect each capture/collection and closed vent system at least once each calendar year to ensure that each system is operating in accordance with the operating requirements in 40 CFR 63.1506(c) and record the results of each inspection. This inspection shall include a volumetric flow rate measurement taken at a location in the ductwork downstream of the hoods that is representative of the actual volumetric flow rate without interference due to leaks, ambient air added for cooling or ducts from other hoods. The flow rate measurement shall be performed in accordance with 40 CFR 63.1510(d)(2)(i), (ii), or (iii). As an alternative to the flow rate measurement specified in 40 CFR 63.1510(d)(2), the inspection may satisfy the requirements of 40 CFR 63.1510(d)(2), including the operating requirements in 40 CFR 63.1506(c), by including permanent total enclosure verification in accordance with 40 CFR 63.1510(d)(2)(i) or (iv). Inspections that fail to successfully demonstrate that the requirements of 40 CFR 63.1506(c) are met, shall be followed by repair or adjustment to the system operating conditions and a follow up inspection within 45 days to demonstrate that 40 CFR 63.1506(c) requirements are fully met. [40 CFR 63.1510(d)(2)]
- 1. Conduct annual flow rate measurements using U.S. EPA Reference Methods 1 and 2 in 40 CFR Part 60, Appendix A, or conduct annual verification of a permanent total enclosure using U.S. EPA Reference Method 204; or the permittee may follow one of the three alternate procedures described in 40 CFR 63.1510(d)(2)(ii), (iii), or (iv) to maintain system operations in accordance with an operating limit established during the performance test. The operating limit is determined as the average reading of a parametric monitoring instrument (Magnehelic[®], manometer, anemometer, or other parametric monitoring instrument) and technique as described in 40 CFR 63.1510(d)(2)(ii), (iii), and (iv). A deviation, as defined in 40 CFR 63.1510(d)(2)(ii), (iii), and (iv), from the parametric monitoring operating limit requires the permittee to make repairs or adjustments to restore normal operation within 45 days. [40 CFR 63.1510(d)(2)(i)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

2. As an alternative to annual flow rate measurements using U.S. EPA Reference Methods 1 and 2, measurement with U.S. EPA Reference Methods 1 and 2 can be performed once every 5 years, provided that: [40 CFR 63.1510(d)(2)(ii)]
 - A. A flow rate indicator consisting of a pitot tube and differential pressure gauge (Magnehelic[®], manometer, or other differential pressure gauge) is installed with the pitot tube tip located at a representative point of the duct proximate to the location of the U.S. EPA Reference Methods 1 and 2 measurement site; and [40 CFR 63.1510(d)(2)(ii)(A)]
 - B. The flow rate indicator is installed and operated in accordance with the manufacturer's specifications; and [40 CFR 63.1510(d)(2)(ii)(B)]
 - C. The differential pressure is recorded during the U.S. EPA Reference Method 2 performance test series; and [40 CFR 63.1510(d)(2)(ii)(C)]
 - D. Daily differential pressure readings are made by taking three measurements with at least 5 minutes between each measurement and averaging the three measurements; and readings are recorded daily and maintained at or above 90 percent of the average pressure differential indicated by the flow rate indicator during the most recent U.S. EPA Reference Method 2 performance test series; and [40 CFR 63.1510(d)(2)(ii)(D)]
 - E. An inspection of the pitot tube and associated lines for damage, plugging, leakage, and operational integrity is conducted at least once per year; or [40 CFR 63.1510(d)(2)(ii)(E)]
3. As an alternative to annual flow rate measurements using U.S. EPA Reference Methods 1 and 2, measurement with U.S. EPA Reference Methods 1 and 2 can be performed once every 5 years, provided that: [40 CFR 63.1510(d)(2)(iii)]
 - A. Daily measurements of the capture and collection system's fan revolutions per minute (RPM) or fan motor amperage (amps) are made by taking three measurements with at least 5 minutes between each measurement, and averaging the three measurements; and readings are recorded daily and maintained at or above 90 percent of the average RPM or amps measured during the most recent U.S. EPA Reference Method 2 performance test series; or [40 CFR 63.1510(d)(2)(iii)(A)]
 - B. A static pressure measurement device is installed in the duct immediately downstream of the hood exit, and daily pressure readings are made by taking three measurements with at least 5 minutes between each measurement, and averaging the three measurements; and readings are recorded daily and maintained at 90 percent or better of the average vacuum recorded during the most recent U.S. EPA Reference Method 2 performance test series; or [40 CFR 63.1510(d)(2)(iii)(B)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- C. A hotwire anemometer, ultrasonic flow meter, cross-duct pressure differential sensor, venturi pressure differential monitoring or orifice plate equipped with an associated thermocouple and automated data logging software and associated hardware is installed; and daily readings are made by taking three measurements with at least 5 minutes between each measurement, and averaging the three measurements; and readings are recorded daily and maintained at 90 percent or greater of the average readings during the most recent U.S. EPA Reference Method 2 performance test series; or [40 CFR 63.1510(d)(2)(iii)(C)]
- D. For booth-type hoods, hotwire anemometer measurements of hood face velocity are performed simultaneously with U.S. EPA Reference Method 1 and 2 measurements, and the annual hood face velocity measurements confirm that the enclosure draft is maintained at 90 percent or greater of the average readings during the most recent U.S. EPA Reference Method 2 performance test series. Daily readings are made by taking three measurements with at least 5 minutes between each measurement, and averaging the three measurements; and readings are recorded daily and maintained at 90 percent or greater of the average readings during the most recent U.S. EPA Reference Method 1 and 2 performance test series. [40 CFR 63.1510(d)(2)(iii)(D)]
- 4. As an alternative to the annual verification of a permanent total enclosure using U.S. EPA Reference Method 204, verification can be performed once every 5 years, provided that: [40 CFR 63.1510(d)(2)(iv)]
 - A. Negative pressure in the enclosure is directly monitored by a pressure indicator installed at a representative location; [40 CFR 63.1510(d)(2)(iv)(A)]
 - B. Pressure readings are recorded daily or the system is interlocked to halt material feed should the system not operate under negative pressure; [40 CFR 63.1510(d)(2)(iv)(B)]
 - C. An inspection of the pressure indicator for damage and operational integrity is conducted at least once per calendar year. [40 CFR 63.1510(d)(2)(iv)(C)]
- f. The permittee shall install, calibrate, operate, and maintain a device to measure and record the total weight of feed/charge to, or the aluminum production from, the affected source or emission unit over the same operating cycle or time period used in the performance test. Feed/charge or aluminum production within SAPUs shall be measured and recorded on an emission unit-by-emission unit basis. As an alternative to a measurement device, the permittee may use a procedure acceptable to the Division to determine the total weight of feed/charge or aluminum production to the affected source or emission unit. [40 CFR 63.1510(e)]
 - i. The accuracy of the weight measurement device or procedure shall be ± 1 percent of the weight being measured. The permittee may apply to the Division for approval to use a device of alternative accuracy if the required accuracy cannot be achieved as a

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- result of equipment layout or charging practices. A device of alternative accuracy will not be approved unless the permittee provides assurance through data and information that the affected source will meet the relevant emission standard. [40 CFR 63.1510(e)(1)]
- ii. The permittee shall verify the calibration of the weight measurement device in accordance with the schedule specified by the manufacturer, or if no calibration schedule is specified, at least once every 6 months. [40 CFR 63.1510(e)(2)]
 - g. The permittee shall install, calibrate, maintain, and continuously operate a bag leak detection system as required in 40 CFR 63.1510(f)(1) or a continuous opacity monitoring system as required in 40 CFR 63.1510(f)(2). [40 CFR 63.1510(f)]
 - i. The following requirements apply to the permittee if a bag leak detection system is used: [40 CFR 63.1510(f)(1)]
 1. The permittee shall install and operate a bag leak detection system for each exhaust stack of a fabric filter. [40 CFR 63.1510(f)(1)(i)]
 2. Each bag leak detection system shall be installed, calibrated, operated, and maintained according to the manufacturer's operating instructions. [40 CFR 63.1510(f)(1)(ii)]
 3. The bag leak detection system shall be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less. [40 CFR 63.1510(f)(1)(iii)]
 4. The bag leak detection system sensor shall provide output of relative or absolute PM loadings. [40 CFR 63.1510(f)(1)(iv)]
 5. The bag leak detection system shall be equipped with a device to continuously record the output signal from the sensor. [40 CFR 63.1510(f)(1)(v)]
 6. The bag leak detection system shall be equipped with an alarm system that will sound automatically when an increase in relative PM emissions over a preset level is detected. The alarm shall be located where it is easily heard by plant operating personnel. [40 CFR 63.1510(f)(1)(vi)]
 7. For positive pressure fabric filter systems, a bag leak detection system shall be installed in each baghouse compartment or cell. For negative pressure or induced air fabric filters, the bag leak detector shall be installed downstream of the fabric filter. [40 CFR 63.1510(f)(1)(vii)]
 8. Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors. [40 CFR 63.1510(f)(1)(viii)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

9. The baseline output shall be established by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time. [40 CFR 63.1510(f)(1)(ix)]
 10. Following initial adjustment of the system, the permittee shall not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time except as detailed in the OM&M plan. In no case may the sensitivity be increased by more than 100 percent or decreased more than 50 percent over a 365-day period unless such adjustment follows a complete fabric filter inspection which demonstrates that the fabric filter is in good operating condition. [40 CFR 63.1510(f)(1)(x)]
- ii. The following requirements apply to the permittee if a continuous opacity monitoring system is used: [40 CFR 63.1510(f)(2)]
 1. The permittee shall install, calibrate, maintain, and operate a continuous opacity monitoring system to measure and record the opacity of emissions exiting each exhaust stack. [40 CFR 63.1510(f)(2)(i)]
 2. Each continuous opacity monitoring system shall meet the design and installation requirements of Performance Specification 1 in 40 CFR Part 60, Appendix B. [40 CFR 63.1510(f)(2)(ii)]
- h. The permittee shall install, calibrate, maintain, and operate a device to continuously monitor and record the temperature of the fabric filter inlet gases consistent with the requirements for continuous monitoring systems in 40 CFR 63, Subpart A. The temperature monitoring device shall meet each of the following performance and equipment specifications: [40 CFR 63.1510(h)(1) and (2)]
 - i. The monitoring system shall record the temperature in 15-minute block averages and calculate and record the average temperature for each 3-hour block period. [40 CFR 63.1510(h)(2)(i)]
 - ii. The recorder response range shall include zero and 1.5 times the average temperature established according to the requirements in 40 CFR 63.1512(n). [40 CFR 63.1510(h)(2)(ii)]
 - iii. The reference method shall be a National Institute of Standards and Technology calibrated reference thermocouple-potentiometer system or alternate reference, subject to approval by the Administrator. [40 CFR 63.1510(h)(2)(iii)]
- i. The following requirements apply to the permittee for use of a lime-injected fabric filter to comply with the requirements of 40 CFR 63, Subpart RRR. [40 CFR 63.1510(i)]
 - i. For a continuous lime injection system, the permittee shall verify that lime is always free-flowing by either: [40 CFR 63.1510(i)(1)]
 1. Inspecting each feed hopper or silo at least once each 8-hour period and recording the results of each inspection. If lime is found not to be free-flowing during any of

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

the 8-hour periods, the permittee shall increase the frequency of inspection to at least once every 4-hour period for the next 3 days. The permittee may return to inspections at least once every 8-hour period if corrective action results in no further blockages of lime during the 3-day period; or [40 CFR 63.1510(i)(1)(i)]

2. Subject to the approval of the Division, installing, operating, and maintaining a load cell, carrier gas/lime flow indicator, carrier gas pressure drop measurement system or other system to confirm that lime is free-flowing. If lime is found not to be free-flowing, the permittee shall promptly initiate and complete corrective action; or [40 CFR 63.1510(i)(1)(ii)]
 3. Subject to the approval of the Division, installing, operating, and maintaining a device to monitor the concentration of HCl at the outlet of the fabric filter. If an increase in the concentration of HCl indicates that the lime is not free-flowing, the permittee shall promptly initiate and complete corrective action. [40 CFR 63.1510(i)(1)(iii)]
- ii. For a continuous lime injection system, the permittee shall record the lime feeder setting once each day of operation [40 CFR 63.1510(i)(2)].
 - iii. For intermittent addition of lime to a lime-injected fabric filter, the permittee shall obtain approval from the Division for a lime addition monitoring procedure. The Division will not approve a monitoring procedure unless data and information are submitted establishing that the procedure is adequate to ensure that relevant emission standards will be met on a continuous basis. [40 CFR 63.1510(i)(3)]
 - iv. At least once per month, verify that the lime injection rate in pounds per hour (lb/hr) is no less than 90 percent of the lime injection rate used to demonstrate compliance during the most recent performance test. If the monthly check of the lime injection rate is below 90 percent, the permittee shall repair or adjust the lime injection system to restore normal operation within 45 days. The permittee may request from the Division an extension of up to an additional 45 days to demonstrate that the lime injection rate is no less than 90 percent of the lime injection rate used to demonstrate compliance during the most recent performance test. In the event that a lime feeder is repaired or replaced, the feeder shall be calibrated, and the feed rate shall be restored to the lb/hr feed rate operating limit established during the most recent performance test within 45 days. The permittee may request from the Division an extension of up to an additional 45 days to complete the repair or replacement and establishing a new setting. The repair or replacement, and the establishment of the new feeder setting(s) shall be documented in accordance with the recordkeeping requirements of 40 CFR 63.1517. [40 CFR 63.1510(i)(4)]
- j. The permittee shall: [40 CFR 63.1510(j)]
 - i. Install, calibrate, operate, and maintain a device to continuously measure and record the weight of gaseous or liquid reactive flux injected to each affected source or emission unit. [40 CFR 63.1510(j)(1)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

1. The monitoring system shall record the weight for each 15-minute block period, during which reactive fluxing occurs, over the same operating cycle or time period used in the performance test. [40 CFR 63.1510(j)(1)(i)].
2. The accuracy of the weight measurement device shall be ± 1 percent of the weight of the reactive component of the flux being measured. The permittee may apply to the Division for permission to use a weight measurement device of alternative accuracy in cases where the reactive flux flow rates are so low as to make the use of a weight measurement device of ± 1 percent impracticable. A device of alternative accuracy will not be approved unless the permittee provides assurance through data and information that the affected source will meet the relevant emission standards. [40 CFR 63.1510(j)(1)(ii)]
3. The permittee shall verify the calibration of the weight measurement device in accordance with the schedule specified by the manufacturer, or if no calibration schedule is specified, at least once every 6 months. [40 CFR 63.1510(j)(1)(iii)]
- ii. Calculate and record the gaseous or liquid reactive flux injection rate (kg/Mg or lb/ton) for each operating cycle or time period used in the performance test using the procedure in 40 CFR 63.1512(o). [40 CFR 63.1510(j)(2)]
- iii. Record, for each 15-minute block period during each operating cycle or time period used in the performance test during which reactive fluxing occurs, the time, weight, and type of flux for each addition of: [40 CFR 63.1510(j)(3)]
 1. Gaseous or liquid reactive flux other than chlorine; and [40 CFR 63.1510(j)(3)(i)]
 2. Solid reactive flux. [40 CFR 63.1510(j)(3)(ii)]
- iv. Calculate and record the total reactive flux injection rate for each operating cycle or time period used in the performance test using the procedure in 40 CFR 63.1512(o). For solid flux that is added intermittently, record the amount added for each operating cycle or time period used in the performance test using the procedures in 40 CFR 63.1512(o). [40 CFR 63.1510(j)(4)]
- v. The permittee may apply to the Administrator for approval of an alternative method for monitoring and recording the total reactive flux addition rate based on monitoring the weight or quantity of reactive flux per ton of feed/charge for each operating cycle or time period used in the performance test. An alternative monitoring method will not be approved unless the permittee provides assurance through data and information that the affected source will meet the relevant emission standards on a continuous basis. [40 CFR 63.1510(j)(5)]
- k. The permittee shall calculate monthly and 12-month rolling total emissions for NO_x for each of Emission Unit #'s 001 through 003 and 007 through 009. Calculations shall be based upon emission factors most recently approved by the Division. [401 KAR 52:020, Section 10]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- l. For each lime-injected filter house, the permittee shall install, calibrate at least annually, maintain, and operate a continuous parameter monitoring system to measure and record: [401 KAR 52:020, Section 10]
 - i. The differential pressure drop across the filter house; and
 - ii. The volumetric flow rate in the filter house stack to verify that it is maintained within the range recommended by the manufacturer.
- m. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

5. Specific Recordkeeping Requirements:

- a. The permittee shall maintain records of qualitative visual observations of the emissions from each stack and any U.S. EPA Reference Method 9 readings performed. [401 KAR 52:020, Section 10]
- b. The permittee shall maintain records of hours of operation, process weight rate (tons), as defined in 401 KAR 59:010, Section 2, aluminum production (tons), and natural gas combusted (MMscf) on a monthly basis. [401 KAR 52:020, Section 10]
- c. The permittee shall maintain files of all information (including all reports and notifications) required by 40 CFR 63.10(b) and 40 CFR 63, Subpart RRR. [40 CFR 63.1517(a)]
 - i. The permittee shall retain each record for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The most recent 2 years of records shall be retained at the facility. The remaining 3 years of records may be retained off site. [40 CFR 63.1517(a)(1)]
 - ii. The permittee may retain records on microfilm, computer disks, magnetic tape, or microfiche; and [40 CFR 63.1517(a)(2)]
 - iii. The permittee may report required information on paper or on a labeled computer disk using commonly available and EPA-compatible computer software. [40 CFR 63.1517(a)(3)]
- d. In addition to the general records required by 40 CFR 63.10(b), the permittee shall maintain records of: [40 CFR 63.1517(b)]
 - i. For each affected source and emission unit with emissions controlled by a fabric filter or lime-injected fabric filter: [40 CFR 63.1517(b)(1)]
 1. If a bag leak detection system is used, the number of total operating hours for the affected source or emission unit during each 6-month reporting period, records of each alarm, the time of the alarm, the time corrective action was initiated and completed, and a brief description of the cause of the alarm and corrective action(s) taken. [40 CFR 63.1517(b)(1)(i)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

2. If a continuous opacity monitoring system is used, records of opacity measurement data, including records where the average opacity of any 6-minute period exceeds 5 percent, with a brief explanation of the cause of the emission, the time the emissions occurred, the time corrective action was initiated and completed, and the corrective action taken. [40 CFR 63.1517(b)(1)(ii)]
- ii. For each group 1 furnace, subject to D/F and HCl emission standards with emissions controlled by a lime-injected fabric filter, records of 15-minute block average inlet temperatures for each lime-injected fabric filter, including any period when the 3-hour block average temperature exceeds the compliant operating parameter value + 14 °C (+ 25 °F), with a brief explanation of the cause of the excursion and the corrective action taken. [40 CFR 63.1517(b)(3)]
 - iii. For each affected source and emission unit with emissions controlled by a lime-injected fabric filter: [40 CFR 63.1517(b)(4)]
 1. Records of inspections at least once every 8-hour period verifying that lime is present in the feeder hopper or silo and flowing, including any inspection where blockage is found, with a brief explanation of the cause of the blockage and the corrective action taken, and records of inspections at least once every 4-hour period for the subsequent 3 days. If flow monitors, pressure drop sensors or load cells are used to verify that lime is present in the hopper and flowing, records of all monitor or sensor output including any event where blockage was found, with a brief explanation of the cause of the blockage and the corrective action taken; [40 CFR 63.1517(b)(4)(i)]
 2. If lime feeder setting is monitored, records of daily and monthly inspections of feeder setting, including records of any deviation of the feeder setting from the setting used in the performance test, with a brief explanation of the cause of the deviation and the corrective action taken. If a lime feeder has been repaired or replaced, this action shall be documented along with records of the new feeder calibration and the feed mechanism set points necessary to maintain the lb/hr feed rate operating limit. These records shall be maintained on site and available upon request. [40 CFR 63.1517(b)(4)(ii)]
 3. If lime addition rate for a noncontinuous lime injection system is monitored pursuant to the approved alternative monitoring requirements in 40 CFR 63.1510(v), records of the time and mass of each lime addition during each operating cycle or time period used in the performance test and calculations of the average lime addition rate (lb/ton of feed/charge). [40 CFR 63.1517(b)(4)(iii)]
 - iv. For each group 1 furnace (with or without add-on air pollution control devices) or in-line fluxer, records of 15-minute block average weights of gaseous or liquid reactive flux injection, total reactive flux injection rate and calculations (including records of the identity, composition, and weight of each addition of gaseous, liquid, or solid reactive flux), including records of any period the rate exceeds the compliant operating parameter value and corrective action taken. [40 CFR 63.1517(b)(5)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- v. For each continuous monitoring system, records required by 40 CFR 63.10(c). [40 CFR 63.1517(b)(6)]
- vi. For each affected source and emission unit subject to an emission standard in kg/Mg (lb/ton) of feed/charge, records of feed/charge (or throughput) weights for each operating cycle or time period used in the performance test. [40 CFR 63.1517(b)(7)]
- vii. Records of monthly inspections for proper unit labeling for each affected source and emission unit subject to labeling requirements. [40 CFR 63.1517(b)(13)]
- viii. Records of annual inspections of emission capture/collection and closed vent systems or, if the alternative to the annual flow rate measurements is used, records of differential pressure; fan RPM or fan motor amperage; static pressure measurements; or duct centerline velocity using a hotwire anemometer, ultrasonic flow meter, cross-duct pressure differential sensor, venture pressure differential monitoring or orifice plate equipped with an associated thermocouple, as appropriate. [40 CFR 63.1517(b)(14)]
- ix. Records for any approved alternative monitoring or test procedure. [40 CFR 63.1517(b)(15)]
- x. Current copy of all required plans, including any revisions, with records documenting conformance with the applicable plan, including: [40 CFR 63.1517(b)(16)]
 - 1. OM&M plan; and [40 CFR 63.1517(b)(16)(ii)]
 - 2. Site-specific secondary aluminum processing unit emission plan (if applicable). [40 CFR 63.1517(b)(16)(iii)]
- xi. For each secondary aluminum processing unit, records of total charge weight, or if the permittee chooses to comply on the basis of aluminum production, total aluminum produced for each 24-hour period and calculations of 3-day, 24-hour rolling average emissions. [40 CFR 63.1517(b)(17)]
- xii. For any failure to meet an applicable standard, the permittee shall maintain the following records: [40 CFR 63.1517(b)(18)]
 - 1. Records of the emission unit ID, monitor ID, pollutant or parameter monitored, beginning date and time of the event, end date and time of the event, cause of the deviation or exceedance and corrective action taken. [40 CFR 63.1517(b)(18)(i)]
 - 2. Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.1506(a)(5), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. [40 CFR 63.1517(b)(18)(ii)]
- xiii. For each period of startup or shutdown for which the permittee chooses to demonstrate compliance for an affected source, the permittee shall comply with 40 CFR 63.1517(b)(19)(i) or (ii). [40 CFR 63.1517(b)(19)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

1. To demonstrate compliance based on a feed/charge rate of zero, a flux rate of zero, and the use of electricity, propane, or natural gas as the sole sources of heating or the lack of heating, the permittee shall submit a semiannual report in accordance with 40 CFR 63.1516(b)(2)(vii) or maintain the following records: [40 CFR 63.1517(b)(19)(i)]
 - A. The date and time of each startup and shutdown; [40 CFR 63.1517(b)(19)(i)(A)]
 - B. The quantities of feed/charge and flux introduced during each startup and shutdown; and [40 CFR 63.1517(b)(19)(i)(B)]
 - C. The types of fuel used to heat the unit, or that no fuel was used, during startup or shutdown; or [40 CFR 63.1517(b)(19)(i)(C)]
2. To demonstrate compliance based on performance tests, the permittee shall maintain the following records: [40 CFR 63.1517(b)(19)(ii)]
 - A. The date and time of each startup and shutdown; [40 CFR 63.1517(b)(19)(ii)(A)]
 - B. The measured emissions in lb/hr or µg/hr or ng/hr; [40 CFR 63.1517(b)(19)(ii)(B)]
 - C. The measured feed/charge rate in tons/hr or Mg/hr from the most recent performance test associated with a production rate greater than zero, or the rated capacity of the affected source if no prior performance test data is available; and [40 CFR 63.1517(b)(19)(ii)(C)]
 - D. An explanation to support that such conditions are considered representative startup and shutdown operations. [40 CFR 63.1517(b)(19)(ii)(D)]
- e. The permittee shall maintain records of 12-month rolling total natural gas combustion (MMscf) for each of Emission Unit #'s 001 through 003 and 007 through 009. [401 KAR 52:020, Section 10]
- f. The permittee shall maintain records of 12-month rolling total aluminum charge processed for each of Emission Unit #'s 001 through 003 and 007 through 009. [401 KAR 52:020, Section 10]
- g. The permittee shall maintain a copy of the GCOP plan as well as any revisions. [401 KAR 52:020, Section 10]
- h. The permittee shall maintain records of any time that Emission Units #'s 001, 002, 003, 007, 008, or 009 were not operated according to the GCOP plan with a description of the situation and actions taken to remedy the issue. [401 KAR 52:020, Section 10]
- i. The permittee shall maintain records of the occurrence of testing, required to preclude 401 KAR 51:017, conducted on Emission Unit #'s 001 through 003 and 007 through 009

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

consistent with the requirement to complete a testing cycle on all Melting Furnace/Holding Furnace pairs and associated control devices prior to repeat testing on a given Melting Furnace/Holding Furnace pair and associated control device. [401 KAR 52:020, Section 10]

- j. The permittee shall maintain records of monthly and 12-month rolling total emissions for NO_x for each of Emission Unit #'s 001 through 003 and 007 through 009. [401 KAR 52:020, Section 10]
- k. The permittee shall maintain a copy of the scrap inspection program as well as any revisions. [401 KAR 52:020, Section 10]
- l. The permittee shall maintain records of the oil and coating content of scrap sampled, as determined by the scrap inspection program. [401 KAR 52:020, Section 10]
- m. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

6. Specific Reporting Requirements:

- a. The permittee shall submit the OM&M plan within 90 days after a successful initial performance test. The plan shall be accompanied by a written certification by the permittee that the OM&M plan satisfies all requirements of 40 CFR 63.1510(b) and is otherwise consistent with the requirements of 40 CFR 63, Subpart RRR. [40 CFR 63.1510(b)]
- b. For each SAPU, within the OM&M plan prepared in accordance with 40 CFR 63.1510(b), the permittee shall include the following information: [40 CFR 63.1510(s)(1)]
 - i. The identification of each emission unit in the secondary aluminum processing unit; [40 CFR 63.1510(s)(1)(i)]
 - ii. The specific control technology or pollution prevention measure to be used for each emission unit in the secondary aluminum processing unit and the date of its installation or application; [40 CFR 63.1510(s)(1)(ii)]
 - iii. The emission limit calculated for each secondary aluminum processing unit and performance test results with supporting calculations demonstrating initial compliance with each applicable emission limit; [40 CFR 63.1510(s)(1)(iii)]
 - iv. Information and data demonstrating compliance for each emission unit with all applicable design, equipment, work practice or operational standards of 40 CFR 63, Subpart RRR; and [40 CFR 63.1510(s)(1)(iv)]
 - v. The monitoring requirements applicable to each emission unit in a secondary aluminum processing unit and the monitoring procedures for daily calculation of the 3-day, 24-hour rolling average using the procedure in 40 CFR 63.1510(t). [40 CFR 63.1510(s)(1)(v)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- c. The SAPU compliance procedures within the OM&M plan may not contain any of the following provisions: [40 CFR 63.1510(s)(2)]
 - i. Any averaging among emissions of differing pollutants; [40 CFR 63.1510(s)(2)(i)]
 - ii. The inclusion of any affected sources other than emission units in a secondary aluminum processing unit; [40 CFR 63.1510(s)(2)(ii)]
 - iii. The inclusion of any emission unit while it is shutdown; or [40 CFR 63.1510(s)(2)(iii)]
 - iv. The inclusion of any periods of startup or shutdown in emission calculations. [40 CFR 63.1510(s)(2)(iv)]
- d. To revise the SAPU compliance provisions within the OM&M plan prior to the end of the permit term, the permittee shall submit a request to the Division containing the information required by 40 CFR 63.1510(s)(1) and obtain approval of the Division prior to implementing any revisions. [40 CFR 63.1510(s)(3)]
- e. Except as provided in 40 CFR 63.1510(u), the permittee shall calculate and record the 3-day, 24-hour rolling average emissions of PM, HCl, and D/F for each secondary aluminum processing unit on a daily basis. Refer to **Section D – Source Emission Limitations and Testing Requirements**. [40 CFR 63.1510(t)]
- f. As an alternative to the procedures of 40 CFR 63.1510(t), the permittee may demonstrate, through performance tests, that each individual emission unit within the secondary aluminum production unit is in compliance with the applicable emission limits for the emission unit. [40 CFR 63.1510(u)]
- g. If the permittee employs intermittent or noncontinuous lime addition to the lime-coated fabric filter, the permittee may apply to the Administrator for approval of an alternative method for monitoring the lime addition schedule and rate based on monitoring the weight of lime added per ton of feed/charge for each operating cycle or time period used in the performance test. An alternative monitoring method will not be approved unless the permittee provides assurance through data and information that the affected source will meet the relevant emission standards on a continuous basis. [40 CFR 63.1510(v)]
- h. If the permittee wishes to use an alternative monitoring method to demonstrate compliance with any emission standard in 40 CFR 63, Subpart RRR, other than those alternative monitoring methods which may be authorized pursuant to 40 CFR 63.1510(j)(5) and 40 CFR 63.1510(v), the permittee may submit an application to the Administrator. Any such application will be processed according to the criteria and procedures set forth in 40 CFR 63.1510(w)(1) through (6). [40 CFR 63.1510(w)]
- i. The Administrator will not approve averaging periods other than those specified in 40 CFR 63.1510. [40 CFR 63.1510(w)(1)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- ii. The permittee shall continue to use the original monitoring requirement until necessary data are submitted and approval is received to use another monitoring procedure [40 CFR 63.1510(w)(2)].
- iii. The permittee shall submit the application for approval of alternate monitoring methods no later than the notification of the performance test. The application shall contain the information specified in 40 CFR 63.1510(w)(3)(i) through (iii) [40 CFR 63.1510(w)(3)].
 - 1. Data or information justifying the request, such as the technical or economic infeasibility, or the impracticality of using the required approach; [40 CFR 63.1510(w)(3)(i)]
 - 2. A description of the proposed alternative monitoring requirements, including the operating parameters to be monitored, the monitoring approach and technique, and how the limit is to be calculated; and [40 CFR 63.1510(w)(3)(ii)]
 - 3. Data and information documenting that the alternative monitoring requirement(s) would provide equivalent or better assurance of compliance with the relevant emission standard(s). [40 CFR 63.1510(w)(3)(iii)]
- iv. The Administrator will not approve an alternative monitoring application unless it would provide equivalent or better assurance of compliance with the relevant emission standard(s). Before disapproving any alternate monitoring application, the Administrator will provide: [40 CFR 63.1510(w)(4)]
 - 1. Notice of the information and findings upon which the intended disapproval is based; and [40 CFR 63.1510(w)(4)(i)]
 - 2. Notice of opportunity for the permittee to present additional supporting information before final action is taken on the application. This notice will specify how much additional time is allowed for the permittee to provide additional supporting information. [40 CFR 63.1510(w)(4)(ii)]
- v. The permittee is responsible for submitting any supporting information in a timely manner to enable the Administrator to consider the application prior to the performance test. Neither submittal of an application nor the Administrator's failure to approve or disapprove the application relieves the permittee of the responsibility to comply with any provisions of 40 CFR 63, Subpart RRR. [40 CFR 63.1510(w)(5)]
- vi. The Administrator may decide at any time, on a case-by-case basis, that additional or alternative operating limits, or alternative approaches to establishing operating limits, are necessary to demonstrate compliance with the emission standards of 40 CFR 63, Subpart RRR. [40 CFR 63.1510(w)(6)]
- i. The permittee shall submit a notification of compliance status report within 90 days after conducting the initial performance test required by 40 CFR 63.1511(b). The notification

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

shall be signed by the responsible official who shall certify its accuracy. A complete notification of compliance status shall include the information specified in 40 CFR 63.1515(a)(1) through (10). The required information may be submitted in an operating permit application, in an amendment to an operating permit application, in a separate submittal, or in any combination. If the permittee submits the information specified in 40 CFR 63.1515 at different times or in different submittals, later submittals may refer to earlier submittals instead of duplicating and resubmitting the information previously submitted. A complete notification of compliance status report shall include: [40 CFR 63.1512(q), 40 CFR 63.1512(r), 40 CFR 63.1512(s), 40 CFR 63.1515(b)]

- i. All information required in 40 CFR 63.9(h). The permittee shall provide a complete performance test report for each affected source and emission unit for which a performance test is required. A complete performance test report includes all data, associated measurements, and calculations (including visible emission and opacity tests). [40 CFR 63.1515(b)(1)]
- ii. The approved site-specific test plan and performance evaluation test results for each continuous monitoring system (including a continuous emission or opacity monitoring system). [40 CFR 63.1515(b)(2)]
- iii. Unit labeling as described in 40 CFR 63.1506(b), including process type of furnace classification and operating requirements. [40 CFR 63.1515(b)(3)]
- iv. The compliant operating parameter value or range established for each affected source or emission unit with supporting documentation and a description of the procedure used to establish the value (e.g., lime injection rate, total reactive chlorine flux injection rate, fabric filter inlet temperature), including the operating cycle or time period used in the performance test. [40 CFR 63.1515(b)(4)]
- v. Design information and analysis, with supporting documentation, demonstrating conformance with the requirements for capture/collection systems in 40 CFR 63.1506(c). [40 CFR 63.1515(b)(5)]
- vi. If applicable, analysis and supporting documentation demonstrating conformance with EPA guidance and specifications for bag leak detection systems in 40 CFR 63.1510(f). [40 CFR 63.1515(b)(6)]
- vii. The OM&M plan. [40 CFR 63.1515(b)(9)]
- j. The permittee shall submit semiannual reports according to the requirements in 40 CFR 63.10(e)(3). Except, the permittee shall submit the semiannual reports within 60 days after the end of each 6-month period instead of within 30 days after the calendar half as specified in 40 CFR 63.10(e)(3)(v). When no deviation of parameters have occurred, the permittee shall submit a report stating that no excess emissions occurred during the reporting period. [40 CFR 63.1516(b)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- i. A report shall be submitted if any of these conditions occur during a 6-month reporting period: [40 CFR 63.1516(b)(1)]
 1. The corrective action specified in the OM&M plan for a bag leak detection system alarm was not initiated within 1 hour. [40 CFR 63.1516(b)(1)(i)]
 2. The corrective action specified in the OM&M plan for a continuous opacity monitoring deviation was not initiated within 1 hour. [40 CFR 63.1516(b)(1)(ii)]
 3. An excursion of a compliant process or operating parameter value or range (e.g., lime injection rate or screw feeder setting, total reactive chlorine flux injection rate, fabric filter inlet temperature, definition of acceptable scrap, or other approved operating parameter). [40 CFR 63.1516(b)(1)(iv)]
 4. An affected source (including an emission unit in a secondary aluminum processing unit) was not operated according to the requirements of 40 CFR 63, Subpart RRR. [40 CFR 63.1516(b)(1)(vi)]
 5. A deviation from the 3-day, 24-hour rolling average emission limit for a secondary aluminum processing unit. [40 CFR 63.1516(b)(1)(vii)]
- ii. For each affected source choosing to demonstrate compliance during periods of startup and shutdown in accordance with 40 CFR 63.1513(f)(1) the report shall contain a certification stating: "During each startup and shutdown, no flux and no feed/charge were added to the emission unit, and electricity, propane or natural gas were used as the sole source of heat or the emission unit was not heated." [40 CFR 63.1516(b)(2) and 40 CFR 63.1516(b)(2)(vii)]
- iii. The permittee shall submit the results of any performance test conducted during the reporting period, including one complete report documenting test methods and procedures, process operation, and monitoring parameter ranges or values for each test method used for a particular type of emission point tested. [40 CFR 63.1516(b)(3)]
 1. Within 60 days after the date of completing each performance test (as defined in 40 CFR 63.2) required by 40 CFR 63, Subpart RRR, the permittee shall submit the results of the performance tests, including any associated fuel analyses, following the procedure specified in either 40 CFR 63.1516(b)(3)(i)(A) or (B). [40 CFR 63.1516(b)(3)(i)]
 - A. For data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT Web site (https://www3.epa.gov/ttn/chief/ert/ert_info.html), the permittee shall submit the results of the performance test to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). (CEDRI can be accessed through the EPA's Central Data Exchange (CDS) (<https://cdx.epa.gov/>.) Performance test data shall be submitted in the file format generated through the use of the EPA's ERT Web site. If the permittee claims that some of the performance test

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

information being submitted is confidential business information (CBI), the permittee shall submit a complete file generated through the use of the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT Web site, including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage media to the EPA. The electronic media shall be clearly marked as CBI and mailed to U.S. EPA/OAQPS/CORE CBI Office, Attention: Group Leader, Measurement Policy Group, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT or alternate file with the CBI omitted shall be submitted to the EPA via the EPA's CDX as described earlier in this paragraph. [40 CFR 63.1516(b)(3)(i)(A)]

- B. For data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT Web site, the permittee shall submit the results of the performance test to the Administrator at the appropriate address listed in 40 CFR 63.13. [40 CFR 63.1516(b)(3)(i)(B)]
- iv. A malfunction report that is required under 40 CFR 63.1516(d) shall be submitted simultaneously with the semiannual excess emissions/summary report required by 40 CFR 63.1516(b). [40 CFR 63.1516(b)(4)]
- k. For the purpose of annual certifications of compliance required by 40 CFR Part 70 or 71, the permittee shall certify continuing compliance based upon, but not limited to, the following conditions: [40 CFR 63.1516(c)]
 - i. Any period of excess emissions, as defined in 40 CFR 63.1516(b)(1), that occurred during the year were reported as required by 40 CFR 63, Subpart RRR; and [40 CFR 63.1516(c)(1)]
 - ii. All monitoring, recordkeeping, and reporting requirements were met during the year. [40 CFR 63.1516(c)(2)]
- l. If there was a malfunction during the reporting period, the permittee shall submit a report that includes the emission unit ID, monitor ID, pollutant or parameter monitored, beginning date and time of the event, end date and time of the event, cause of the deviation or exceedance and corrective action taken for each malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report shall include a list of the affected source or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emission, including, but not limited to, product-loss calculations, mass balance calculations, measurements when available, or engineering judgement based on known process parameters. The report shall also include a description of action taken by the permittee during a malfunction of an affected source to minimize emission in accordance with 40 CFR 63.1506(a)(5). [40 CFR 63.1516(d)]
- m. All reports required by 40 CFR 63, Subpart RRR not subject to the requirements in 40 CFR 63.1516(b) shall be sent to the Administrator at the appropriate address listed in 40 CFR

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

63.13. If acceptable to both the Administrator and the permittee, these reports may be submitted on electronic media. The Administrator retains the right to require submittal of reports subject to 40 CFR 63.1516(b) in paper format. [40 CFR 63.1516(e)]

- n. The permittee shall submit, concurrently with results from performance testing conducted to preclude 401 KAR 51:017, an evaluation of the adequacy of permitted throughput limits taken to preclude 401 KAR 51:017 based upon the results from performance testing conducted to preclude 401 KAR 51:017. [401 KAR 52:020, Section 10]
- o. The permittee shall include, in the semi-annual report, a confirmatory statement that: [401 KAR 52:020, Section 10]
 - i. “Performance testing conducted for PM, PM₁₀, PM_{2.5} and CO yielded results demonstrating that permitted throughput limits are adequate for the project authorized by V-18-001 to preclude 401 KAR 51:017.”;
 - ii. “Performance testing conducted for PM, PM₁₀, PM_{2.5} and CO yielded results demonstrating that permitted throughput limits are not adequate for the project authorized by V-18-001 to preclude 401 KAR 51:017.”; or
 - iii. “No performance testing for PM, PM₁₀, PM_{2.5} or CO was conducted during the reporting period.”
- p. The permittee shall include, in the semi-annual report, any time that Emission Unit #'s 001, 002, 003, 007, 008, or 009 are not operated according to the GCOP plan with a description of the situation and actions taken to remedy the issue. [401 KAR 52:020, Section 10]
- q. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

7. Specific Control Equipment Operating Conditions:

- a. The lime-injected filter house associated with Emission Unit #'s 001 through 003 and 007 through 009 shall be operated at all times the respective Emission Unit is in operation. [To preclude 401 KAR 51:017]
- b. Records regarding the maintenance of the air pollution control equipment shall be maintained. [401 KAR 52:020, Section 10]
- c. Refer to **Section E – Source Control Equipment Requirements** for additional requirements.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Group B:

In-Line Fluxers

Emission Unit #	Unit Name	Maximum Aluminum Processing Capacity (ton/hr)	Control Device	Construction Commenced
Process Area 01: Melting & Casting				
013	In-Line Degasser #1	21.70	Lime-Injected Filter House #1	May 2018
014	In-Line Degasser #2	21.70	Lime-Injected Filter House #2	May 2018
015	In-Line Degasser #3	21.70	Lime-Injected Filter House #3	May 2018

APPLICABLE REGULATIONS:

401 KAR 59:010, *New process operations*

401 KAR 63:002, Section 2(4)(ccc), *40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR), National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production*

PRECLUDED REGULATIONS:

401 KAR 51:017, *Prevention of significant deterioration of air quality for PM, PM₁₀, and PM_{2.5}*

1. Operating Limitations:

- a. At all times, the permittee shall operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.1506(a)(5)]
- b. The permittee shall provide and maintain easily visible labels posted at each in-line fluxer that identifies the applicable emission limits and means of compliance, including: [40 CFR 63.1506(b)]
 - i. The type of affected source or emission unit (e.g., in-line fluxer). [40 CFR 63.1506(b)(1)]
 - ii. The applicable operational standard(s) and control method(s) (work practice or control device). This includes, but is not limited to, the type of charge to be used for a furnace (e.g., clean scrap only, all scrap, etc.), flux materials and additional practices, and the applicable operating parameter ranges and requirements as incorporated in the operation, maintenance, and monitoring (OM&M) plan. [40 CFR 63.1506(b)(2)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**Compliance Demonstration Method:**

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (d)**, **5. Specific Recordkeeping Requirements (d)(vi)**, and **6. Specific Reporting Requirements (i)(iii)**.

- c. The permittee shall: [40 CFR 63.1506(c)]
 - i. Design and install a system for the capture and collection of emissions to meet the engineering standards for minimum exhaust rates or facial inlet velocities as contained in the ACGIH Guidelines (incorporated by reference, see 40 CFR 63.14); [40 CFR 63.1506(c)(1)]
 - ii. Vent captured emissions through a closed system, except that dilution air may be added to emission streams for the purpose of controlling temperature at the inlet to a fabric filter; and [40 CFR 63.1506(c)(2)]
 - iii. Operate each capture/collection system according to the procedures and requirements in the OM&M plan. [40 CFR 63.1506(c)(3)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (e)**, **5. Specific Recordkeeping Requirements (d)(vii)**, and **6. Specific Reporting Requirements (i)(v)**.

- d. The permittee shall: [40 CFR 63.1506(d)]
 - i. Except as provided in 40 CFR 63.1506(d)(3), install and operate a device that measures and records or otherwise determine the weight of feed/charge (or throughput) for each operating cycle or time period used in the performance test; and [40 CFR 63.1506(d)(1)]
 - ii. Operate each weight measurement system or other weight determination procedure in accordance with the OM&M plan [40 CFR 63.1506(d)(2)]
 - iii. The permittee may choose to measure and record aluminum production weight from an affected source or emission unit rather than feed/charge weight to an affected source or emission unit, provided that: [40 CFR 63.1506(d)(3)]
 - 1. The aluminum production weight, rather than fee/charge weight is measured and recorded for all emission units within a SAPU; and [40 CFR 63.1506(d)(3)(i)]
 - 2. All calculations to demonstrate compliance with the emission limits for SAPUs are based on aluminum production weight rather than feed/charge weight. [40 CFR 63.1506(d)(3)(ii)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (f)**, **5. Specific Recordkeeping Requirements (d)(v)**, and **(d)(x)**.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- e. If a bag leak detection system is used to meet the monitoring requirements in 40 CFR 63.1510, the permittee shall: [40 CFR 63.1506(k)(1)]
 - i. Initiate corrective action within 1 hour of a bag leak detection system alarm and complete the corrective action procedures in accordance with the OM&M plan. [40 CFR 63.1506(k)(1)(i)]
 - ii. Operate each fabric filter system such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during a 6-month block reporting period. In calculating this operating time fraction, if inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm shall be counted as a minimum of 1 hour. If the permittee takes longer than 1 hour to initiate corrective action, the alarm time shall be counted as the actual amount of time taken by the permittee to initiate corrective action. [40 CFR 63.1506(k)(1)(ii)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (g)(i)**, **5. Specific Recordkeeping Requirements (d)(i)(1)**, **6. Specific Reporting Requirements (i)(vi)**, and **(j)(i)(1)**.

- f. If a continuous opacity monitoring system is used to meet the monitoring requirements in 40 CFR 63.1510, the permittee shall initiate corrective action within 1 hour of any 6-minute average reading of 5 percent or more opacity and complete the corrective action procedures in accordance with the OM&M plan. [40 CFR 63.1506(k)(2)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (g)(ii)**, **5. Specific Recordkeeping Requirements (d)(i)(2)**, and **6. Specific Reporting Requirements (j)(i)(2)**.

- g. The permittee shall, for a continuous injection system, maintain free-flowing lime in the hopper to the feed device at all times and maintain the lime feeder setting at or above the level established during the performance test. [40 CFR 63.1506(k)(3)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (i)**, **5. Specific Recordkeeping Requirements (d)(ii)**, **6. Specific Reporting Requirements (i)(iv)**, and **(j)(i)(3)**.

- h. The permittee shall maintain the total reactive chlorine flux injection rate for each operating cycle or time period used in the performance test at or below the average rate established during the performance test. [40 CFR 63.1506(k)(4)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**Compliance Demonstration Method:**

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (j)**, **5. Specific Recordkeeping Requirements (d)(iii)**, **6. Specific Reporting Requirements (i)(iv)**, and **(j)(i)(3)**.

- i. When a process parameter or add-on air pollution control device operating parameter deviates from the value or range established during the performance test and incorporated in the OM&M plan, the permittee shall initiate correction action. Corrective action shall restore operation of the affected source or emission unit (including the process or control device) to its normal or usual mode of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. Corrective actions taken shall include follow-up actions necessary to return the process or control device parameter level(s) to the value or range of values established during the performance test and steps to prevent the likely recurrence of the cause of a deviation. [40 CFR 63.1506(p)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements (d)(xi)**, **6. Specific Reporting Requirements (j)**, **(k)**, and **(l)**.

- j. The permittee shall prepare and implement for each affected source and emission unit, a written OM&M plan. The permittee shall submit the OM&M plan to the Division within 90 days after a successful initial performance test under 40 CFR 63.1511(b). The plan shall be accompanied by a written certification by the permittee that the OM&M plan satisfies all requirements of 40 CFR 63.1510 and is otherwise consistent with the requirements of 40 CFR 63, Subpart RRR. The permittee shall comply with all of the provisions of the OM&M plan as submitted to the Division, unless and until the plan is revised in accordance with the procedures in 40 CFR 63.1510(b). If the Division determines at any time after receipt of the OM&M plan that any revisions of the plan are necessary to satisfy the requirements of 40 CFR 63.1510 or 40 CFR 63, Subpart RRR, the permittee shall promptly make all necessary revisions and resubmit the revised plan. If the permittee determines that any other revisions of the OM&M plan are necessary, such revisions will not become effective until the permittee submits a description of the changes and a revised plan incorporating them to the Division. Each plan shall contain the following information: [40 CFR 63.1510(b)]
 - i. Process and control device parameters to be monitored to determine compliance, along with established operating levels or ranges, as applicable, for each process and control device. [40 CFR 63.1510(b)(1)]
 - ii. A monitoring schedule for each affected source and emission unit. [40 CFR 63.1510(b)(2)]
 - iii. Procedures for the proper operation and maintenance of each process unit and add-on control device used to meet the applicable emission limits or standards in 40 CFR 63.1505. [40 CFR 63.1510(b)(3)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- iv. Procedures for the proper operation and maintenance of monitoring devices or systems used to determine compliance, including: [40 CFR 63.1510(b)(4)]
 - 1. Calibration and certification of accuracy of each monitoring device, at least once every 6 months, according to the manufacturer's instructions; and [40 CFR 63.1510(b)(4)(i)]
 - 2. Procedures for the quality control and quality assurance of continuous emission or opacity monitoring systems as required by the general provisions in 40 CFR 63, Subpart A. [40 CFR 63.1510(b)(4)(ii)]
- v. Procedures for monitoring process and control device parameters, including lime injection rates, and if applicable, the procedure to be used for determining charge/feed (or throughput) weight if a measurement device is not used. [40 CFR 63.1510(b)(5)]
- vi. Corrective actions to be taken when process or operating parameters or add-on control device parameters deviate from the value or range established in 40 CFR 63.1510(b)(1), including: [40 CFR 63.1510(b)(6)]
 - 1. Procedures to determine and record the cause of any deviation or excursion, and the time the deviation or excursion began and ended; and [40 CFR 63.1510(b)(6)(i)]
 - 2. Procedures for recording the corrective action taken, the time corrective action was initiated, and the time/date corrective action was completed. [40 CFR 63.1510(b)(6)(ii)]
- vii. A maintenance schedule for each process and control device that is consistent with the manufacturer's instructions and recommendations for routine and long-term maintenance. [40 CFR 63.1510(b)(7)]
- viii. Documentation of the work practice and pollution prevention measures used to achieve compliance with the applicable emission limits. [40 CFR 63.1510(b)(8)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements (d)(ix)**, and **6. Specific Reporting Requirements (a)**.

- k. The permittee shall limit molten aluminum processed in each of Emission Unit #'s 013 through 015 to meet all of the following requirements: [To preclude 401 KAR 51:017]
 - i. 162,316 tons per year per unit on a 12-month rolling total basis; and
 - ii. The permittee shall evaluate the adequacy of permitted throughput limits taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 for PM, PM₁₀, and PM_{2.5} based upon the most recent performance test results to verify and establish emission factors. If the permitted throughput limits are not adequate to meet the emission limitations in **Section D – Source Emission Limitations and Testing Requirements**

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

and preclude 401 KAR 51:017, the permittee shall submit an application within 180 days of completion of the test for revision of throughput limits accordingly.

Compliance Demonstration Method:

Compliance shall be demonstrated according to **3. Testing Requirements** (s), (t), **4. Specific Monitoring Requirements** (b), **5. Specific Recordkeeping Requirements** (e), **6. Specific Reporting Requirements** (n), and (o).

1. Refer to **Section D – Source Emission Limitations and Testing Requirements** for reactive flux usage limitations.

2. Emission Limitations:

- a. The permittee shall not cause, suffer, allow, or permit any continuous emission into the open air from a control device or stack associated with any affected facility which is equal to or greater than 20 percent opacity. [401 KAR 59:010, Section 3(1)(a)]

Compliance Demonstration Method:

Compliance with the opacity standard shall be demonstrated according to **4. Monitoring Requirements** (a).

- b. For emissions from a control device or stack, the permittee shall not cause, suffer, allow or permit the emission into the open air of PM from any affected facility which is in excess of the quantity specified in Appendix A to 401 KAR 59:010. [401 KAR 59:010, Section 3(2)]

- i. For process weight rates of 0.50 ton/hr or less: 2.34 lb/hr

- ii. For process weight rates up to 30.00 tons/hr: $E = 3.59 * P^{0.62}$

Where:

E = the allowable PM emissions rate (pounds/hour)

P = the process weight rate (tons/hour)

Compliance Demonstration Method:

Compliance shall be demonstrated according to **3. Testing Requirements** (s), (t), **4. Specific Monitoring Requirements** (b), and **5. Specific Recordkeeping Requirements** (b).

- c. The permittee may limit emissions from the units in Emission Group B on an individual basis or as part of a SAPU, included in the OM&M plan. On an individual basis, the permittee shall not allow the emissions from the furnaces in Emission Group B to exceed the following: [40 CFR 63.1505(j) and (k)]
 - i. HCl emissions shall not exceed 0.04 lb/ton (0.02 kg/Mg) of feed/charge [40 CFR 63.1505(j)(1)].

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Compliance Demonstration Method:

Compliance shall be demonstrated according to **3. Testing Requirements** and using 40 CFR 63.1513 Equation 7: [40 CFR 63.1513(b)(1)]

$$E = \frac{C \times Q \times K_1}{P}$$

Where:

- E = Emission rate of HCl, in lb/ton (kg/Mg) of feed;
- C = Concentration of HCl, in gr/dscf (g/dscm);
- Q = Volumetric flow rate of exhaust gases, in dscf/hr (dscm/hr)
- K₁ = Conversion factor, 1 lb/7,000 gr (1 kg/1,000 g); and
- P = Production rate, in ton/hr (Mg/hr).

- ii. PM emissions shall not exceed 0.01 lb/ton (0.005 kg/Mg) of feed/charge [40 CFR 63.1505(j)(2)].

Compliance Demonstration Method:

Compliance shall be demonstrated according to **3. Testing Requirements** and using 40 CFR 63.1513 Equation 7: [40 CFR 63.1513(b)(1)]

$$E = \frac{C \times Q \times K_1}{P}$$

Where:

- E = Emission rate of PM, in lb/ton (kg/Mg) of feed;
- C = Concentration of PM, in gr/dscf (g/dscm);
- Q = Volumetric flow rate of exhaust gases, in dscf/hr (dscm/hr)
- K₁ = Conversion factor, 1 lb/7,000 gr (1 kg/1,000 g); and
- P = Production rate, in ton/hr (Mg/hr).

- d. If a continuous opacity monitor (COM) is chosen as the monitoring option, the permittee shall not discharge or cause to be discharged to the atmosphere visible emissions in excess of 10 percent opacity from any PM add-on air pollution control device used to control emissions from the in-line fluxer. [40 CFR 63.1505(j)(4)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (g)(ii)**, **5. Specific Recordkeeping Requirements (d)(i)(2)**, and **6. Specific Reporting Requirements (k)**.

- e. The permittee may determine the emission standards for a SAPU by applying the in-line fluxer limits on the basis of the aluminum production weight in each in-line fluxer, rather than on the basis of feed/charge. [40 CFR 63.1505(j)(5)]
- f. Refer to **Section D – Source Emission Limitations and Testing Requirements** for SAPU requirements from 40 CFR 63, Subpart RRR and source-wide emission limitations to preclude 401 KAR 51:017.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**3. Testing Requirements:**

- a. Except as provided in 401 KAR 50:045, performance tests used to demonstrate compliance with 401 KAR 59:010, Section 3 shall be conducted according to the following methods. Methods are filed by reference in 401 KAR 50:015. [401 KAR 59:010, Section 4]
 - i. For the emission rates of particulate matter and the associated moisture content, U.S. EPA Reference Method 5 shall be used. [401 KAR 59:010, Section 4(1)]
 - ii. U.S. EPA Reference Method 1 for sample and velocity traverses. [401 KAR 59:010, Section 4(2)]
 - iii. U.S. EPA Reference Method 2 for velocity and volumetric flow rate. [401 KAR 59:010, Section 4(3)]
 - iv. U.S. EPA Reference Method 3 for gas analysis. [401 KAR 59:010, Section 4(4)]
 - v. U.S. EPA Reference Method 9 for opacity of continuous emissions. [401 KAR 59:010, Section 4(5)]
 - vi. For U.S. EPA Reference Method 5, U.S. EPA Reference Method 1 shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall be 0.85 dscm (thirty (30) dscf) except that smaller sampling time or volumes, when necessitated by process variables or other factors, may be approved by the cabinet. [401 KAR 59:010, Section 4(7)]
- b. Performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted as required by the Division in accordance with 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1.
- c. Prior to conducting any performance test required by 40 CFR 63, Subpart RRR, the permittee shall prepare a site-specific test plan which satisfies all of the rule requirements, and shall obtain approval of the plan pursuant to the procedures set forth in 40 CFR 63.7. Performance tests shall be conducted under such conditions as the Administrator specifies to the permittee based on representative performance of the affected source for the period being tested. Upon request, the permittee shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests. [40 CFR 63.1511(a)]
- d. Following approval of the site-specific test plan, the permittee shall demonstrate initial compliance with each applicable emission, equipment, work practice, or operational standard for each affected source and emission unit, and report the results in the notification of compliance status report as described in 40 CFR 63.1515(b). The permittee shall conduct the initial performance test within 180 days after startup. Except for the date by which the performance test shall be conducted, the permittee shall conduct each performance test in accordance with the requirements and procedures set forth in in 40 CFR 63.7(c). [40 CFR 63.1511(b)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- i. The performance tests shall be conducted under representative conditions expected to produce the highest level of HAP emissions in the units of the emission standard for the HAP (considering the extent of feed/charge contamination, reactive flux addition rate, and feed/charge rate). If a single test condition is not expected to produce the highest level of emissions for all HAP, testing under two or more sets of conditions (for example high contamination at low feed/charge rate, and low contamination at high feed/charge rate) may be required. Any subsequent performance test for the purposes of establishing new or revised parametric limits shall be allowed upon pre-approval from the Division. These new parametric settings shall be used to demonstrate compliance for the period being tested. [40 CFR 63.1511(b)(1)]
- ii. Each performance test for a continuous process shall consist of 3 separate runs; pollutant sampling for each run shall be conducted for the time period specified in the applicable method or, in the absence of a specific time period in the test method, for a minimum of three hours. [40 CFR 63.1511(b)(2)]
- iii. Each performance test for a batch process shall consist of three separate runs; pollutant sampling for each run shall be conducted over the entire process operating cycle. Additionally, for batch processes where the length of the process operating cycle is not known in advance, and where isokinetic sampling shall be conducted based on the procedures in U.S. EPA Reference Method 5 in 40 CFR Part 60, Appendix A, use the following procedure to ensure that sampling is conducted over the entire process operating cycle: [40 CFR 63.1511(b)(3)]
 1. Choose a minimum operating cycle length and begin sampling assuming this minimum length will be the run time (e.g., if the process operating cycle is known to last from four to six hours, then assume a sampling time of four hours and divide the sampling time evenly between the required number of traverse points); [40 CFR 63.1511(b)(3)(i)]
 2. After each traverse point has been sampled once, begin sampling each point again for the same time per point, in the reverse order, until the operating cycle is complete. All traverse points as required by U.S. EPA Reference Method 1 of 40 CFR Part 60, Appendix A, shall be sampled at least once during each test run; [40 CFR 63.1511(b)(3)(ii)]
 3. In order to distribute the sampling time most evenly over all the traverse points, do not perform all runs using the same sampling point order (e.g., if there are four ports and sampling for run 1 began in port 1, then sampling for run 2 could begin in port 4 and continue in reverse order.). [40 CFR 63.1511(b)(3)(iii)]
- iv. Where multiple affected sources or emission units are exhausted through a common stack, pollutant sampling for each run shall be conducted over a period of time during which all affected sources or emission units complete at least 1 entire process operating cycle or for 24 hours, whichever is shorter. [40 CFR 63.1511(b)(4)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- v. Initial compliance with an applicable emission limit or standard is demonstrated if the average of three runs conducted during the performance test is less than or equal to the applicable emission limit or standard. [40 CFR 63.1511(b)(5)]
- vi. Apply 40 CFR 63.1511(b)(1) through (5) for each pollutant separately if a different production rate, charge material or, if applicable, reactive fluxing rate would apply and thereby result in a higher expected emissions rate for that pollutant. [40 CFR 63.1511(b)(6)]
- vii. The permittee shall not conduct performance tests during periods of malfunction. [40 CFR 63.1511(b)(7)]
- e. The permittee shall use the following methods in 40 CFR Part 60, Appendix A to determine compliance with the applicable emission limits or standards in 40 CFR 63, Subpart RRR: [40 CFR 63.1511(c)]
 - i. U.S. EPA Reference Method 1 for sample and velocity traverses. [40 CFR 63.1511(c)(1)]
 - ii. U.S. EPA Reference Method 2 for velocity and volumetric flow rate. [40 CFR 63.1511(c)(2)]
 - iii. U.S. EPA Reference Method 3 for gas analysis. [40 CFR 63.1511(c)(3)]
 - iv. U.S. EPA Reference Method 4 for moisture content of the stack gas. [40 CFR 63.1511(c)(4)]
 - v. U.S. EPA Reference Method 5 for the concentration of PM. [40 CFR 63.1511(c)(5)]
 - vi. U.S. EPA Reference Method 9 for visible emission observations. [40 CFR 63.1511(c)(6)]
 - vii. U.S. EPA Reference Method 23 for the concentration of D/F. [40 CFR 63.1511(c)(7)]
 - viii. U.S. EPA Reference Method 25A for the concentration of THC, as propane. [40 CFR 63.1511(c)(8)]
 - ix. U.S. EPA Reference Method 26A for the concentration of HCl and HF. U.S. EPA Reference Method 26 may also be used, except at sources where entrained water droplets are present in the emission stream. Where a lime-injected fabric filter is used as the control device to comply with the 90 percent reduction standard, the permittee shall measure the fabric filter inlet concentration of HCl at a point before lime is introduced to the system. [40 CFR 63.1511(c)(9)]
- f. The permittee may use alternative test methods as provided in 40 CFR 63.1511(d)(1) through (3) [40 CFR 63.1511(d)].

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- i. The permittee may use test method ASTM D7520-13 as an alternative to U.S. EPA Reference Method 9 subject to conditions described in 40 CFR 63.1510(f)(4). [40 CFR 63.1511(d)(1)]
- ii. In lieu of conducting the annual flow rate measurements using U.S. EPA Reference Methods 1 and 2, the permittee may use U.S. EPA Reference Method 204 in 40 CFR Part 51, Appendix M to conduct annual verification of a permanent total enclosure for the affected source/emission unit. [40 CFR 63.1511(d)(2)]
- iii. The permittee may use an alternative test method approved by the Administrator. [40 CFR 63.1511(d)(3)]
- g. The permittee shall conduct a performance test every 5 years following the initial performance test. [40 CFR 63.1511(e)]
- h. The permittee shall establish a minimum or maximum operating parameter value, or an operating parameter range for each parameter to be monitored as required by 40 CFR 63.1510 that ensures compliance with the applicable emission limit or standard. To establish the minimum or maximum value or range, the permittee shall use the appropriate procedures in 40 CFR 63.1511 and submit the information required by 40 CFR 63.1515(b)(4) in the notification of compliance status report. The permittee may use existing data in addition to the results of performance test to establish operating parameter values for compliance monitoring provided each of the following conditions are met to the satisfaction of the Division: [40 CFR 63.1511(g)]
 - i. The complete emission test report(s) used as the basis of the parameter(s) is submitted. [40 CFR 63.1511(g)(1)]
 - ii. The same test methods and procedures as required by 40 CFR 63, Subpart RRR were used in the test. [40 CFR 63.1511(g)(2)]
 - iii. The permittee certifies that no design or work practice changes have been made to the source, process, or emission control equipment since the time of the report. [40 CFR 63.1511(g)(3)]
 - iv. All process and control equipment operating parameters required to be monitored were monitored as required in 40 CFR 63, Subpart RRR and documented in the test report. [40 CFR 63.1511(g)(4)]
 - v. If the permittee wants to conduct a new performance test and establish different operating parameter values, they shall submit a revised site specific test plan and receive approval in accordance with 40 CFR 63.1511(a). In addition, if the permittee wants to use existing data in addition to the results of the new performance test to establish operating parameter values, the shall meet the requirements in 40 CFR 63.1511(g)(1) through (4). [40 CFR 63.1511(g)(5)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- i. When group 1 furnaces and/or in-line fluxers are included in a single existing SAPU or new SAPU, and the emissions from more than one emission unit within that existing SAPU or new SAPU are manifolded to a single control device, compliance for all units within the SAPU is demonstrated if the total measured emissions from all controlled and uncontrolled units in the SAPU do not exceed the emission limits calculated for that SAPU based on the applicable equation in 40 CFR 63.1505(k). [40 CFR 63.1511(h)]
- j. With the prior approval of the Division, the permittee may do combined performance testing of two or more individual affected sources or emission units which are not included in a single existing SAPU or new SAPU, but whose emissions are manifolded to a single control device. Any such performance testing of commonly-ducted units shall satisfy the following basic requirements: [40 CFR 63.1511(i)]
 - i. All testing shall be designed to verify that each affected source or emission unit individually satisfies all emission requirements applicable to that affected source or emission unit; [40 CFR 63.1511(i)(1)]
 - ii. All emissions of pollutants subject to a standard shall be tested at the outlet from each individual affected source or emission unit while operating under the highest load or capacity reasonably expected to occur, and prior to the point that the emissions are manifolded together with emissions from other affected sources or emission units; [40 CFR 63.1511(i)(2)]
 - iii. The combined emissions from all affected sources and emission units which are manifolded to a single emission control device shall be tested at the outlet of the emission control device; [40 CFR 63.1511(i)(3)]
 - iv. All tests at the outlet of the emission control device shall be conducted with all affected sources and emission units whose emissions are manifolded to the control device operating simultaneously under the highest load or capacity reasonably expected to occur; and [40 CFR 63.1511(i)(4)]
 - v. For purposes of demonstrating compliance of a commonly-ducted unit with any emission limit for a particular type of pollutant, the emission of that pollutant by the individual unit shall be presumed to be controlled by the same percentage as total emissions of that pollutant from all commonly-ducted units are controlled at the outlet of the emission control device. [40 CFR 63.1511(i)(5)]
- k. The permittee shall conduct a performance test to measure emissions of HCl and PM or otherwise demonstrate compliance in accordance with 40 CFR 63.1512(h)(2). Emissions shall be measured at the outlet of the control device. [40 CFR 63.1512(h)(1)]
- l. The permittee may choose to limit the rate at which reactive flux is added to an in-line fluxer and assume, for the purposes of demonstrating compliance with the SAPU emission limit, that all chlorine in the reactive flux added to the in-line fluxer is emitted as HCl. Under these circumstances, the permittee is not required to conduct an emission test for HCl. [40 CFR 63.1512(h)(2)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- m. The permittee shall conduct performance test as described in 40 CFR 63.1512(j)(1) through (3). The results of the performance tests are used to establish emission rates in lb/ton of feed/charge for PM, HCl, and HF and μg TEQ/Mg of feed charge for D/F emissions from each emission unit. These emission rates are used for compliance monitoring in the calculation of the 3-day, 24-hour rolling average emission rates using the equation in 40 CFR 63.1510(t). A performance test is required for each in-line fluxer to measure emissions of PM and HCl [40 CFR 63.1512(j) and 40 CFR 63.1512(j)(3)]
- n. During the emission test(s) conducted to determine compliance with emission limits in a kg/Mg (lb/ton) format, the permittee of an affected source or emission unit, subject to an emission limit in a kg/Mg (lb/ton) of feed/charge format, shall measure (or otherwise determine) and record the total weight of feed/charge to the affected source or emission unit for each of the three test runs and calculate and record the total weight. If the permittee chooses to demonstrate compliance on the basis of the aluminum production weight shall measure the weight of aluminum produced by the emission unit or affected source instead of the feed/charge weight. [40 CFR 63.1512(k)]
- o. If the permittee uses a continuous opacity monitoring system, the permittee shall conduct a performance evaluation to demonstrate compliance with Performance Specification 1 in 40 CFR Part 60, Appendix B. Following the performance evaluation, the permittee shall measure and record the opacity of emissions from each exhaust stack for all consecutive 6-minute periods during the PM emission test. [40 CFR 63.1512(l)]
- p. The permittee shall use these procedures to establish an operating parameter value or range for the inlet gas temperature: [40 CFR 63.1512(n)]
 - i. Continuously measure and record the temperature at the inlet to the lime-injected fabric filter every 15 minutes during the HCl and D/F performance test; [40 CFR 63.1512(n)(1)]
 - ii. Determine and record the 15-minute block average temperatures for the 3 test runs; and [40 CFR 63.1512(n)(2)]
 - iii. Determine and record the 3-hour block average of the recorded temperature measurements for the 3 test runs. [40 CFR 63.1512(n)(3)]
- q. The permittee shall use these procedures to establish an operating parameter value or range for the total reactive chlorine flux injection rate: [40 CFR 63.1512(o)]
 - i. Continuously measure and record the weight of gaseous or liquid reactive flux injected for each 15 minute period during the HCl and D/F tests, determine and record the 15-minute block average weights, and calculate and record the total weight of the gaseous or liquid reactive flux for the 3 test runs; [40 CFR 63.1512(o)(1)]
 - ii. Record the identity, composition, and total weight of each addition of solid reactive flux for the 3 test runs; [40 CFR 63.1512(o)(2)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- iii. Determine the total reactive chlorine flux injection rate by adding the recorded measurement of the total weight of chlorine in the gaseous or liquid reactive flux injected and the total weight of chlorine in the solid reactive flux using the equation below. [40 CFR 63.1512(o)(3)]

$$W_t = F_1W_1 + F_2W_2$$

Where,

W_t = Total chlorine usage, by weight;

F_1 = Fraction of gaseous or liquid flux that is chlorine;

W_1 = Weight of reactive flux gas injected;

F_2 = Fraction of solid reactive chloride flux that is chlorine (*e.g.*, $F = 0.75$ for magnesium chloride); and

W_2 = Weight of solid reactive flux

- iv. Divide the weight of total chlorine usage (W_t) for the 3 test runs by the recorded measurement of the total weight of feed for the 3 test runs; and [40 CFR 63.1512(o)(4)]
- v. If a solid reactive flux other than magnesium chloride is used, the permittee shall derive the appropriate proportion factor subject to approval by the Division. [40 CFR 63.1512(o)(5)]
- r. The permittee shall use these procedures during the HCl and D/F test to establish an operating parameter value for the feeder setting for each operating cycle or time period used in the performance test: [40 CFR 63.1512(p)]
- i. For continuous lime injection systems, ensure that lime in the feed hopper or silo is free-flowing at all times; and [40 CFR 63.1512(p)(1)]
- ii. Record the feeder setting and lime injection rate for the 3 test runs. If the feed rate setting and lime injection rates vary between the runs, determine and record the average feed rate and lime injection rate from the 3 runs. [40 CFR 63.1512(p)(2)]
- s. Within 60 days after achieving the maximum production rate at which the affected facilities will be operated but not later than 180 days after initial start-up of the first In-Line Degasser and associated control device, the permittee shall conduct performance testing over an entire process operating cycle to verify and establish the PM, PM₁₀, and PM_{2.5} emission factors associated with Emission Unit #'s 013 through 015. The results from a single In-Line Degasser and associated control device (controlling a melting furnace, holding furnace, and in-line degasser in series) on any of the three identical casting lines are assumed to be representative of the other In-Line Degassers and control devices. [To preclude 401 KAR 51:017]
- i. Prior to performance testing, the permittee shall:
1. Establish a pressure drop range for the lime-injected filter house and a volumetric flowrate range for the furnace capture systems in accordance with the

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

manufacturer's written instructions and operate the control devices within these ranges during the test.

2. Define the process operating cycle in the test protocol submittal.
- ii. Pollutant measurement shall be made at the following locations:
 1. Uncontrolled exhaust from the In-Line Degasser for PM, PM₁₀, and PM_{2.5}; and
 2. Combined inlet to the lime-injected filter house for PM, PM₁₀, and PM_{2.5}; simultaneously with
 3. Stack outlet from the lime-injected filter house for PM, PM₁₀, and PM_{2.5}.
 - iii. Performance testing shall be conducted using the following U.S. EPA Reference Test Methods:
 1. U.S. EPA Reference Method 5 for PM; and
 2. U.S. EPA Reference Methods 201A/202 for PM₁₀ and PM_{2.5}; or
 3. Other methods, as approved by the Division.
 - iv. During performance testing, the permittee shall monitor the following parameters:
 1. Process weight rate;
 2. Volumetric flow rate at each pollutant measurement location; and
 3. Volumetric flow rate at the filter house stack discharge.
 - t. The permittee shall conduct subsequent performance testing within 5 years of the date the previous performance test, which verified compliance with the emission limits required to preclude 401 KAR 51:017, was conducted. Performance testing shall be conducted to verify and establish the PM, PM₁₀, and PM_{2.5} emission factors associated with Emission Unit #'s 013 through 015. The results from a single In-Line Degasser and associated control device (controlling a melting furnace, holding furnace, and in-line degasser in series) on any of the three identical casting lines are assumed to be representative of the other In-Line Degassers and control devices. Subsequent performance testing conducted to verify compliance with the emission limits required to preclude 401 KAR 51:017 shall: [To preclude 401 KAR 51:017]
 - i. Satisfy all conditions specified for initial performance testing required to preclude 401 KAR 51:017.
 - ii. Subsequent performance testing shall not be repeated on a given In-Line Degasser and associated control device until all In-Line Degassers and associated control devices have completed a performance testing cycle.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

u. Refer to **Section G – General Provisions** for additional requirements.

4. Specific Monitoring Requirements:

- a. The permittee shall perform a qualitative visual observation of the emissions from each stack while any of the associated equipment is operating on a weekly basis. If visible emissions are present then the opacity shall be determined by using U.S. EPA Reference Method 9. [401 KAR 52:020, Section 10]
- b. The permittee shall monitor hours of operation, process weight rate (tons), as defined in 401 KAR 59:010, Section 2, aluminum production (tons), and natural gas combusted (MMscf) on a monthly basis [401 KAR 52:020, Section 10].
- c. The permittee shall prepare and implement for each affected source, a written OM&M plan. [40 CFR 63.1510(b)]
- d. The permittee shall inspect the labels for each in-line fluxer at least once per calendar month to confirm that posted labels as required by the operational standard in 40 CFR 63.1506(b) are intact and legible. [40 CFR 63.1510(c)]
- e. The permittee shall: [40 CFR 63.1510(d)]
 - i. Install, operate, and maintain a capture/collection system for each affected source and emission unit equipped with an add-on air pollution control device; and [40 CFR 63.1510(d)(1)]
 - ii. Inspect each capture/collection and closed vent system at least once each calendar year to ensure that each system is operating in accordance with the operating requirements in 40 CFR 63.1506(c) and record the results of each inspection. This inspection shall include a volumetric flow rate measurement taken at a location in the ductwork downstream of the hoods that is representative of the actual volumetric flow rate without interference due to leaks, ambient air added for cooling or ducts from other hoods. The flow rate measurement shall be performed in accordance with 40 CFR 63.1510(d)(2)(i), (ii), or (iii). As an alternative to the flow rate measurement specified in 40 CFR 63.1510(d)(2), the inspection may satisfy the requirements of 40 CFR 63.1510(d)(2), including the operating requirements in 40 CFR 63.1506(c), by including permanent total enclosure verification in accordance with 40 CFR 63.1510(d)(2)(i) or (iv). Inspections that fail to successfully demonstrate that the requirements of 40 CFR 63.1506(c) are met, shall be followed by repair or adjustment to the system operating conditions and a follow up inspection within 45 days to demonstrate that 40 CFR 63.1506(c) requirements are fully met. [40 CFR 63.1510(d)(2)]
1. Conduct annual flow rate measurements using U.S. EPA Reference Methods 1 and 2 in 40 CFR Part 60, Appendix A, or conduct annual verification of a permanent total enclosure using U.S. EPA Reference Method 204; or the permittee may follow one of the three alternate procedures described in 40 CFR 63.1510(d)(2)(ii), (iii), or (iv) to maintain system operations in accordance with an operating limit

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

established during the performance test. The operating limit is determined as the average reading of a parametric monitoring instrument (Magnehelic[®], manometer, anemometer, or other parametric monitoring instrument) and technique as described in 40 CFR 63.1510(d)(2)(ii), (iii), and (iv). A deviation, as defined in 40 CFR 63.1510(d)(2)(ii), (iii), and (iv), from the parametric monitoring operating limit requires the permittee to make repairs or adjustments to restore normal operation within 45 days. [40 CFR 63.1510(d)(2)(i)]

2. As an alternative to annual flow rate measurements using U.S. EPA Reference Methods 1 and 2, measurement with U.S. EPA Reference Methods 1 and 2 can be performed once every 5 years, provided that: [40 CFR 63.1510(d)(2)(ii)]
 - A. A flow rate indicator consisting of a pitot tube and differential pressure gauge (Magnehelic[®], manometer, or other differential pressure gauge) is installed with the pitot tube tip located at a representative point of the duct proximate to the location of the U.S. EPA Reference Methods 1 and 2 measurement site; and [40 CFR 63.1510(d)(2)(ii)(A)]
 - B. The flow rate indicator is installed and operated in accordance with the manufacturer's specifications; and [40 CFR 63.1510(d)(2)(ii)(B)]
 - C. The differential pressure is recorded during the U.S. EPA Reference Method 2 performance test series; and [40 CFR 63.1510(d)(2)(ii)(C)]
 - D. Daily differential pressure readings are made by taking three measurements with at least 5 minutes between each measurement and averaging the three measurements; and readings are recorded daily and maintained at or above 90 percent of the average pressure differential indicated by the flow rate indicator during the most recent U.S. EPA Reference Method 2 performance test series; and [40 CFR 63.1510(d)(2)(ii)(D)]
 - E. An inspection of the pitot tube and associated lines for damage, plugging, leakage, and operational integrity is conducted at least once per year; or [40 CFR 63.1510(d)(2)(ii)(E)]
3. As an alternative to annual flow rate measurements using U.S. EPA Reference Methods 1 and 2, measurement with U.S. EPA Reference Methods 1 and 2 can be performed once every 5 years, provided that: [40 CFR 63.1510(d)(2)(iii)]
 - A. Daily measurements of the capture and collection system's fan revolutions per minute (RPM) or fan motor amperage (amps) are made by taking three measurements with at least 5 minutes between each measurement, and averaging the three measurements; and readings are recorded daily and maintained at or above 90 percent of the average RPM or amps measured during the most recent U.S. EPA Reference Method 2 performance test series; or [40 CFR 63.1510(d)(2)(iii)(A)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- B. A static pressure measurement device is installed in the duct immediately downstream of the hood exit, and daily pressure readings are made by taking three measurements with at least 5 minutes between each measurement, and averaging the three measurements; and readings are recorded daily and maintained at 90 percent or better of the average vacuum recorded during the most recent U.S. EPA Reference Method 2 performance test series; or [40 CFR 63.1510(d)(2)(iii)(B)]
 - C. A hotwire anemometer, ultrasonic flow meter, cross-duct pressure differential sensor, venturi pressure differential monitoring or orifice plate equipped with an associated thermocouple and automated data logging software and associated hardware is installed; and daily readings are made by taking three measurements with at least 5 minutes between each measurement, and averaging the three measurements; and readings are recorded daily and maintained at 90 percent or greater of the average readings during the most recent U.S. EPA Reference Method 2 performance test series; or [40 CFR 63.1510(d)(2)(iii)(C)]
 - D. For booth-type hoods, hotwire anemometer measurements of hood face velocity are performed simultaneously with U.S. EPA Reference Method 1 and 2 measurements, and the annual hood face velocity measurements confirm that the enclosure draft is maintained at 90 percent or greater of the average readings during the most recent U.S. EPA Reference Method 2 performance test series. Daily readings are made by taking three measurements with at least 5 minutes between each measurement, and averaging the three measurements; and readings are recorded daily and maintained at 90 percent or greater of the average readings during the most recent U.S. EPA Reference Method 1 and 2 performance test series. [40 CFR 63.1510(d)(2)(iii)(D)]
4. As an alternative to the annual verification of a permanent total enclosure using U.S. EPA Reference Method 204, verification can be performed once every 5 years, provided that: [40 CFR 63.1510(d)(2)(iv)]
- A. Negative pressure in the enclosure is directly monitored by a pressure indicator installed at a representative location; [40 CFR 63.1510(d)(2)(iv)(A)]
 - B. Pressure readings are recorded daily or the system is interlocked to halt material feed should the system not operate under negative pressure; [40 CFR 63.1510(d)(2)(iv)(B)]
 - C. An inspection of the pressure indicator for damage and operational integrity is conducted at least once per calendar year. [40 CFR 63.1510(d)(2)(iv)(C)]
- f. The permittee shall install, calibrate, operate, and maintain a device to measure and record the total weight of feed/charge to, or the aluminum production from, the affected source or emission unit over the same operating cycle or time period used in the performance test. Feed/charge or aluminum production within SAPUs shall be measured and recorded on an

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

emission unit-by-emission unit basis. As an alternative to a measurement device, the permittee may use a procedure acceptable to the Division to determine the total weight of feed/charge or aluminum production to the affected source or emission unit. [40 CFR 63.1510(e)]

- i. The accuracy of the weight measurement device or procedure shall be ± 1 percent of the weight being measured. The permittee may apply to the Division for approval to use a device of alternative accuracy if the required accuracy cannot be achieved as a result of equipment layout or charging practices. A device of alternative accuracy will not be approved unless the permittee provides assurance through data and information that the affected source will meet the relevant emission standard. [40 CFR 63.1510(e)(1)]
 - ii. The permittee shall verify the calibration of the weight measurement device in accordance with the schedule specified by the manufacturer, or if no calibration schedule is specified, at least once every 6 months. [40 CFR 63.1510(e)(2)]
- g. The permittee shall install, calibrate, maintain, and continuously operate a bag leak detection system as required in 40 CFR 63.1510(f)(1) or a continuous opacity monitoring system as required in 40 CFR 63.1510(f)(2). [40 CFR 63.1510(f)]
- i. The following requirements apply to the permittee if a bag leak detection system is used: [40 CFR 63.1510(f)(1)]
 1. The permittee shall install and operate a bag leak detection system for each exhaust stack of a fabric filter. [40 CFR 63.1510(f)(1)(i)]
 2. Each bag leak detection system shall be installed, calibrated, operated, and maintained according to the manufacturer's operating instructions. [40 CFR 63.1510(f)(1)(ii)]
 3. The bag leak detection system shall be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less. [40 CFR 63.1510(f)(1)(iii)]
 4. The bag leak detection system sensor shall provide output of relative or absolute PM loadings. [40 CFR 63.1510(f)(1)(iv)]
 5. The bag leak detection system shall be equipped with a device to continuously record the output signal from the sensor. [40 CFR 63.1510(f)(1)(v)]
 6. The bag leak detection system shall be equipped with an alarm system that will sound automatically when an increase in relative PM emissions over a preset level is detected. The alarm shall be located where it is easily heard by plant operating personnel. [40 CFR 63.1510(f)(1)(vi)]
 7. For positive pressure fabric filter systems, a bag leak detection system shall be installed in each baghouse compartment or cell. For negative pressure or induced

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- air fabric filters, the bag leak detector shall be installed downstream of the fabric filter. [40 CFR 63.1510(f)(1)(vii)]
8. Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors. [40 CFR 63.1510(f)(1)(viii)]
 9. The baseline output shall be established by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time. [40 CFR 63.1510(f)(1)(ix)]
 10. Following initial adjustment of the system, the permittee shall not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time except as detailed in the OM&M plan. In no case may the sensitivity be increased by more than 100 percent or decreased more than 50 percent over a 365-day period unless such adjustment follows a complete fabric filter inspection which demonstrates that the fabric filter is in good operating condition. [40 CFR 63.1510(f)(1)(x)]
- ii. The following requirements apply to the permittee if a continuous opacity monitoring system is used: [40 CFR 63.1510(f)(2)]
 1. The permittee shall install, calibrate, maintain, and operate a continuous opacity monitoring system to measure and record the opacity of emissions exiting each exhaust stack. [40 CFR 63.1510(f)(2)(i)]
 2. Each continuous opacity monitoring system shall meet the design and installation requirements of Performance Specification 1 in 40 CFR Part 60, Appendix B. [40 CFR 63.1510(f)(2)(ii)]
 - h. The permittee shall install, calibrate, maintain, and operate a device to continuously monitor and record the temperature of the fabric filter inlet gases consistent with the requirements for continuous monitoring systems in 40 CFR 63, Subpart A. The temperature monitoring device shall meet each of the following performance and equipment specifications: [40 CFR 63.1510(h)(1) and (2)]
 - i. The monitoring system shall record the temperature in 15-minute block averages and calculate and record the average temperature for each 3-hour block period. [40 CFR 63.1510(h)(2)(i)]
 - ii. The recorder response range shall include zero and 1.5 times the average temperature established according to the requirements in 40 CFR 63.1512(n). [40 CFR 63.1510(h)(2)(ii)]
 - iii. The reference method shall be a National Institute of Standards and Technology calibrated reference thermocouple-potentiometer system or alternate reference, subject to approval by the Administrator. [40 CFR 63.1510(h)(2)(iii)]
 - i. The following requirements apply to the permittee for use of a lime-injected fabric filter to comply with the requirements of 40 CFR 63, Subpart RRR. [40 CFR 63.1510(i)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- i. For a continuous lime injection system, the permittee shall verify that lime is always free-flowing by either: [40 CFR 63.1510(i)(1)]
 1. Inspecting each feed hopper or silo at least once each 8-hour period and recording the results of each inspection. If lime is found not to be free-flowing during any of the 8-hour periods, the permittee shall increase the frequency of inspection to at least once every 4-hour period for the next 3 days. The permittee may return to inspections at least once every 8-hour period if corrective action results in no further blockages of lime during the 3-day period; or [40 CFR 63.1510(i)(1)(i)]
 2. Subject to the approval of the Division, installing, operating, and maintaining a load cell, carrier gas/lime flow indicator, carrier gas pressure drop measurement system or other system to confirm that lime is free-flowing. If lime is found not to be free-flowing, the permittee shall promptly initiate and complete corrective action; or [40 CFR 63.1510(i)(1)(ii)]
 3. Subject to the approval of the Division, installing, operating, and maintaining a device to monitor the concentration of HCl at the outlet of the fabric filter. If an increase in the concentration of HCl indicates that the lime is not free-flowing, the permittee shall promptly initiate and complete corrective action. [40 CFR 63.1510(i)(1)(iii)]
- ii. For a continuous lime injection system, the permittee shall record the lime feeder setting once each day of operation. [40 CFR 63.1510(i)(2)]
- iii. For intermittent addition of lime to a lime-injected fabric filter, the permittee shall obtain approval from the Division for a lime addition monitoring procedure. The Division will not approve a monitoring procedure unless data and information are submitted establishing that the procedure is adequate to ensure that relevant emission standards will be met on a continuous basis. [40 CFR 63.1510(i)(3)]
- iv. At least once per month, verify that the lime injection rate in pounds per hour (lb/hr) is no less than 90 percent of the lime injection rate used to demonstrate compliance during the most recent performance test. If the monthly check of the lime injection rate is below 90 percent, the permittee shall repair or adjust the lime injection system to restore normal operation within 45 days. The permittee may request from the Division, an extension of up to an additional 45 days to demonstrate that the lime injection rate is no less than 90 percent of the lime injection rate used to demonstrate compliance during the most recent performance test. In the event that a lime feeder is repaired or replaced, the feeder shall be calibrated, and the feed rate shall be restored to the lb/hr feed rate operating limit established during the most recent performance test within 45 days. The permittee may request from the Division, an extension of up to an additional 45 days to complete the repair or replacement and establishing a new setting. The repair or replacement, and the establishment of the new feeder setting(s) shall be documented in accordance with the recordkeeping requirements of 40 CFR 63.1517. [40 CFR 63.1510(i)(4)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- j. The permittee shall: [40 CFR 63.1510(j)]
 - i. Install, calibrate, operate, and maintain a device to continuously measure and record the weight of gaseous or liquid reactive flux injected to each affected source or emission unit. [40 CFR 63.1510(j)(1)]
 - 1. The monitoring system shall record the weight for each 15-minute block period, during which reactive fluxing occurs, over the same operating cycle or time period used in the performance test. [40 CFR 63.1510(j)(1)(i)]
 - 2. The accuracy of the weight measurement device shall be ± 1 percent of the weight of the reactive component of the flux being measured. The permittee may apply to the Division for permission to use a weight measurement device of alternative accuracy in cases where the reactive flux flow rates are so low as to make the use of a weight measurement device of ± 1 percent impracticable. A device of alternative accuracy will not be approved unless the permittee provides assurance through data and information that the affected source will meet the relevant emission standards. [40 CFR 63.1510(j)(1)(ii)]
 - 3. The permittee shall verify the calibration of the weight measurement device in accordance with the schedule specified by the manufacturer, or if no calibration schedule is specified, at least once every 6 months [40 CFR 63.1510(j)(1)(iii)].
 - ii. Calculate and record the gaseous or liquid reactive flux injection rate (kg/Mg or lb/ton) for each operating cycle or time period used in the performance test using the procedure in 40 CFR 63.1512(o). [40 CFR 63.1510(j)(2)]
 - iii. Record, for each 15-minute block period during each operating cycle or time period used in the performance test during which reactive fluxing occurs, the time, weight, and type of flux for each addition of: [40 CFR 63.1510(j)(3)]
 - 1. Gaseous or liquid reactive flux other than chlorine; and [40 CFR 63.1510(j)(3)(i)]
 - 2. Solid reactive flux [40 CFR 63.1510(j)(3)(ii)].
 - iv. Calculate and record the total reactive flux injection rate for each operating cycle or time period used in the performance test using the procedure in 40 CFR 63.1512(o). For solid flux that is added intermittently, record the amount added for each operating cycle or time period used in the performance test using the procedures in 40 CFR 63.1512(o). [40 CFR 63.1510(j)(4)]
 - v. The permittee may apply to the Administrator for approval of an alternative method for monitoring and recording the total reactive flux addition rate based on monitoring the weight or quantity of reactive flux per ton of feed/charge for each operating cycle or time period used in the performance test. An alternative monitoring method will not be approved unless the permittee provides assurance through data and information that the

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

affected source will meet the relevant emission standards on a continuous basis. [40 CFR 63.1510(j)(5)]

- k. For each lime-injected filter house, the permittee shall install, calibrate at least annually, maintain, and operate a continuous parameter monitoring system to measure and record: [401 KAR 52:020, Section 10]
 - i. The differential pressure drop across the filter house; and
 - ii. The volumetric flow rate in the filter house stack to verify that it is maintained within the range recommended by the manufacturer.
- l. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

5. Specific Recordkeeping Requirements:

- a. The permittee shall maintain records of qualitative visual observations of the emissions from each stack and any U.S. EPA Reference Method 9 readings performed. [401 KAR 52:020, Section 10]
- b. The permittee shall maintain records of hours of operation, process weight rate (tons), as defined in 401 KAR 59:010, Section 2, aluminum production (tons), and natural gas combusted (MMscf) on a monthly basis. [401 KAR 52:020, Section 10]
- c. The permittee shall maintain files of all information (including all reports and notifications) required by 40 CFR 63.10(b) and 40 CFR 63, Subpart RRR. [40 CFR 63.1517(a)]
 - i. The permittee shall retain each record for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The most recent 2 years of records shall be retained at the facility. The remaining 3 years of records may be retained off site. [40 CFR 63.1517(a)(1)]
 - ii. The permittee may retain records on microfilm, computer disks, magnetic tape, or microfiche; and [40 CFR 63.1517(a)(2)]
 - iii. The permittee may report required information on paper or on a labeled computer disk using commonly available and EPA-compatible computer software. [40 CFR 63.1517(a)(3)]
- d. In addition to the general records required by 40 CFR 63.10(b), the permittee shall maintain records of: [40 CFR 63.1517(b)]
 - i. For each affected source and emission unit with emissions controlled by a fabric filter or lime-injected fabric filter: [40 CFR 63.1517(b)(1)]
 1. If a bag leak detection system is used, the number of total operating hours for the affected source or emission unit during each 6-month reporting period, records of each alarm, the time of the alarm, the time corrective action was initiated and

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- completed, and a brief description of the cause of the alarm and corrective action(s) taken. [40 CFR 63.1517(b)(1)(i)]
2. If a continuous opacity monitoring system is used, records of opacity measurement data, including records where the average opacity of any 6-minute period exceeds 5 percent, with a brief explanation of the cause of the emissions, the time the emissions occurred, the time corrective action was initiated and completed, and the corrective action taken. [40 CFR 63.1517(b)(1)(ii)]
- ii. For each affected source and emission unit with emissions controlled by a lime-injected fabric filter: [40 CFR 63.1517(b)(4)]
 1. Records of inspections at least once every 8-hour period verifying that lime is present in the feeder hopper or silo and flowing, including any inspection where blockage is found, with a brief explanation of the cause of the blockage and the corrective action taken, and records of inspections at least once every 4-hour period for the subsequent 3 days. If flow monitors, pressure drop sensors or load cells are used to verify that lime is present in the hopper and flowing, records of all monitor or sensor output including any event where blockage was found, with a brief explanation of the cause of the blockage and the corrective action taken; [40 CFR 63.1517(b)(4)(i)]
 2. If lime feeder setting is monitored, records of daily and monthly inspections of feeder setting, including records of any deviation of the feeder setting from the setting used in the performance test, with a brief explanation of the cause of the deviation and the corrective action taken. If a lime feeder has been repaired or replaced, this action shall be documented along with records of the new feeder calibration and the feed mechanism set points necessary to maintain the lb/hr feed rate operating limit. These records shall be maintained on site and available upon request. [40 CFR 63.1517(b)(4)(ii)]
 3. If lime addition rate for a noncontinuous lime injection system is monitored pursuant to the approved alternative monitoring requirements in 40 CFR 63.1510(v), records of the time and mass of each lime addition during each operating cycle or time period used in the performance test and calculations of the average lime addition rate (lb/ton of feed/charge). [40 CFR 63.1517(b)(4)(iii)]
 - iii. For each group 1 furnace (with or without add-on air pollution control devices) or in-line fluxer, records of 15-minute block average weights of gaseous or liquid reactive flux injection, total reactive flux injection rate and calculations (including records of the identity, composition, and weight of each addition of gaseous, liquid, or solid reactive flux), including records of any period the rate exceeds the compliant operating parameter value and corrective action taken. [40 CFR 63.1517(b)(5)]
 - iv. For each continuous monitoring system, records required by 40 CFR 63.10(c). [40 CFR 63.1517(b)(6)]

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- v. For each affected source and emission unit subject to an emission standard in kg/Mg (lb/ton) of feed/charge, records of feed/charge (or throughput) weights for each operating cycle or time period used in the performance test. [40 CFR 63.1517(b)(7)]
- vi. Records of monthly inspections for proper unit labeling for each affected source and emission unit subject to labeling requirements. [40 CFR 63.1517(b)(13)]
- vii. Records of annual inspections of emission capture/collection and closed vent systems or, if the alternative to the annual flow rate measurements is used, records of differential pressure; fan RPM or fan motor amperage; static pressure measurements; or duct centerline velocity using a hotwire anemometer, ultrasonic flow meter, cross-duct pressure differential sensor, venturi pressure differential monitoring or orifice plate equipped with an associated thermocouple, as appropriate. [40 CFR 63.1517(b)(14)]
- viii. Records for any approved alternative monitoring or test procedure. [40 CFR 63.1517(b)(15)]
- ix. Current copy of all required plans, including any revisions, with records documenting conformance with the applicable plan, including: [40 CFR 63.1517(b)(16)]
 - 1. OM&M plan; and [40 CFR 63.1517(b)(16)(ii)]
 - 2. Site-specific secondary aluminum processing unit emission plan (if applicable). [40 CFR 63.1517(b)(16)(iii)]
- x. For each secondary aluminum processing unit, records of total charge weight, or if the permittee chooses to comply on the basis of aluminum production, total aluminum produced for each 24-hour period and calculations of 3-day, 24-hour rolling average emissions. [40 CFR 63.1517(b)(17)]
- xi. For any failure to meet an applicable standard, the permittee shall maintain the following records: [40 CFR 63.1517(b)(18)]
 - 1. Records of the emission unit ID, monitor ID, pollutant or parameter monitored, beginning date and time of the event, end date and time of the event, cause of the deviation or exceedance and corrective action taken [40 CFR 63.1517(b)(18)(i)].
 - 2. Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.1506(a)(5), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. [40 CFR 63.1517(b)(18)(ii)]
- xii. For each period of startup or shutdown for which the permittee chooses to demonstrate compliance for an affected source, the permittee shall comply with 40 CFR 63.1517(b)(19)(i) or (ii). [40 CFR 63.1517(b)(19)]
 - 1. To demonstrate compliance based on a feed/charge rate of zero, a flux rate of zero, and the use of electricity, propane, or natural gas as the sole sources of heating or

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the lack of heating, the permittee shall submit a semiannual report in accordance with 40 CFR 63.1516(b)(2)(vii) or maintain the following records: [40 CFR 63.1517(b)(19)(i)]

- A. The date and time of each startup and shutdown; [40 CFR 63.1517(b)(19)(i)(A)]
 - B. The quantities of feed/charge and flux introduced during each startup and shutdown; and [40 CFR 63.1517(b)(19)(i)(B)]
 - C. The types of fuel used to heat the unit, or that no fuel was used, during startup or shutdown; or [40 CFR 63.1517(b)(19)(i)(C)]
2. To demonstrate compliance based on performance tests, the permittee shall maintain the following records: [40 CFR 63.1517(b)(19)(ii)]
- A. The date and time of each startup and shutdown; [40 CFR 63.1517(b)(19)(ii)(A)]
 - B. The measured emissions in lb/hr or µg/hr or ng/hr; [40 CFR 63.1517(b)(19)(ii)(B)]
 - C. The measured feed/charge rate in tons/hr or Mg/hr from the most recent performance test associated with a production rate greater than zero, or the rated capacity of the affected source if no prior performance test data is available; and [40 CFR 63.1517(b)(19)(ii)(C)]
 - D. An explanation to support that such conditions are considered representative startup and shutdown operations. [40 CFR 63.1517(b)(19)(ii)(D)]
- e. The permittee shall maintain records of 12-month rolling total molten aluminum processed for each of Emission Unit #'s 013 through 015. [401 KAR 52:020, Section 10]
- f. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

6. Specific Reporting Requirements:

- a. The permittee shall submit the OM&M plan within 90 days after a successful initial performance test. The plan shall be accompanied by a written certification by the permittee that the OM&M plan satisfies all requirements of 40 CFR 63.1510(b) and is otherwise consistent with the requirements of 40 CFR 63, Subpart RRR. [40 CFR 63.1510(b)]
- b. For each SAPU, within the OM&M plan prepared in accordance with 40 CFR 63.1510(b), the permittee shall include the following information: [40 CFR 63.1510(s)(1)]
 - i. The identification of each emission unit in the secondary aluminum processing unit; [40 CFR 63.1510(s)(1)(i)]

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- ii. The specific control technology or pollution prevention measure to be used for each emission unit in the secondary aluminum processing unit and the date of its installation or application; [40 CFR 63.1510(s)(1)(ii)]
 - iii. The emission limit calculated for each secondary aluminum processing unit and performance test results with supporting calculations demonstrating initial compliance with each applicable emission limit; [40 CFR 63.1510(s)(1)(iii)]
 - iv. Information and data demonstrating compliance for each emission unit with all applicable design, equipment, work practice or operational standards of 40 CFR 63, Subpart RRR; and [40 CFR 63.1510(s)(1)(iv)]
 - v. The monitoring requirements applicable to each emission unit in a secondary aluminum processing unit and the monitoring procedures for daily calculation of the 3-day, 24-hour rolling average using the procedure in 40 CFR 63.1510(t). [40 CFR 63.1510(s)(1)(v)]
- c. The SAPU compliance procedures within the OM&M plan may not contain any of the following provisions: [40 CFR 63.1510(s)(2)]
- i. Any averaging among emissions of differing pollutants; [40 CFR 63.1510(s)(2)(i)]
 - ii. The inclusion of any affected sources other than emission units in a secondary aluminum processing unit; [40 CFR 63.1510(s)(2)(ii)]
 - iii. The inclusion of any emission unit while it is shutdown; or [40 CFR 63.1510(s)(2)(iii)]
 - iv. The inclusion of any periods of startup or shutdown in emission calculations. [40 CFR 63.1510(s)(2)(iv)]
- d. To revise the SAPU compliance provisions within the OM&M plan prior to the end of the permit term, the permittee shall submit a request to the Division containing the information required by 40 CFR 63.1510(s)(1) and obtain approval of the Division prior to implementing any revisions. [40 CFR 63.1510(s)(3)]
- e. Except as provided in 40 CFR 63.1510(u), the permittee shall calculate and record the 3-day, 24-hour rolling average emissions of PM, HCl, and D/F for each secondary aluminum processing unit on a daily basis. Refer to **Section D – Source Emission Limitations and Testing Requirements**. [40 CFR 63.1510(t)]
- f. As an alternative to the procedures of 40 CFR 63.1510(t), the permittee may demonstrate, through performance tests, that each individual emission unit within the secondary aluminum production unit is in compliance with the applicable emission limits for the emission unit. [40 CFR 63.1510(u)]
- g. If the permittee employs intermittent or noncontinuous lime addition to the lime-coated fabric filter, the permittee may apply to the Administrator for approval of an alternative method for monitoring the lime addition schedule and rate based on monitoring the weight

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of lime added per ton of feed/charge for each operating cycle or time period used in the performance test. An alternative monitoring method will not be approved unless the permittee provides assurance through data and information that the affected source will meet the relevant emission standards on a continuous basis. [40 CFR 63.1510(v)]

- h. If the permittee wishes to use an alternative monitoring method to demonstrate compliance with any emission standard in 40 CFR 63, Subpart RRR, other than those alternative monitoring methods which may be authorized pursuant to 40 CFR 63.1510(j)(5) and 40 CFR 63.1510(v), the permittee may submit an application to the Administrator. Any such application will be processed according to the criteria and procedures set forth in 40 CFR 63.1510(w)(1) through (6). [40 CFR 63.1510(w)]
 - i. The Administrator will not approve averaging periods other than those specified in 40 CFR 63.1510. [40 CFR 63.1510(w)(1)]
 - ii. The permittee shall continue to use the original monitoring requirement until necessary data are submitted and approval is received to use another monitoring procedure. [40 CFR 63.1510(w)(2)]
 - iii. The permittee shall submit the application for approval of alternate monitoring methods no later than the notification of the performance test. The application shall contain the information specified in 40 CFR 63.1510(w)(3)(i) through (iii). [40 CFR 63.1510(w)(3)]
 1. Data or information justifying the request, such as the technical or economic infeasibility, or the impracticality of using the required approach; [40 CFR 63.1510(w)(3)(i)]
 2. A description of the proposed alternative monitoring requirements, including the operating parameters to be monitored, the monitoring approach and technique, and how the limit is to be calculated; and [40 CFR 63.1510(w)(3)(ii)]
 3. Data and information documenting that the alternative monitoring requirement(s) would provide equivalent or better assurance of compliance with the relevant emission standard(s). [40 CFR 63.1510(w)(3)(iii)]
 - iv. The Administrator will not approve an alternative monitoring application unless it would provide equivalent or better assurance of compliance with the relevant emission standard(s). Before disapproving any alternate monitoring application, the Administrator will provide: [40 CFR 63.1510(w)(4)]
 1. Notice of the information and findings upon which the intended disapproval is based; and [40 CFR 63.1510(w)(4)(i)]
 2. Notice of opportunity for the permittee to present additional supporting information before final action is taken on the application. This notice will specify how much

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additional time is allowed for the permittee to provide additional supporting information. [40 CFR 63.1510(w)(4)(ii)]

- v. The permittee is responsible for submitting any supporting information in a timely manner to enable the Administrator to consider the application prior to the performance test. Neither submittal of an application nor the Administrator's failure to approve or disapprove the application relieves the permittee of the responsibility to comply with any provisions of 40 CFR 63, Subpart RRR. [40 CFR 63.1510(w)(5)]
- vi. The Administrator may decide at any time, on a case-by-case basis, that additional or alternative operating limits, or alternative approaches to establishing operating limits, are necessary to demonstrate compliance with the emission standards of 40 CFR 63, Subpart RRR. [40 CFR 63.1510(w)(6)]
- i. The permittee shall submit a notification of compliance status report within 90 days after conducting the initial performance test required by 40 CFR 63.1511(b). The notification shall be signed by the responsible official who shall certify its accuracy. A complete notification of compliance status shall include the information specified in 40 CFR 63.1515(a)(1) through (10). The required information may be submitted in an operating permit application, in an amendment to an operating permit application, in a separate submittal, or in any combination. If the permittee submits the information specified in 40 CFR 63.1515 at different times or in different submittals, later submittals may refer to earlier submittals instead of duplicating and resubmitting the information previously submitted. A complete notification of compliance status report shall include: [40 CFR 63.1512(q), 40 CFR 63.1512(r), 40 CFR 63.1512(s), 40 CFR 63.1515(b)]
 - i. All information required in 40 CFR 63.9(h). The permittee shall provide a complete performance test report for each affected source and emission unit for which a performance test is required. A complete performance test report includes all data, associated measurements, and calculations (including visible emission and opacity tests). [40 CFR 63.1515(b)(1)]
 - ii. The approved site-specific test plan and performance evaluation test results for each continuous monitoring system (including a continuous emission or opacity monitoring system). [40 CFR 63.1515(b)(2)]
 - iii. Unit labeling as described in 40 CFR 63.1506(b), including process type of furnace classification and operating requirements. [40 CFR 63.1515(b)(3)]
 - iv. The compliant operating parameter value or range established for each affected source or emission unit with supporting documentation and a description of the procedure used to establish the value (e.g., lime injection rate, total reactive chlorine flux injection rate, fabric filter inlet temperature), including the operating cycle or time period used in the performance test. [40 CFR 63.1515(b)(4)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- v. Design information and analysis, with supporting documentation, demonstrating conformance with the requirements for capture/collection systems in 40 CFR 63.1506(c). [40 CFR 63.1515(b)(5)]
- vi. If applicable, analysis and supporting documentation demonstrating conformance with EPA guidance and specifications for bag leak detection systems in 40 CFR 63.1510(f). [40 CFR 63.1515(b)(6)]
- vii. The OM&M plan. [40 CFR 63.1515(b)(9)]
- j. The permittee shall submit semiannual reports according to the requirements in 40 CFR 63.10(e)(3). Except, the permittee shall submit the semiannual reports within 60 days after the end of each 6-month period instead of within 30 days after the calendar half as specified in 40 CFR 63.10(e)(3)(v). When no deviation of parameters have occurred, the permittee shall submit a report stating that no excess emissions occurred during the reporting period. [40 CFR 63.1516(b)]
 - i. A report shall be submitted if any of these conditions occur during a 6-month reporting period: [40 CFR 63.1516(b)(1)]
 - 1. The corrective action specified in the OM&M plan for a bag leak detection system alarm was not initiated within 1 hour. [40 CFR 63.1516(b)(1)(i)]
 - 2. The corrective action specified in the OM&M plan for a continuous opacity monitoring deviation was not initiated within 1 hour. [40 CFR 63.1516(b)(1)(ii)]
 - 3. An excursion of a compliant process or operating parameter value or range (e.g., lime injection rate or screw feeder setting, total reactive chlorine flux injection rate, afterburner operating temperature, fabric filter inlet temperature, definition of acceptable scrap, or other approved operating parameter). [40 CFR 63.1516(b)(1)(iv)]
 - 4. An affected source (including an emission unit in a secondary aluminum processing unit) was not operated according to the requirements of 40 CFR 63, Subpart RRR. [40 CFR 63.1516(b)(1)(vi)]
 - 5. A deviation from the 3-day, 24-hour rolling average emission limit for a secondary aluminum processing unit. [40 CFR 63.1516(b)(1)(vii)]
 - ii. For each affected source choosing to demonstrate compliance during periods of startup and shutdown in accordance with 40 CFR 63.1513(f)(1) the report shall contain a certification stating: "During each startup and shutdown, no flux and no feed/charge were added to the emission unit, and electricity, propane or natural gas were used as the sole source of heat or the emission unit was not heated." [40 CFR 63.1516(b)(2) and 40 CFR 63.1516(b)(2)(vii)]
 - iii. The permittee shall submit the results of any performance test conducted during the reporting period, including one complete report documenting test methods and

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

procedures, process operation, and monitoring parameter ranges or values for each test method used for a particular type of emission point tested. [40 CFR 63.1516(b)(3)]

1. Within 60 days after the date of completing each performance test (as defined in 40 CFR 63.2) required by 40 CFR 63, Subpart RRR, the permittee shall submit the results of the performance tests, including any associated fuel analyses, following the procedure specified in either 40 CFR 63.1516(b)(3)(i)(A) or (B). [40 CFR 63.1516(b)(3)(i)]
 - A. For data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT Web site (https://www3.epa.gov/ttn/chief/ert/ert_info.html), the permittee shall submit the results of the performance test to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). (CEDRI can be accessed through the EPA's Central Data Exchange (CDX) (<https://cdx.epa.gov/>.) Performance test data shall be submitted in the file format generated through the use of the EPA's ERT Web site. If the permittee claims that some of the performance test information being submitted is confidential business information (CBI), the permittee shall submit a complete file generated through the use of the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT Web site, including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage media to the EPA. The electronic media shall be clearly marked as CBI and mailed to U.S. EPA/OAQPS/CORE CBI Office, Attention: Group Leader, Measurement Policy Group, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT or alternate file with the CBI omitted shall be submitted to the EPA via the EPA's CDX as described earlier in this paragraph. [40 CFR 63.1516(b)(3)(i)(A)]
 - B. For data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT Web site, the permittee shall submit the results of the performance test to the Administrator at the appropriate address listed in 40 CFR 63.13 [40 CFR 63.1516(b)(3)(i)(B)].
- iv. A malfunction report that is required under 40 CFR 63.1516(d) shall be submitted simultaneously with the semiannual excess emissions/summary report required by 40 CFR 63.1516(b). [40 CFR 63.1516(b)(4)]
- k. For the purpose of annual certifications of compliance required by 40 CFR Part 70 or 71, the permittee shall certify continuing compliance based upon, but not limited to, the following conditions: [40 CFR 63.1516(c)]
 - i. Any period of excess emissions, as defined in 40 CFR 63.1516(b)(1), that occurred during the year were reported as required by 40 CFR 63, Subpart RRR; and [40 CFR 63.1516(c)(1)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- ii. All monitoring, recordkeeping, and reporting requirements were met during the year. [40 CFR 63.1516(c)(2)]
- l. If there was a malfunction during the reporting period, the permittee shall submit a report that includes the emission unit ID, monitor ID, pollutant or parameter monitored, beginning date and time of the event, end date and time of the event, cause of the deviation or exceedance and corrective action taken for each malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report shall include a list of the affected source or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emission, including, but not limited to, product-loss calculations, mass balance calculations, measurements when available, or engineering judgement based on known process parameters. The report shall also include a description of action taken by the permittee during a malfunction of an affected source to minimize emission in accordance with 40 CFR 63.1506(a)(5). [40 CFR 63.1516(d)]
- m. All reports required by 40 CFR 63, Subpart RRR not subject to the requirements in 40 CFR 63.1516(b) shall be sent to the Administrator at the appropriate address listed in 40 CFR 63.13. If acceptable to both the Administrator and the permittee, these reports may be submitted on electronic media. The Administrator retains the right to require submittal of reports subject to 40 CFR 63.1516(b) in paper format. [40 CFR 63.1516(e)]
- n. The permittee shall submit, concurrently with results from performance testing conducted to preclude 401 KAR 51:017, an evaluation of the adequacy of permitted throughput limits taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 based upon the results from performance testing conducted to preclude 401 KAR 51:017. [401 KAR 52:020, Section 10]
- o. The permittee shall include, in the semi-annual report, a confirmatory statement that: [401 KAR 52:020, Section 10]
 - i. "Performance testing conducted for PM, PM₁₀, and PM_{2.5} yielded results demonstrating that permitted throughput limits are adequate for the project authorized by V-18-001 to preclude 401 KAR 51:017.";
 - ii. "Performance testing conducted for PM, PM₁₀, and PM_{2.5} yielded results demonstrating that permitted throughput limits are not adequate for the project authorized by V-18-001 to preclude 401 KAR 51:017."; or
 - iii. "No performance testing for PM, PM₁₀, and PM_{2.5} was conducted during the reporting period."
- p. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

7. Specific Control Equipment Operating Conditions:

- a. The lime-injected filter house associated with Emission Unit #'s 013 through 015 shall be operated at all times the respective Emission Unit is in operation. [To preclude 401 KAR 51:017]
- b. Records regarding the maintenance of the air pollution control equipment shall be maintained. [401 KAR 52:020, Section 10]
- c. Refer to **Section E – Source Control Equipment Requirements** for additional requirements.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Group C:

Group 2 Furnaces

Emission Unit #	Unit Name	Maximum Aluminum Processing Capacity (ton/hr)	Control Device	Construction Commenced
Process Area 01: Melting & Casting				
019	Induction Furnace #1	4.00	----	May 2018
020	Induction Furnace #2	4.00	----	May 2018
021	Induction Furnace #3	4.00	----	May 2018
022	Induction Furnace #4	4.00	----	May 2018

APPLICABLE REGULATIONS:**401 KAR 59:010**, *New process operations***401 KAR 63:002, Section 2(4)(ccc)**, *40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR), National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production***PRECLUDED REGULATIONS:****401 KAR 51:017**, *Prevention of significant deterioration of air quality for PM, PM₁₀, PM_{2.5}, and VOC***1. Operating Limitations:**

- a. At all times, the permittee shall operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.1506(a)(5)]
- b. The permittee shall provide and maintain easily visible labels posted at each group 2 furnace that identifies the applicable emission limits and means of compliance, including: [40 CFR 63.1506(b)]
 - i. The type of affected source or emission unit (e.g., group 2 furnace). [40 CFR 63.1506(b)(1)]
 - ii. The applicable operational standard(s) and control method(s) (work practice or control device). This includes, but is not limited to, the type of charge to be used for a furnace (e.g., clean scrap only, etc.), flux materials and additional practices, and the applicable operating parameter ranges and requirements as incorporated in the operation, maintenance, and monitoring (OM&M) plan. [40 CFR 63.1506(b)(2)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**Compliance Demonstration Method:**

Compliance shall be demonstrated according to 4. Specific Monitoring Requirements (d), 5. Specific Recordkeeping Requirements (d)(ii), and 6. Specific Reporting Requirements (b)(iii).

- c. The permittee shall: [40 CFR 63.1506(o)]
 - i. Operate each furnace using only clean charge as the feedstock. [40 CFR 63.1506(o)(1)]
 - ii. Operate each furnace using no reactive flux. [40 CFR 63.1506(o)(2)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to 4. Specific Monitoring Requirements (e), 5. Specific Recordkeeping Requirements (d)(i), and 6. Specific Reporting Requirements (c)(ii).

- d. When a process parameter or add-on air pollution control device operating parameter deviates from the value or range established during the performance test and incorporated in the OM&M plan, the permittee shall initiate correction action. Corrective action shall restore operation of the affected source or emission unit (including the process or control device) to its normal or usual mode of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. Corrective actions taken shall include follow-up actions necessary to return the process or control device parameter level(s) to the value or range of values established during the performance test and steps to prevent the likely recurrence of the cause of a deviation. [40 CFR 63.1506(p)]
- e. The permittee shall prepare and implement for each affected source and emission unit, a written OM&M plan. The permittee shall submit the OM&M plan to the Division within 90 days after startup. The plan shall be accompanied by a written certification by the permittee that the OM&M plan satisfies all requirements of 40 CFR 63.1510 and is otherwise consistent with the requirements of 40 CFR 63, Subpart RRR. The permittee shall comply with all of the provisions of the OM&M plan as submitted to the Division, unless and until the plan is revised in accordance with the procedures in 40 CFR 63.1510(b). If the Division determines at any time after receipt of the OM&M plan that any revisions of the plan are necessary to satisfy the requirements of 40 CFR 63.1510 or 40 CFR 63, Subpart RRR, the permittee shall promptly make all necessary revisions and resubmit the revised plan. If the permittee determines that any other revisions of the OM&M plan are necessary, such revisions will not become effective until the permittee submits a description of the changes and a revised plan incorporating them to the Division. Each plan shall contain the following information: [40 CFR 63.1510(b)]
 - i. Process and control device parameters to be monitored to determine compliance, along with established operating levels or ranges, as applicable, for each process and control device. [40 CFR 63.1510(b)(1)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- ii. A monitoring schedule for each affected source and emission unit. [40 CFR 63.1510(b)(2)]
- iii. Procedures for the proper operation and maintenance of each process unit. [40 CFR 63.1510(b)(3)]
- iv. Procedures for the proper operation and maintenance of monitoring devices or systems used to determine compliance, including: [40 CFR 63.1510(b)(4)]
 - 1. Calibration and certification of accuracy of each monitoring device, at least once every 6 months, according to the manufacturer's instructions; and [40 CFR 63.1510(b)(4)(i)]
 - 2. Procedures for the quality control and quality assurance of continuous emission or opacity monitoring systems as required by the general provisions in 40 CFR 63, Subpart A [40 CFR 63.1510(b)(4)(ii)].
- v. Procedures for monitoring process and control device parameters, including lime injection rates, procedures for annual inspections of afterburners, and if applicable, the procedure to be used for determining charge/feed (or throughput) weight if a measurement device is not used [40 CFR 63.1510(b)(5)]
- vi. Corrective actions to be taken when process or operating parameters or add-on control device parameters deviate from the value or range established in 40 CFR 63.1510(b)(1), including [40 CFR 63.1510(b)(6)]
 - 1. Procedures to determine and record the cause of any deviation or excursion, and the time the deviation or excursion began and ended; and [40 CFR 63.1510(b)(6)(i)]
 - 2. Procedures for recording the corrective action taken, the time corrective action was initiated, and the time/date corrective action was completed [40 CFR 63.1510(b)(6)(ii)].
- vii. A maintenance schedule for each process and control device that is consistent with the manufacturer's instructions and recommendations for routine and long-term maintenance. [40 CFR 63.1510(b)(7)]
- viii. Documentation of the work practice and pollution prevention measures used to achieve compliance with the applicable emission limits. [40 CFR 63.1510(b)(8)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements (d)(iv)** and **6. Specific Reporting Requirements (a)**.

- f. Prior to changing furnace classifications to those not already authorized in **Section B – Emission Units, Emission Points, Applicable Regulations, and Operating Conditions**, the permittee shall submit a permit application to incorporate the applicable standards from

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

40 CFR 63, Subpart RRR regarding changes in furnace classification. [401 KAR 52:020, Section 7]

2. Emission Limitations:

- a. The permittee shall not cause, suffer, allow, or permit any continuous emission into the open air from a control device or stack associated with any affected facility which is equal to or greater than 20 percent opacity. [401 KAR 59:010, Section 3(1)(a)]

Compliance Demonstration Method:

Compliance with the opacity standard shall be demonstrated according to **4. Specific Monitoring Requirements (a)** and **5. Specific Recordkeeping Requirements (a)**.

- b. For emissions from a control device or stack, the permittee shall not cause, suffer, allow or permit the emission into the open air of PM from any affected facility which is in excess of the quantity specified in Appendix A to 401 KAR 59:010. [401 KAR 59:010, Section 3(2)]

i. For process weight rates of 0.50 ton/hr or less: 2.34 lb/hr

ii. For process weight rates up to 30.00 tons/hr: $E = 3.59 * P^{0.62}$

Where:

E = the allowable PM emissions rate (pounds/hour)

P = the process weight rate (tons/hour)

Compliance Demonstration Method:

These units are assumed to be in compliance with the 401 KAR 59:010 PM mass emission standard based on information provided to the Division in the application submitted by the source (APE20180001).

- c. Refer to **Section D – Source Emission Limitations and Testing Requirements** for source-wide emission limitations to preclude 401 KAR 51:017.

3. Testing Requirements:

- a. Except as provided in 401 KAR 50:045, performance tests used to demonstrate compliance with 401 KAR 59:010, Section 3 shall be conducted according to the following methods. Methods are filed by reference in 401 KAR 50:015. [401 KAR 59:010, Section 4]

i. For the emission rates of particulate matter and the associated moisture content, U.S. EPA Reference Method 5 shall be used. [401 KAR 59:010, Section 4(1)]

ii. U.S. EPA Reference Method 1 for sample and velocity traverses. [401 KAR 59:010, Section 4(2)]

iii. U.S. EPA Reference Method 2 for velocity and volumetric flow rate. [401 KAR 59:010, Section 4(3)]

iv. U.S. EPA Reference Method 3 for gas analysis. [401 KAR 59:010, Section 4(4)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- v. U.S. EPA Reference Method 9 for opacity of continuous emissions. [401 KAR 59:010, Section 4(5)]
- vi. For U.S. EPA Reference Method 5, U.S. EPA Reference Method 1 shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall be 0.85 dscm (thirty (30) dscf) except that smaller sampling time or volumes, when necessitated by process variables or other factors, may be approved by the cabinet. [401 KAR 59:010, Section 4(7)]
- b. Performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted as required by the Division in accordance with 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1.
- c. Refer to **Section G – General Provisions** for additional requirements.

4. Specific Monitoring Requirements:

- a. The permittee shall perform a qualitative visual observation of the emissions from each stack while any of the associated equipment is operating on a weekly basis. If visible emissions are present then the opacity shall be determined by using U.S. EPA Reference Method 9. [401 KAR 52:020, Section 10]
- b. The permittee shall monitor hours of operation, process weight rate (tons), as defined in 401 KAR 59:010, Section 2, and aluminum production (tons) on a monthly basis. [401 KAR 52:020, Section 10]
- c. The permittee shall prepare and implement for each affected source, a written OM&M plan. [40 CFR 63.1510(b)]
- d. The permittee shall inspect the labels for each group 2 furnace at least once per calendar month to confirm that posted labels as required by the operational standard in 40 CFR 63.1506(b) are intact and legible. [40 CFR 63.1510(c)]
- e. The permittee shall: [40 CFR 63.1510(r)]
 - i. Record a description of the materials charged to each furnace, including any nonreactive, non-HAP-containing/non-HAP-generating fluxing materials or agents. [40 CFR 63.1510(r)(1)]
 - ii. Submit a certification of compliance with the applicable operational standard for charge materials in 40 CFR 63.1506(o) for each 6-month reporting period. Each certification shall contain the information in 40 CFR 63.1516(b)(2)(v). [40 CFR 63.1510(r)(2)]
- f. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**5. Specific Recordkeeping Requirements:**

- a. The permittee shall maintain records of qualitative visual observations of the emissions from each stack and any U.S. EPA Reference Method 9 readings performed. [401 KAR 52:020, Section 10].
- b. The permittee shall maintain records of hours of operation, process weight rate (tons), as defined in 401 KAR 59:010, Section 2, and aluminum production (tons) on a monthly basis. [401 KAR 52:020, Section 10]
- c. The permittee shall maintain files of all information (including all reports and notifications) required by 40 CFR 63.10(b) and 40 CFR 63, Subpart RRR. [40 CFR 63.1517(a)]
 - i. The permittee shall retain each record for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The most recent 2 years of records shall be retained at the facility. The remaining 3 years of records may be retained off site. [40 CFR 63.1517(a)(1)]
 - ii. The permittee may retain records on microfilm, computer disks, magnetic tape, or microfiche; and [40 CFR 63.1517(a)(2)]
 - iii. The permittee may report required information on paper or on a labeled computer disk using commonly available and EPA-compatible computer software. [40 CFR 63.1517(a)(3)]
- d. In addition to the general records required by 40 CFR 63.10(b), the permittee shall maintain records of: [40 CFR 63.1517(b)]
 - i. Records of all charge materials and fluxing materials or agents for a group 2 furnace. [40 CFR 63.1517(b)(12)]
 - ii. Records of monthly inspections for proper unit labeling for each affected source and emission unit subject to labeling requirements. [40 CFR 63.1517(b)(13)]
 - iii. Records for any approved alternative monitoring or test procedure. [40 CFR 63.1517(b)(15)]
 - iv. Current copy of all required plans, including any revisions, with records documenting conformance with the applicable plan, including the OM&M plan. [40 CFR 63.1517(b)(16) and 40 CFR 63.1516(b)(16)(ii)]
 - v. For any failure to meet an applicable standard, the permittee shall maintain the following records: [40 CFR 63.1517(b)(18)]
 1. Records of the emission unit ID, monitor ID, pollutant or parameter monitored, beginning date and time of the event, end date and time of the event, cause of the deviation or exceedance and corrective action taken. [40 CFR 63.1517(b)(18)(i)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

2. Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.1506(a)(5), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. [40 CFR 63.1517(b)(18)(ii)]
- vi. For each period of startup or shutdown for which the permittee chooses to demonstrate compliance for an affected source, the permittee shall comply with 40 CFR 63.1517(b)(19)(i) or (ii). [40 CFR 63.1517(b)(19)]
 1. To demonstrate compliance based on a feed/charge rate of zero, a flux rate of zero, and the use of electricity, propane, or natural gas as the sole sources of heating or the lack of heating, the permittee shall submit a semiannual report in accordance with 40 CFR 63.1516(b)(2)(vii) or maintain the following records: [40 CFR 63.1517(b)(19)(i)]
 - A. The date and time of each startup and shutdown; [40 CFR 63.1517(b)(19)(i)(A)]
 - B. The quantities of feed/charge and flux introduced during each startup and shutdown; and [40 CFR 63.1517(b)(19)(i)(B)]
 - C. The types of fuel used to heat the unit, or that no fuel was used, during startup or shutdown; or [40 CFR 63.1517(b)(19)(i)(C)]
 2. To demonstrate compliance based on performance tests, the permittee shall maintain the following records: [40 CFR 63.1517(b)(19)(ii)]
 - A. The date and time of each startup and shutdown; [40 CFR 63.1517(b)(19)(ii)(A)]
 - B. The measured emissions in lb/hr or µg/hr or ng/hr; [40 CFR 63.1517(b)(19)(ii)(B)]
 - C. The measured feed/charge rate in tons/hr or Mg/hr from the most recent performance test associated with a production rate greater than zero, or the rated capacity of the affected source if no prior performance test data is available; and [40 CFR 63.1517(b)(19)(ii)(C)]
 - D. An explanation to support that such conditions are considered representative startup and shutdown operations. [40 CFR 63.1517(b)(19)(ii)(D)]
- e. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.
- 6. Specific Reporting Requirements:**
 - a. The permittee shall submit the OM&M plan within 90 days after startup. The plan shall be accompanied by a written certification by the permittee that the OM&M plan satisfies all requirements of 40 CFR 63.1510(b) and is otherwise consistent with the requirements of 40 CFR 63, Subpart RRR. [40 CFR 63.1510(b)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- b. The permittee shall submit a notification of compliance status report within 90 days after startup. The notification shall be signed by the responsible official who shall certify its accuracy. A complete notification of compliance status shall include the information specified in 40 CFR 63.1515(a)(1) through (10). The required information may be submitted in an operating permit application, in an amendment to an operating permit application, in a separate submittal, or in any combination. If the permittee submits the information specified in 40 CFR 63.1515 at different times or in different submittals, later submittals may refer to earlier submittals instead of duplicating and resubmitting the information previously submitted. A complete notification of compliance status report shall include: [40 CFR 63.1512(r), 40 CFR 63.1515(b)]
 - i. All information required in 40 CFR 63.9(h). The permittee shall provide a complete performance test report for each affected source and emission unit for which a performance test is required. A complete performance test report includes all data, associated measurements, and calculations (including visible emission and opacity tests). [40 CFR 63.1515(b)(1)]
 - ii. The approved site-specific test plan and performance evaluation test results for each continuous monitoring system (including a continuous emission or opacity monitoring system). [40 CFR 63.1515(b)(2)]
 - iii. Unit labeling as described in 40 CFR 63.1506(b), including process type of furnace classification and operating requirements. [40 CFR 63.1515(b)(3)]
 - iv. The OM&M plan. [40 CFR 63.1515(b)(9)]
- c. The permittee shall submit semiannual reports according to the requirements in 40 CFR 63.10(e)(3). Except, the permittee shall submit the semiannual reports within 60 days after the end of each 6-month period instead of within 30 days after the calendar half as specified in 40 CFR 63.10(e)(3)(v). When no deviation of parameters have occurred, the permittee shall submit a report stating that no excess emissions occurred during the reporting period. [40 CFR 63.1516(b)]
 - i. A report shall be submitted if any of these conditions occur during a 6-month reporting period: [40 CFR 63.1516(b)(1)]
 - 1. An excursion of a compliant process or operating parameter value or range (e.g., lime injection rate or screw feeder setting, total reactive chlorine flux injection rate, afterburner operating temperature, fabric filter inlet temperature, definition of acceptable scrap, or other approved operating parameter). [40 CFR 63.1516(b)(1)(iv)]
 - 2. An affected source (including an emission unit in a secondary aluminum processing unit) was not operated according to the requirements of 40 CFR 63, Subpart RRR. [40 CFR 63.1516(b)(1)(vi)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- ii. Each report shall include the following certification for each group 2 furnace: “Only clean charge materials were processed in any group 2 furnace during this reporting period, and no fluxing was performed or all fluxing performed was conducted using only nonreactive, non-HAP-containing/non-HAP-generating fluxing gases or agents, except for cover fluxes, during this reporting period.” [40 CFR 63.1516(b)(2) and 40 CFR 63.1516(b)(2)(v)]
- iii. A malfunction report that is required under 40 CFR 63.1516(d) shall be submitted simultaneously with the semiannual excess emissions/summary report required by 40 CFR 63.1516(b). [40 CFR 63.1516(b)(4)]
- d. For the purpose of annual certifications of compliance required by 40 CFR Part 70 or 71, the permittee shall certify continuing compliance based upon, but not limited to, the following conditions: [40 CFR 63.1516(c)]
 - i. Any period of excess emissions, as defined in 40 CFR 63.1516(b)(1), that occurred during the year were reported as required by 40 CFR 63, Subpart RRR; and [40 CFR 63.1516(c)(1)]
 - ii. All monitoring, recordkeeping, and reporting requirements were met during the year. [40 CFR 63.1516(c)(2)]
- e. If there was a malfunction during the reporting period, the permittee shall submit a report that includes the emission unit ID, monitor ID, pollutant or parameter monitored, beginning date and time of the event, end date and time of the event, cause of the deviation or exceedance and corrective action taken for each malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report shall include a list of the affected source or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emission, including, but not limited to, product-loss calculations, mass balance calculations, measurements when available, or engineering judgement based on known process parameters. The report shall also include a description of action taken by the permittee during a malfunction of an affected source to minimize emission in accordance with 40 CFR 63.1506(a)(5). [40 CFR 63.1516(d)]
- f. All reports required by 40 CFR 63, Subpart RRR not subject to the requirements in 40 CFR 63.1516(b) shall be sent to the Administrator at the appropriate address listed in 40 CFR 63.13. If acceptable to both the Administrator and the permittee, these reports may be submitted on electronic media. The Administrator retains the right to require submittal of reports subject to 40 CFR 63.1516(b) in paper format. [40 CFR 63.1516(e)]
- g. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**Emission Group D:****Process Operations**

Emission Unit #	Unit Name	Maximum Capacity (ton/hr)	Control Device	Construction Commenced
Process Area 01: Melting & Casting				
040	Dross House	2.95	Baghouse	May 2018
Process Area 02: Hot Rolling Plant				
049	Band Saw #1	158.73	----	May 2018
050	Band Saw #2	158.73	----	May 2018
051	Ingot Scalper #1	162.70	Cyclone/Wet Scrubber #1	May 2018
052	Ingot Scalper #2	162.70	Cyclone/Wet Scrubber #2	May 2018
053	Scalper Chip Pneumatic Conveying System #1	43.65	Wet Scrubber	May 2018
054	Scalper Chip Pneumatic Conveying System #2	43.65	Wet Scrubber	May 2018
061	Hot Roughing Mill	175.87	Mist Eliminator #1	May 2018
062	Hot Finishing Mill	170.53	Mist Eliminator #2	May 2018
Process Area 03: Cold Rolling Plant				
063	Cold Mill #1	243.89	AIRWASH Air Purification System – Heavy Oil Scrubber #1	May 2018
064	Cold Mill #2	243.89		May 2018
065	Cold Mill #3	243.89	AIRWASH Air Purification System – Heavy Oil Scrubber #2	May 2018

APPLICABLE REGULATIONS:

40 CFR Part 64, *Compliance Assurance Monitoring* (applicable to Emission Unit #'s 063, 064, & 065 for PM and VOC)

401 KAR 50:012, *General application*

401 KAR 59:010, *New process operations*

STATE-ORIGIN REQUIREMENTS:

401 KAR 63:020, *Potentially hazardous matter or toxic substances* (applicable to Emission Unit #'s 049 through 054)

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

PRECLUDED REGULATIONS:

401 KAR 51:017, *Prevention of significant deterioration of air quality*, for PM, PM₁₀, PM_{2.5}, and VOC,

1. Operating Limitations:

- a. The permittee shall limit dross processed in Emission Unit # 040 to meet all of the following requirements: [To preclude 401 KAR 51:017]
 - i. 22,034 tons per year on a 12-month rolling total basis; and
 - ii. The permittee shall evaluate the adequacy of permitted throughput limits taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 for PM, PM₁₀, and PM_{2.5} based upon the most recent performance test results to verify and establish emission factors. If the permitted throughput limits are not adequate to meet the emission limitations in **Section D – Source Emission Limitations and Testing Requirements** and preclude 401 KAR 51:017, the permittee shall submit an application within 180 days of completion of the test for revision of throughput limits accordingly.

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (b)**, **5. Specific Recordkeeping Requirements (c)**, **6. Specific Reporting Requirements (a)**, and **(b)**.

- b. The permittee shall limit aluminum ingots processed in each of Emission Unit #'s 049 and 050 to 457,731 tons per year per unit on a 12-month rolling total basis. [To preclude 401 KAR 51:017]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (b)** and **5. Specific Recordkeeping Requirements (d)**.

- c. The permittee shall limit aluminum ingots processed in each of Emission Unit #'s 051 and 052 to meet all of the following requirements: [To preclude 401 KAR 51:017]
 - i. 457,731 tons per year per unit on a 12-month rolling total basis; and
 - ii. The permittee shall evaluate the adequacy of permitted throughput limits taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 for PM, PM₁₀, and PM_{2.5} based upon the most recent performance test results to verify and establish emission factors. If the permitted throughput limits are not adequate to meet the emission limitations in **Section D – Source Emission Limitations and Testing Requirements** and preclude 401 KAR 51:017, the permittee shall submit an application within 180 days of completion of the test for revision of throughput limits accordingly.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**Compliance Demonstration Method:**

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (b)**, **5. Specific Recordkeeping Requirements (d)**, **6. Specific Reporting Requirements (a)**, and **(b)**.

- d. The permittee shall limit aluminum scalper chips processed in each of Emission Unit #'s 053 and 054 to 122,806 tons per year per unit on a 12-month rolling total basis. [To preclude 401 KAR 51:017]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (b)** and **5. Specific Recordkeeping Requirements (e)**.

- e. The permittee shall limit aluminum processed in Emission Unit # 061 to meet all of the following requirements: [To preclude 401 KAR 51:017]
 - i. 808,353 tons per year on a 12-month rolling total basis; and
 - ii. An amount, based upon the most recent emission factors approved by the Division, which would not cause VOC emission limitations taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 to be exceeded; and
 - iii. The permittee shall evaluate the adequacy of permitted throughput limits taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 for PM, PM₁₀, and PM_{2.5} based upon the most recent performance test results to verify and establish emission factors. If the permitted throughput limits are not adequate to meet the emission limitations in **Section D – Source Emission Limitations and Testing Requirements** and preclude 401 KAR 51:017, the permittee shall submit an application within 180 days of completion of the test for revision of throughput limits accordingly.

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (b)**, **5. Specific Recordkeeping Requirements (f)**, **6. Specific Reporting Requirements (a)**, and **(b)**.

- f. The permittee shall limit aluminum processed in Emission Unit # 062 to meet all of the following requirements: [To preclude 401 KAR 51:017]
 - i. 783,790 tons per year on a 12-month rolling total basis; and
 - ii. An amount, based upon the most recent emission factors approved by the Division, which would not cause VOC emission limitations taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 to be exceeded; and
 - iii. The permittee shall evaluate the adequacy of permitted throughput limits taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 for PM, PM₁₀, and PM_{2.5} based upon the most recent performance test results to verify and establish emission factors. If the permitted throughput limits are not adequate to meet the emission

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

limitations in **Section D – Source Emission Limitations and Testing Requirements** and preclude 401 KAR 51:017, the permittee shall submit an application within 180 days of completion of the test for revision of throughput limits accordingly.

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (b)**, **5. Specific Recordkeeping Requirements (f)**, **6. Specific Reporting Requirements (a)**, and **(b)**.

- g. The permittee shall limit aluminum processed in each of Emission Unit #'s 063 through 065 to meet all of the following requirements: [To preclude 401 KAR 51:017]
- i. 1,067,026 tons per year per unit on a 12-month rolling total basis; and
 - ii. An amount, based upon the most recent emission factors approved by the Division, which would not cause VOC emission limitations taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 to be exceeded; and
 - iii. The permittee shall evaluate the adequacy of permitted throughput limits taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 for PM, PM₁₀, and PM_{2.5} based upon the most recent performance test results to verify and establish emission factors. If the permitted throughput limits are not adequate to meet the emission limitations in **Section D – Source Emission Limitations and Testing Requirements** and preclude 401 KAR 51:017, the permittee shall submit an application within 180 days of completion of the test for revision of throughput limits accordingly.

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (b)**, **5. Specific Recordkeeping Requirements (f)**, **6. Specific Reporting Requirements (a)**, and **(b)**.

- h. For Emission Unit #'s 049 through 052 and 061 through 065, the permittee shall prepare written operating instructions and procedures that specify good operating and maintenance practices and includes, at a minimum, the following specific practices targeting VOC emissions minimization: [401 KAR 50:012, Section 1(2) and to preclude 401 KAR 51:017]
- i. For Emission Unit #'s 049 through 052:
 1. Controlling lubricant application rates per unit of production to remain within targeted ranges for ensuring process conditions are maintained at optimum levels while simultaneously preventing wasted lubricant from entering the system.
 2. Spill prevention and other waste reduction measures to ensure the coolant supplied to the system remains within the bounds of the storage and circulation system.
 - ii. For Emission Unit #'s 061 through 065:

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

1. Controlling coolant application rates per unit of production to remain within targeted ranges for ensuring process conditions are maintained at optimum levels while simultaneously preventing wasted coolant from entering the system.
2. Maintaining the supplied coolant temperature within required temperature ranges to prevent overheated coolant from being exposed to aluminum slab/strip and work/backup rolls.
3. Performing periodic physical/chemical analysis of coolant package to assess coolant conditions and evaluate excessive degradation or out-of-range specifications for key coolant properties.
4. Spill prevention and other waste reduction measures to ensure the coolant supplied to the system remains within the bounds of the storage, circulation, and filtration systems.

Compliance Demonstration Method:

Compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements (g)**.

- i. The permittee shall maintain the overall capture efficiency of the mill hooding and enclosure system at or above 90% for Emission Unit #'s 061 and 062. [To preclude 401 KAR 51:017]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **3. Testing Requirements (e)**.

- j. The permittee shall maintain the overall capture efficiency of the mill hooding and enclosure system at or above 95% for Emission Unit #'s 063 through 065. [To preclude 401 KAR 51:017]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **3. Testing Requirements (f)**.

2. Emission Limitations:

- a. The permittee shall not cause, suffer, allow, or permit any continuous emission into the open air from a control device or stack associated with any affected facility which is equal to or greater than 20 percent opacity. [401 KAR 59:010, Section 3(1)(a)]

Compliance Demonstration Method:

Compliance with the opacity standard shall be demonstrated according to **4. Monitoring Requirements (a)**.

- b. For emissions from a control device or stack, the permittee shall not cause, suffer, allow or permit the emission into the open air of PM from any affected facility which is in excess of the quantity specified in Appendix A to 401 KAR 59:010. [401 KAR 59:010, Section 3(2)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- i. For process weight rates of 0.50 ton/hr or less: 2.34 lb/hr
- ii. For process weight rates up to 30.00 tons/hr: $E = 3.59 * P^{0.62}$
- iii. For process weight rates in excess of 30.00 tons/hr: $E = 17.31 * P^{0.16}$

Where:

E = the allowable PM emissions rate (pounds/hour)

P = the process weight rate (tons/hour)

Compliance Demonstration Method:

1. For Emission Unit #'s 040, 051, 052, 061, 062, 063, 064, and 065: Compliance shall be demonstrated according to **3. Testing Requirements** (c), (d), (e), (f), (g), **4. Specific Monitoring Requirements** (b), and **5. Specific Recordkeeping Requirements** (b).
 2. For Emission Unit #'s 049, 050, 053, and 054: These units are assumed to be in compliance with the 401 KAR 59:010 PM mass emission standard
- c. The permittee shall maintain emissions at or below the limitations in the following table, where the specified emission limits include both stack and uncaptured emissions contributions: [To preclude 401 KAR 51:017]

Emission Unit #	Unit Name	Pollutant	Emission Limit
061	Hot Roughing Mill	VOC	10.76 tpy on a 12-month rolling total basis
062	Hot Finishing Mill	VOC	27.14 tpy on a 12-month rolling total basis
063-064	Cold Rolling Mill #1-2 (combined)	VOC	96.56 tpy on a 12-month rolling total basis
065	Cold Rolling Mill #3	VOC	48.28 tpy on a 12-month rolling total basis

Compliance Demonstration Method:

Compliance shall be demonstrated according to **3. Testing Requirements** (e), (f), (g), **4. Specific Monitoring Requirements** (c), and **5. Specific Recordkeeping Requirements** (h).

- d. The permittee shall not allow any affected facility to emit potentially hazardous matter or toxic substances in such quantities or duration as to be harmful to the health and welfare of humans, animals and plants. [401 KAR 63:020, Section 3]

Compliance Demonstration Method:

Based upon the emission rates of toxics and hazardous air pollutants determined by the Cabinet using information provided in the application and supplemental information submitted by the source, the Cabinet determines the affected facility to be in compliance with 401 KAR 63:020.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- e. Refer to **Section D – Source Emission Limitations and Testing Requirements** for source-wide emission limitations to preclude 401 KAR 51:017.

3. Testing Requirements:

- a. Except as provided in 401 KAR 50:045, performance tests used to demonstrate compliance with 401 KAR 59:010, Section 3 shall be conducted according to the following methods. Methods are filed by reference in 401 KAR 50:015. [401 KAR 59:010, Section 4]
 - i. For the emission rates of particulate matter and the associated moisture content, U.S. EPA Reference Method 5 shall be used. [401 KAR 59:010, Section 4(1)]
 - ii. U.S. EPA Reference Method 1 for sample and velocity traverses. [401 KAR 59:010, Section 4(2)]
 - iii. U.S. EPA Reference Method 2 for velocity and volumetric flow rate. [401 KAR 59:010, Section 4(3)]
 - iv. U.S. EPA Reference Method 3 for gas analysis. [401 KAR 59:010, Section 4(4)]
 - v. U.S. EPA Reference Method 9 for opacity of continuous emissions. [401 KAR 59:010, Section 4(5)]
 - vi. For U.S. EPA Reference Method 5, U.S. EPA Reference Method 1 shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall be 0.85 dscm (thirty (30) dscf) except that smaller sampling time or volumes, when necessitated by process variables or other factors, may be approved by the cabinet. [401 KAR 59:010, Section 4(7)]
- b. Performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted as required by the Division in accordance with 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1.
- c. Within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial start-up of the Dross House and associated control device, the permittee shall conduct performance testing to verify and establish the PM, PM₁₀, and PM_{2.5} emission factors associated with Emission Unit # 040. [To preclude 401 KAR 51:017]
 - i. Prior to performance testing, the permittee shall establish a pressure drop range for the baghouse and a volumetric flowrate range for the capture systems in accordance with the manufacturer's written instructions and operate the control devices within these ranges during the test.
 - ii. Pollutant measurement shall be made at the following locations:
 - 1. Uncontrolled exhaust from the Dross House for PM, PM₁₀, and PM_{2.5}; simultaneously with

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

2. Stack outlet from the baghouse for PM, PM₁₀, and PM_{2.5}.
- iii. Performance testing shall be conducted using the following U.S. EPA Reference Test Methods:
 1. U.S. EPA Reference Method 5 for PM; and
 2. U.S. EPA Reference Methods 201A/202 for PM₁₀ and PM_{2.5}; or
 3. Other test methods, as approved by the Division
- iv. During performance testing, the permittee shall monitor the following parameters:
 1. Process weight rate;
 2. Volumetric flow rate at each pollutant measurement location; and
 3. Volumetric flow rate at the baghouse stack discharge.
- d. Within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial start-up of the first Ingot Scalper and associated control device, the permittee shall conduct performance testing to verify and establish the PM, PM₁₀, and PM_{2.5} emission factors associated with Emission Unit #'s 051 and 052. The results from a single Ingot Scalper and associated control device are assumed to be representative of the other Ingot Scalper and control device.
 - i. Prior to performance testing, the permittee shall establish a pressure drop range for the wet scrubber in accordance with the manufacturer's written instructions and operate the control device within this range during the test.
 - ii. Pollutant measurement shall be made at the following locations:
 1. Uncontrolled exhaust from the Ingot Scalper for PM, PM₁₀, and PM_{2.5}; simultaneously with
 2. Stack outlet from the wet scrubber for PM, PM₁₀, and PM_{2.5}.
 - iii. Performance testing shall be conducted using the following U.S. EPA Reference Test Methods:
 1. U.S. EPA Reference Method 5 for PM; and
 2. U.S. EPA Reference Methods 201A/202 for PM₁₀ and PM_{2.5}; or
 3. Other methods, as approved by the Division.
 - iv. During performance testing, the permittee shall monitor the process weight rate.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- e. Within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial start-up of the Hot Roughing Mill and Hot Finishing Mill, the permittee shall conduct performance testing to verify and establish the PM, PM₁₀, PM_{2.5}, and VOC emission factors associated with Emission Unit #'s 061 and 062. [To preclude 401 KAR 51:017]
- i. Prior to performance testing, the permittee shall develop and submit a site-specific test plan to the Division at least 60 days prior to the required test date. The permittee shall propose the following in the test plan for Division review and approval:
 - 1. The reference test methods that will be used;
 - 2. The anticipated operating parameter ranges for each hot mill during the test; and
 - 3. The monitoring parameters that will be measured during the test to assess the performance of the capture system.
- ii. The performance test program shall include the following elements:
 - 1. Prior to the test, the permittee shall establish a pressure drop and volumetric exhaust flow rate range and operate the capture system within these ranges during the test;
 - 2. The permittee shall monitor process weight rate and volumetric exhaust flow rate during the test; and
 - 3. Pollutant measurement shall be made at the following locations:
 - A. Inlet to each mist eliminator for PM, PM₁₀, and PM_{2.5}; simultaneously with
 - B. Outlet of each mist eliminator for PM, PM₁₀, PM_{2.5}, and VOC.
- iii. The permittee shall perform a technical evaluation of the capture system for Emission Unit #'s 061 and 062 in conjunction with performance testing. If changes to any physical installation of the capture system and/or control device serving Emission Point #'s 061 and 062 occur that could affect capture efficiency, the permittee shall update the capture system technical evaluation and perform a repeat performance test, as necessary. The permittee may request to use relevant U.S. EPA Reference Test Methods or alternative methods to calculate the capture efficiency achieved during a performance test. Such alternative methods may include measurements of capture velocity and volumetric flow rates at the hot mill stacks. The request shall be submitted to the Division's Technical Service branch and Permit Review branch.
- f. Within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial start-up of Cold Rolling Mill #1 and 2, the permittee shall conduct performance testing to verify and establish PM, PM₁₀, PM_{2.5}, and VOC emission factors associated with Emission Unit #'s 063 through 064. [To preclude 401 KAR 51:017]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- i. Prior to performance testing, the permittee shall develop and submit a site-specific test plan to the Division at least 60 days prior to the required test date. The permittee shall propose the following in the test plan for Division review and approval:
 1. The reference test methods that will be used;
 2. The anticipated operating parameter ranges for Emission Unit #'s 063 and 064 and Heavy Oil Scrubber during the test; and
 3. The monitoring parameters that will be measured during the test, which at a minimum shall include washing oil flow rate and temperature at the clean washing oil inlet stream to the absorber column, and the distillation column vacuum pressure.
- ii. The performance test program shall include the following elements:
 1. Prior to the test, the permittee shall establish ranges for the washing oil flow rate and temperature, distillation column vacuum pressure, and volumetric exhaust flow rate in accordance with the manufacturer's written instructions and operate the control device within these ranges during the test;
 2. The permittee shall monitor process weight rate, washing oil flow rate and temperature, distillation column vacuum pressure, and volumetric exhaust flow rate during the test;
 3. Verification that the direction of airflow, through the largest hood opening, is inward using a smoke tube. The direction of airflow shall be monitored for at least 1 hour, with checks made no more than 10 minutes apart; and
 4. Pollutant measurement shall be made at the following locations:
 - A. Inlet to the associated heavy oil scrubber for PM, PM₁₀, and PM_{2.5} using U.S. EPA Reference Method 17/202 and for VOC using U.S. EPA Reference Method 25A; simultaneously with
 - B. Outlet of the associated heavy oil scrubber for PM, PM₁₀, and PM_{2.5} using U.S. EPA Reference Method 17/202 and for VOC using U.S. EPA Reference Method 25A.
- iii. The permittee shall perform an initial technical evaluation of the capture system for Emission Unit #'s 063 and 064 in conjunction with performance testing. If changes to any physical installation of the capture system and/or control device serving the cold rolling mills occur that could affect capture efficiency, the permittee shall update the capture system technical evaluation and perform a repeat performance test, as necessary. The permittee may request to use relevant U.S. EPA Reference Test Methods or alternative methods to calculate the capture efficiency achieved during a performance test. Such alternative methods may include measurements of capture

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

velocity and volumetric flow rates at each heavy oil scrubber. The request shall be submitted to the Division's Technical Service branch and Permit Review branch.

- iv. The permittee may use other test methods, as approved by the Division.
- g. Within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial start-up of Cold Rolling Mill #3, the permittee shall conduct performance testing to verify and establish PM, PM₁₀, PM_{2.5}, and VOC emission factors associated with Emission Unit # 065. [To preclude 401 KAR 51:017]
 - i. Prior to performance testing, the permittee shall develop and submit a site-specific test plan to the Division at least 60 days prior to the required test date. The permittee shall propose the following in the test plan for Division review and approval:
 - 1. The reference test methods that will be used;
 - 2. The anticipated operating parameter ranges for Emission Unit # 065 and Heavy Oil Scrubber during the test; and
 - 3. The monitoring parameters that will be measured during the test, which at a minimum shall include washing oil flow rate and temperature at the clean washing oil inlet stream to the absorber column, and the distillation column vacuum pressure.
 - ii. The performance test program shall include the following elements:
 - 1. Prior to the test, the permittee shall establish ranges for the washing oil flow rate and temperature, distillation column vacuum pressure, and volumetric exhaust flow rate in accordance with the manufacturer's written instructions and operate the control device within these ranges during the test;
 - 2. The permittee shall monitor process weight rate, washing oil flow rate and temperature, distillation column vacuum pressure, and volumetric exhaust flow rate during the test;
 - 3. Verification that the direction of airflow, through the largest hood opening, is inward using a smoke tube. The direction of airflow shall be monitored for at least 1 hour, with checks made no more than 10 minutes apart; and
 - 4. Pollutant measurement shall be made at the following locations:
 - A. Inlet to the associated heavy oil scrubber for PM, PM₁₀, and PM_{2.5} using U.S. EPA Reference Method 17/202 and for VOC using U.S. EPA Reference Method 25A; simultaneously with

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- B. Outlet of the associated heavy oil scrubber for PM, PM₁₀, and PM_{2.5} using U.S. EPA Reference Method 17/202 and for VOC using U.S. EPA Reference Method 25A.
- iii. The permittee shall perform an initial technical evaluation of the capture system for Emission Unit # 065 in conjunction with performance testing. If changes to any physical installation of the capture system and/or control device serving the cold rolling mills occur that could affect capture efficiency, the permittee shall update the capture system technical evaluation and perform a repeat performance test, as necessary. The permittee may request to use relevant U.S. EPA Reference Test Methods or alternative methods to calculate the capture efficiency achieved during a performance test. Such alternative methods may include measurements of capture velocity and volumetric flow rates at each heavy oil scrubber. The request shall be submitted to the Division's Technical Service branch and Permit Review branch.
- iv. The permittee may use other test methods, as approved by the Division.
- h. The permittee shall conduct subsequent performance testing within 5 years of the date the previous performance test, which verified compliance with the emission limits required to preclude 401 KAR 51:017, was conducted. Performance testing shall be conducted to verify and establish the PM, PM₁₀, and PM_{2.5} emission factors associated with Emission Unit #'s 040, 051, 052, and 061 through 065 and the VOC emission factors associated with Emission Unit #'s 061 through 065. Subsequent performance testing required to preclude 401 KAR 51:017 shall satisfy all conditions specified for initial performance testing conducted to verify compliance with the emission limits required to preclude 401 KAR 51:017. [To preclude 401 KAR 51:017]
- 4. Specific Monitoring Requirements:**
- a. The permittee shall perform a qualitative visual observation of the emissions from each stack while any of the associated equipment is operating on a weekly basis. If visible emissions are present then the opacity shall be determined by using U.S. EPA Reference Method 9. [401 KAR 52:020, Section 10]
- b. The permittee shall monitor hours of operation, process weight rate (tons), as defined in 401 KAR 59:010, Section 2, aluminum production (tons), and natural gas combusted (MMscf) on a monthly basis. [401 KAR 52:020, Section 10]
- c. The permittee shall calculate monthly and 12-month rolling total emissions for VOC for each of Emission Unit #'s 061 through 065. Calculations shall be based upon emission factors most recently approved by the Division. [401 KAR 52:020, Section 10]
- d. For the baghouse controlling emissions from Emission Unit # 040, the permittee shall install, calibrate at least annually, maintain, and operate a continuous parameter monitoring system to measure and record: [401 KAR 52:020, Section 10]
- i. The differential pressure drop across the filter house; and

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- ii. The volumetric flow rate in the filter house stack to verify that it is maintained within the range recommended by the manufacturer.
- e. For the wet scrubbers controlling emissions from Emission Unit #'s 051 and 052, the permittee shall install, calibrate at least annually, maintain, and operate a continuous parameter monitoring system to measure and record the differential pressure drop across the wet scrubber. [401 KAR 52:020, Section 10]
- f. For the mist eliminators controlling emissions from Emission Unit #'s 061 and 062, the permittee shall install, calibrate at least annually, maintain, and operate a monitoring device to measure the differential pressure drop. Data shall be monitored and recorded at least once per day when the associated mill is in operation. [401 KAR 52:020, Section]
- g. For the heavy oil scrubbers controlling emissions from Emission Unit #'s 063 through 065, the permittee shall: [401 KAR 52:020, Section 10]
 - i. Install, calibrate at least annually, operate, and maintain a continuous monitoring system to measure and record the washing oil flow rate at the clean washing oil inlet to the absorber column of each heavy oil scrubber;
 - ii. Install, calibrate at least annually, operate, and maintain a monitoring device to measure the distillation column vacuum pressure when the distillation section of the heavy oil scrubber is in operation. Data shall be monitored and recorded at least once per day when the distillation system is in operation; and
 - iii. Install, calibrate at least annually, operate, and maintain a monitoring device to measure the temperature of the washing oil in the clean washing oil inlet stream to each absorber. Data shall be monitored and recorded at least once per day when the system is in operation.
 - iv. Maintain the volumetric flow rate in the heavy oil scrubber stack to verify that it is maintained within the range recommended by the manufacturer.
- h. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

5. Specific Recordkeeping Requirements:

- a. The permittee shall maintain records of qualitative visual observations of the emissions from each stack and any U.S. EPA Reference Method 9 readings performed. [401 KAR 52:020, Section 10]
- b. The permittee shall maintain records of hours of operation, process weight rate (tons), as defined in 401 KAR 59:010, Section 2, aluminum production (tons), and natural gas combusted (MMscf) on a monthly basis. [401 KAR 52:020, Section 10]
- c. The permittee shall maintain records of 12-month rolling total dross processed (tons) for Emission Unit # 040. [401 KAR 52:020, Section 10]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- d. The permittee shall maintain records of 12-month rolling total aluminum ingots processed (tons) for each of Emission Unit #'s 049 through 052. [401 KAR 52:020, Section 10]
- e. The permittee shall maintain records of 12-month rolling total aluminum scalper chips processed (tons) in each of Emission Unit #'s 053 and 054. [401 KAR 52:020, Section 10]
- f. The permittee shall maintain records of 12-month rolling total aluminum processed (tons) in each of Emission Unit #'s 061 through 065. [401 KAR 52:020, Section 10]
- g. The permittee shall maintain: [401 KAR 52:020, Section 10, 401 KAR 50:012, Section 1(2)]
 - i. A copy of the operating instructions and procedures required by 401 KAR 50:012, Section 1(2); and
 - ii. Records that demonstrate the work practice standards required by 401 KAR 50:012, Section 1(2) are maintained.
- h. The permittee shall maintain records of monthly and 12-month rolling total emissions for VOC for each of Emission Unit #'s 061 through 065. [401 KAR 52:020, Section 10]
- i. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

6. Specific Reporting Requirements:

- a. The permittee shall submit, concurrently with results from performance testing conducted to preclude 401 KAR 51:017, an evaluation of the adequacy of permitted throughput limits taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 based upon the results from performance testing conducted to preclude 401 KAR 51:017. [401 KAR 52:020, Section 10]
- b. The permittee shall include, in the semi-annual report, a confirmatory statement that: [401 KAR 52:020, Section 10]
 - i. “Performance testing conducted for PM, PM₁₀, PM_{2.5}, and VOC yielded results demonstrating that permitted throughput limits are adequate for the project authorized by V-18-001 to preclude 401 KAR 51:017.”;
 - i. “Performance testing conducted for PM, PM₁₀, PM_{2.5}, and VOC yielded results demonstrating that permitted throughput limits are not adequate for the project authorized by V-18-001 to preclude 401 KAR 51:017.”; or
 - ii. “No performance testing for PM, PM₁₀, PM_{2.5}, or VOC was conducted during the reporting period.”
- c. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

7. Specific Control Equipment Operating Conditions:

- a. The baghouse on Emission Unit # 040 shall be operated at all times the dross process operation is actively handling dross. [To preclude 401 KAR 51:017]
- b. The Venturi scrubber on Emission Unit #'s 051 and 052 shall be operated at all times the respective Emission Unit is in operation. [To preclude 401 KAR 51:017]
- c. The mist eliminators on Emission Unit #'s 061 and 062 shall be operated at all times the respective Emission Unit is in operation. [To preclude 401 KAR 51:017]
- d. The heavy oil scrubbers on Emission Unit #'s 063 through 065 shall be operated at all times the respective Emission Unit is in operation. [To preclude 401 KAR 51:017]
- e. Records regarding the maintenance of the control equipment shall be maintained. [401 KAR 52:020, Section 10]
- f. Uncaptured emissions shall be limited by good ventilation practices either by [To preclude 401 KAR 51:017]:
 - i. Complying with ACGIH capture and collection system design guidelines; or
 - ii. For Emission Unit # 040, implementing industry-standard ventilation system design practices for minimizing air pollutant emissions from dross handling and loadout within the Dross House.
- g. Refer to **Section E – Source Control Equipment Requirements** for additional requirements.

8. Compliance Certification Requirements:

See **Section I – Compliance Schedule**

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Group E:

Direct Heat Exchanges w/ Captured Emissions

Emission Unit #	Unit Name	Maximum Aluminum Processing Capacity (ton/hr)	Burner Maximum Capacity (MMBtu/hr)	Control Device	Construction Commenced
Process Area 02: Hot Rolling Plant					
041	Homogenizing Batch Furnace #1	5.51	23.8	----	May 2018
042	Homogenizing Batch Furnace #2	5.51	23.8	----	May 2018
043	Homogenizing Batch Furnace #3	5.51	23.8	----	May 2018
044	Homogenizing Batch Furnace #4	5.51	23.8	----	May 2018
045	Homogenizing Batch Furnace #5	5.51	23.8	----	May 2018
046	Homogenizing Batch Furnace #6	5.51	23.8	----	May 2018
056	Pusher Furnace #1	75.25	79.4	---	May 2018
057	Pusher Furnace #2	75.25	79.4	---	May 2018
058	Pusher Furnace #3	75.25	79.4	---	May 2018
059	Pusher Furnace #4	75.25	79.4	---	May 2018
060	Pusher Furnace #5	75.25	79.4	---	May 2018

APPLICABLE REGULATIONS:**401 KAR 59:010**, *New process operations***STATE-ORIGIN REQUIREMENTS:****401 KAR 63:020**, *Potentially hazardous matter or toxic substances***PRECLUDED REGULATIONS:****401 KAR 51:017**, *Prevention of significant deterioration of air quality*, for PM, PM₁₀, PM_{2.5}, NO_x, CO, VOC, & GHG**1. Operating Limitations:**

- a. The permittee shall limit natural gas combustion in each of Emission Unit #'s 041 through 046 to meet all of the following requirements: [To preclude 401 KAR 51:017]
 - i. 25.5 MMscf per year per unit on a 12-month rolling total basis; and
 - ii. An amount, based upon the most recent emission factors approved by the Division, which would not cause NO_x emission limitations taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 to be exceeded.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements** (b) and **5. Specific Recordkeeping Requirements** (c).

- b. The permittee shall limit natural gas combustion in each of Emission Unit #'s 056 through 060 to meet all of the following requirements: [To preclude 401 KAR 51:017]
 - i. 97.6 MMscf per year per unit on a 12-month rolling total basis; and
 - ii. An amount, based upon the most recent emission factors approved by the Division, which would not cause NO_x emission limitations taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 to be exceeded.

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements** (b) and **5. Specific Recordkeeping Requirements** (c).

- c. The permittee shall prepare and maintain for Emission Unit #'s 041 through 046, and 056 through 060 within 90 days of startup, a good combustion and operations practices plan (GCOP) that defines, measures, and verifies the use of operational and design practices for minimizing NO_x emissions. Any revisions requested by the Division shall be made in accordance with the timeframe specified in the Division's request for revisions and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Division's inspection. The plan shall include a list of combustion optimization practices and a means of verifying the practices have occurred. Combustion optimization practices shall include, but not be limited to: [To preclude 401 KAR 51:017]
 - i. For Emission Unit #'s 041 through 046:
 - 1. Periodic preventative maintenance of gas supply valves in accordance with the manufacturer's recommended procedures and schedule.
 - 2. Periodic calibration of gas supply meter in accordance with the manufacturer's recommended procedures and schedule.
 - 3. Periodic calibration of furnace pressure control system in accordance with the manufacturer's recommended procedures and schedule.
 - 4. Installing, operating, and maintaining a combustion system that includes air to fuel ratio control for improved fuel efficiency.
 - ii. For Emission Unit #'s 056 through 060:
 - 1. Installing and maintaining seals and modern insulation media to minimize heat losses.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

2. Periodic preventative maintenance of gas supply valves in accordance with the manufacturer’s recommended procedures and schedule.
3. Periodic calibration of gas supply meter in accordance with the manufacturer’s recommended procedures and schedule.
4. Periodic calibration of furnace pressure control system in accordance with the manufacturer’s recommended procedures and schedule.
5. Installing, operating, and maintaining a combustion system that includes air to fuel ratio control for improved fuel efficiency.

Compliance Demonstration Method:

Compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements (d), (e), and 6. Specific Reporting Requirements (a).**

2. Emission Limitations:

- a. The permittee shall not cause, suffer, allow, or permit any continuous emission into the open air from a control device or stack associated with any affected facility which is equal to or greater than 20 percent opacity. [401 KAR 59:010, Section 3(1)(a)]

Compliance Demonstration Method:

Compliance with the opacity standard shall be demonstrated according to **4. Specific Monitoring Requirements (a)** and **5. Specific Recordkeeping Requirements (a).**

- b. For emissions from a control device or stack, the permittee shall not cause, suffer, allow or permit the emission into the open air of PM from any affected facility which is in excess of 2.34 lb/hr. [401 KAR 59:010, Section 3(2)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **3. Testing Requirements (c), (d), 4. Specific Monitoring Requirements (b), and 5. Specific Recordkeeping Requirements (b).**

- c. The permittee shall maintain emissions at or below the limitations in the following table: [To preclude 401 KAR 51:017]

Emission Unit #	Unit Name	Pollutant	Emission Limit
041 – 046	Homogenizing Batch Furnace #1-6 (each unit)	NO _x	2.37 tons on a 12-month rolling total basis
056 – 060	Pusher Furnace #1-5 (each unit)	NO _x	9.06 tons on a 12-month rolling total basis

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**Compliance Demonstration Method:**

Compliance shall be demonstrated according to **3. Testing Requirements** (c), (d), **4. Specific Monitoring Requirements** (c), and **5. Specific Recordkeeping Requirements** (f).

- d. The permittee shall not allow any affected facility to emit potentially hazardous matter or toxic substances in such quantities or duration as to be harmful to the health and welfare of humans, animals and plants. [401 KAR 63:020, Section 3]

Compliance Demonstration Method:

Based upon the emission rates of toxics and hazardous air pollutants determined by the Cabinet using information provided in the application and supplemental information submitted by the source, the Cabinet determines the affected facility to be in compliance with 401 KAR 63:020.

- e. Refer to **Section D – Source Emission Limitations and Testing Requirements** for source-wide emission limitations to preclude 401 KAR 51:017.

3. Testing Requirements:

- a. Except as provided in 401 KAR 50:045, performance tests used to demonstrate compliance with 401 KAR 59:010, Section 3 shall be conducted according to the following methods. Methods are filed by reference in 401 KAR 50:015. [401 KAR 59:010, Section 4]
 - i. For the emission rates of particulate matter and the associated moisture content, U.S. EPA Reference Method 5 shall be used. [401 KAR 59:010, Section 4(1)]
 - ii. U.S. EPA Reference Method 1 for sample and velocity traverses. [401 KAR 59:010, Section 4(2)]
 - iii. U.S. EPA Reference Method 2 for velocity and volumetric flow rate. [401 KAR 59:010, Section 4(3)]
 - iv. U.S. EPA Reference Method 3 for gas analysis. [401 KAR 59:010, Section 4(4)]
 - v. U.S. EPA Reference Method 9 for opacity of continuous emissions. [401 KAR 59:010, Section 4(5)]
 - vi. For U.S. EPA Reference Method 5, U.S. EPA Reference Method 1 shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall be 0.85 dscm (thirty (30) dscf) except that smaller sampling time or volumes, when necessitated by process variables or other factors, may be approved by the cabinet. [401 KAR 59:010, Section 4(7)]
- b. Performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted as required by the Division in accordance with 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- c. The permittee shall conduct performance testing to verify and establish the PM, PM₁₀, PM_{2.5}, and NO_x, emission factors associated with Emission Unit #'s 041 through 046 and 055 through 060. [To preclude 401 KAR 51:017]
 - i. Initial performance testing shall be conducted:
 1. For the Homogenizing Batch Furnaces, within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial start-up of the first Homogenizing Batch Furnace. The results from a single Homogenizing Batch Furnace are assumed to be representative of each Homogenizing Batch Furnace. The permittee shall monitor natural gas usage during the test.
 2. For the Pusher Furnaces, within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial start-up of the first Pusher Furnace. The results from a single Pusher Furnace are assumed to be representative of each Pusher Furnace. The permittee shall monitor natural gas usage during the test.
 - ii. Performance testing shall be conducted using the following U.S. EPA Reference Test Methods:
 1. U.S EPA Reference Method 5 for PM;
 2. U.S. EPA Reference Methods 201A/202 for PM₁₀ and PM_{2.5}; and
 3. U.S. EPA Reference Method 7 for NO_x; or
 4. Other methods, as approved by the Division.
 - iii. In lieu of PM, PM₁₀, and PM_{2.5} performance testing for Emission Unit #'s 041 through 046, the PM, PM₁₀, and PM_{2.5} performance testing for Emission Unit #'s 056 through 060 may be considered representative for Emission Unit #'s 041 through 046.
- d. The permittee shall conduct subsequent performance testing within 5 years of the date the previous performance test, which verified compliance with the emission limits required to preclude 401 KAR 51:017, was conducted. Performance testing shall be conducted to verify and establish the PM, PM₁₀, PM_{2.5}, and NO_x emission factors associated with Emission Unit #'s 041 through 046 and 056 through 060. Subsequent performance testing conducted to verify compliance with the emission limits required to preclude 401 KAR 51:017 shall: [401 KAR 51:017]
 - i. Satisfy all conditions for initial performance testing required to preclude 401 KAR 51:017.
 - ii. Not be repeated on a given Homogenizing Batch Furnace until all Homogenizing Batch Furnaces have completed a performance testing cycle.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

iii. Not be repeated on a given Pusher Furnace until all Pusher Furnaces have completed a performance testing cycle.

e. Refer to **Section G – General Provisions** for additional requirements.

4. Specific Monitoring Requirements:

- a. The permittee shall perform a qualitative visual observation of the emissions from each stack while any of the associated equipment is operating on a weekly basis. If visible emissions are present then the opacity shall be determined by using U.S. EPA Reference Method 9. [401 KAR 52:020, Section 10]
- b. The permittee shall monitor hours of operation, process weight rate (tons), as defined in 401 KAR 59:010, Section 2, aluminum production (tons), and natural gas combusted (MMscf) on a monthly basis. [401 KAR 52:020, Section 10]
- c. The permittee shall calculate monthly and 12-month rolling total emissions for NO_x for each of Emission Unit #'s 041 through 046 and 056 through 060. Calculations shall be based upon emission factors most recently approved by the Division. [401 KAR 52:020, Section 10, and to preclude 401 KAR 51:017]
- d. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

5. Specific Recordkeeping Requirements:

- a. The permittee shall maintain records of qualitative visual observations of the emissions from each stack and any U.S. EPA Reference Method 9 readings performed. [401 KAR 52:020, Section 10]
- b. The permittee shall maintain records of hours of operation, process weight rate (tons), as defined in 401 KAR 59:010, Section 2, aluminum production (tons), and natural gas combusted (MMscf) on a monthly basis. [401 KAR 52:020, Section 10]
- c. The permittee shall maintain records of 12-month rolling total natural gas combustion (MMscf) for each of Emission Unit #'s 041 through 046 and 056 through 060. [401 KAR 52:020, Section 10]
- d. The permittee shall maintain a copy of the GCOP plan as well as any revisions. [401 KAR 52:020, Section 10 and to preclude 401 KAR 51:017]
- e. The permittee shall maintain records of any time that Emission Units #'s 041 through 046, and 056 through 060 were not operated according to the GCOP plan with a description of the situation and actions taken to remedy the issue. [401 KAR 52:020, Section 10]
- f. The permittee shall maintain records of monthly and 12-month rolling total emissions for NO_x for each of Emission Unit #'s 041 through 046 and 056 through 060. [401 KAR 52:020, Section 10]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- g. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

6. Specific Reporting Requirements:

- a. The permittee shall include, in the semi-annual report, any time that Emission Unit #'s 041 through 046 and 056 through 060, were not operated according to the GCOP plan required to preclude 401 KAR 51:017 with a description of the situation and actions taken to remedy the issue. [401 KAR 52:020, Section 10]
- b. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Group F:

Annealing Furnaces

Description:

Emission Unit #	Unit Name	Maximum Aluminum Processing Capacity (ton/hr)	Burner Maximum Capacity (MMBtu/hr)	Stack ID	Construction Commenced
Process Area 03: Cold Rolling Plant					
066	Annealing Furnace #1	4.59	9.6	S26	May 2018
067	Annealing Furnace #2	4.59	9.6	S26	May 2018
068	Annealing Furnace #3	4.59	9.6	S26	May 2018
069	Annealing Furnace #4	4.59	9.6	S26	May 2018
070	Annealing Furnace #5	4.59	9.6	S26	May 2018
071	Annealing Furnace #6	4.59	9.6	S27	May 2018
072	Annealing Furnace #7	4.59	9.6	S27	May 2018
073	Annealing Furnace #8	4.59	9.6	S27	May 2018
074	Annealing Furnace #9	4.59	9.6	S27	May 2018
075	Annealing Furnace #10	4.59	9.6	S27	May 2018
076	Annealing Furnace #11	4.59	9.6	S28	May 2018
077	Annealing Furnace #12	4.59	9.6	S28	May 2018
078	Annealing Furnace #13	4.59	9.6	S28	May 2018
079	Annealing Furnace #14	4.59	9.6	S28	May 2018
080	Annealing Furnace #15	4.59	9.6	S28	May 2018
081	Annealing Furnace #16	4.59	9.6	S30	May 2018
082	Annealing Furnace #17	4.59	9.6	S30	May 2018
083	Annealing Furnace #18	4.59	9.6	S30	May 2018
084	Annealing Furnace #19	4.59	9.6	S30	May 2018
085	Annealing Furnace #20	4.59	9.6	S30	May 2018

* These Emission Units are uncontrolled

APPLICABLE REGULATIONS:**401 KAR 59:015**, *New indirect heat exchangers***401 KAR 63:002, Section 2(4)(iii)**, *40 C.F.R. 63.7480 to 63.7575, Tables 1 to 13 (Subpart DDDDD), National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters***PRECLUDED REGULATIONS:****401 KAR 51:017**, *Prevention of significant deterioration of air quality, for PM, PM₁₀, PM_{2.5}, NO_x, CO, VOC, & GHG*

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**1. Operating Limitations:**

- a. At all times, the permittee shall operate and maintain the affected sources (as defined in 40 CFR 63.7490), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.7500(a)(3)]
- b. The permittee shall be in compliance with the emission limits, work practice standards, and operating limits in 40 CFR 63, Subpart DDDDD. These emission and operating limits apply at all times the affected unit is operating except for periods noted in 40 CFR 63.7500(f). [40 CFR 63.7505(a)]
- c. The permittee shall conduct a tune-up of each process heater biennially as specified in 40 CFR 63.7540(a)(10)(i) through (vi). Each biennial tune-up specified in 40 CFR 63.7540(a)(11) shall be conducted no more than 25 months after the previous tune-up. The first biennial tune-up shall be no later than 25 months after the initial startup of the affected source. If the unit is not operating on the required date for a tune-up, the tune-up shall be conducted within 30 calendar days of startup [40 CFR 63.7500(a)(1) referencing Item 2. of 40 CFR 63, Subpart DDDDD, Table 3; 40 CFR 63.7540(a)(11); 40 CFR 63.7515(d); and 40 CFR 63.7540(a)(13)]
 - i. As applicable, inspect the burner, and clean or replace any components of the burner as necessary (burner inspection may be performed any time prior to the tune-up or delayed until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment; [40 CFR 63.7540(a)(10)(i)]
 - ii. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available; [40 CFR 63.7540(a)(10)(ii)]
 - iii. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the inspection may be delayed until the next scheduled unit shutdown); [40 CFR 63.7540(a)(10)(iii)]
 - iv. Optimize the total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_x requirements to which the unit is subject; [40 CFR 63.7540(a)(10)(iv)]
 - v. Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

and after the adjustments are made). Measurements may be taken using a portable CO analyzer; and [40 CFR 63.7540(a)(10)(v)]

- vi. Maintain on-site and submit, if requested by the Administrator, a report containing the information in 40 CFR 63.7540(a)(10)(vi)(A) through (C), [40 CFR 63.7540(a)(10)(vi)]
 1. The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater; and [40 CFR 63.7540(a)(10)(vi)(A)]
 2. A description of any corrective actions taken as a part of the tune-up [40 CFR 63.7540(a)(10)(vi)(B)].

Compliance Demonstration Method:

The permittee shall demonstrate initial compliance with the applicable work practice standards in 40 CFR 63, Subpart DDDDD, Table 3 within the biennial schedule as specified in 40 CFR 63.7515(d) following the initial compliance date specified in 40 CFR 63.7495(a). Thereafter, the permittee is required to complete the biennial tune-up as specified in 40 CFR 63.7515(d). [40 CFR 63.7510(g)]

- d. The permittee shall limit natural gas combustion in each of Emission Unit #'s 066 through 085 to meet all of the following requirements: [401 KAR 51:017]
 - i. 12.1 MMscf per year per unit on a 12-month rolling total basis; and
 - ii. An amount, based upon the most recent emission factors approved by the Division, which would not cause NO_x emission limitations taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 to be exceeded.

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements** (a) and **5. Specific Recordkeeping Requirements** (f).

- e. The permittee shall prepare and maintain for Emission Unit #'s 066 through 085, within 90 days of startup, a good combustion and operations practices plan (GCOP) that defines, measures, and verifies the use of operational and design practices for minimizing NO_x emissions. Any revisions requested by the Division shall be made in accordance with the timeframe specified in the Division's request for revisions and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Division's inspection. The plan shall include a list of combustion optimization practices and a means of verifying the practices have occurred. Combustion optimization practices shall include, but not be limited to: [401 KAR 51:017]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- i. Installing and maintaining seals and modern insulation media to minimize heat losses.
- ii. Periodic preventative maintenance of gas supply valves in accordance with the manufacturer's recommended procedures and schedule.
- iii. Periodic calibration of gas supply meter in accordance with the manufacturer's recommended procedures and schedule.
- iv. Periodic calibration of furnace pressure control system in accordance with the manufacturer's recommended procedures and schedule.
- v. Installing, operating, and maintaining a combustion system that includes air to fuel ratio control for improved fuel efficiency.

Compliance Demonstration Method:

Compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements** (g), (h), and **6. Specific Reporting Requirements** (j).

- f. During a startup period or shutdown period, the permittee shall comply with the work practice standards established in 401 KAR 59:015, Section 7: [401 KAR 59:015, Section 7]
 - i. The permittee shall comply with 401 KAR 50:055, Section 2(5); [401 KAR 59:015, Section 7(1)(a)]
 - ii. The frequency and duration of startup periods or shutdown periods shall be minimized by the affected facility; [401 KAR 59:015, Section 7(1)(b)]
 - iii. All reasonable steps shall be taken by the permittee to minimize the impact of emissions on ambient air quality from the affected facility during startup periods and shutdown periods; [401 KAR 59:015, Section 7(1)(c)]
 - iv. Startups and shutdowns shall be conducted according to either: [401 KAR 59:015, Section 7(1)(e)]
 1. The manufacturer's recommended procedures; or [401 KAR 59:015, Section 7(1)(e)1.]
 2. Recommended procedures for a unit of similar design, for which manufacturer's recommended procedures are available, as approved by the cabinet based on documentation provided by the permittee. [401 KAR 59:015, Section 7(1)(e)2.]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements** (j).

2. Emission Limitations:

- a. PM emissions shall not exceed 0.32 lb/MMBtu. [401 KAR 59:015, Section 4(1)(c)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Compliance Demonstration Method:

Compliance shall be demonstrated according to **3. Testing Requirements** (c), (d), **4. Specific Monitoring Requirements** (a), and **5. Specific Recordkeeping Requirements** (a).

- b. Opacity shall not exceed 20 percent except: [401 KAR 59:015, Section 4(2)]
 - i. A maximum of 40 percent opacity shall be allowed for a maximum of 6 consecutive minutes in any 60 consecutive minutes during fire box cleaning or soot blowing; and [401 KAR 59:015, Section 4(2)(b)]
 - ii. For emissions from an affected facility caused by building a new fire, emissions during the period required to bring the boiler up to operating conditions shall be allowed, if the method used is recommended by the manufacturer and the time does not exceed the manufacturer’s recommendations. [401 KAR 59:015, Section 4(2)(c)]

Compliance Demonstration Method:

The unit is assumed to be in compliance with the 401 KAR 59:015 opacity emission standard while combusting natural gas.

- c. Sulfur dioxide (SO₂) emissions shall not exceed 1.1 lb/MMBtu. [401 KAR 59:015, Section 5(1)(c)2.]

Compliance Demonstration Method:

The unit is assumed to be in compliance with the 401 KAR 59:015 SO₂ emission standard while combusting natural gas.

- d. The permittee shall maintain emissions at or below the limitations in the following table: [To preclude 401 KAR 51:017]

Emission Unit #	Unit Name	Pollutant	Emission Limit
066-085	Annealing Furnace #1-20 (each unit)	NO _x	1.41 tpy on a 12-month rolling total basis

Compliance Demonstration Method:

Compliance shall be demonstrated according to **3. Testing Requirements** (b), (d), **4. Specific Monitoring Requirements** (b), and **5. Specific Recordkeeping Requirements** (i).

- e. Refer to **Section D – Source Emission Limitations and Testing Requirements** for source-wide emission limitations to preclude 401 KAR 51:017.

3. Testing Requirements:

- a. Performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted as required by the Division in accordance with 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- b. Within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial start-up of the first Annealing Furnace serving an Annealing Furnace stack (i.e., Emission Unit #'s 066 through 070 serving stack S26, Emission Unit #'s 071 through 075 serving stack S27, Emission Unit #'s 076 through 080 serving stack S28, and Emission Unit #'s 081 through 085 serving stack S30), the permittee shall conduct performance testing to verify and establish the NO_x emission factors associated with Emission Unit #'s 066 through 085. [To preclude 401 KAR 51:017]
 - i. Performance testing shall:
 - 1. Be conducted on one Annealing Furnace ducted to each Annealing Furnace Stack.
 - 2. Performance test results for each Annealing Furnace are assumed to be representative of each Annealing Furnace ducted to the same Annealing Furnace Stack.
 - 3. Include monitoring of natural gas usage during the test.
 - ii. Performance testing shall be conducted using the following U.S. EPA Reference Test Methods:
 - 1. U.S. EPA Reference Method 7 for NO_x; or
 - 2. Other methods, as approved by the Division.
- c. Within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial start-up of the first Annealing Furnace the permittee shall conduct performance testing to verify and establish the PM, PM₁₀, and PM_{2.5} emission factors associated with Emission Unit #'s 066 through 085. [To preclude 401 KAR 51:017]
 - i. Performance testing shall:
 - 1. Be assumed to be representative of each Annealing Furnace.
 - 2. Include monitoring of natural gas usage during the test.
 - ii. Performance testing shall be conducted using the following U.S. EPA Reference Test Methods:
 - 1. U.S. EPA Reference Method 5 for PM;
 - 2. U.S. EPA Reference Methods 201A/202 for PM₁₀ and PM_{2.5}; or
 - 3. Other methods, as approved by the Division.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- d. The permittee shall conduct subsequent performance testing within 5 years of the date the previous performance test, which verified compliance with the emission limits required to preclude 401 KAR 51:017, was conducted. Performance testing shall be conducted to verify and establish the PM, PM₁₀, PM_{2.5}, and NO_x emission factors associated with Emission Unit #'s 066 through 085. Subsequent performance testing conducted to verify compliance with the emission limits required to preclude 401 KAR 51:017 shall: [To preclude 401 KAR 51:017]
 - i. Satisfy all conditions for initial performance testing required to preclude 401 KAR 51:017.0
 - ii. Subsequent performance testing shall not be repeated on a given Annealing Furnace serving an Annealing Furnace Stack until all Annealing Furnaces serving the same Annealing Furnace Stack have completed a performance testing cycle.
- e. Refer to **Section G – General Provisions** for additional requirements.

4. Specific Monitoring Requirements:

- a. The permittee shall monitor natural gas combusted (MMscf) on a monthly basis. [401 KAR 52:020, Section 10]
- b. The permittee shall calculate monthly and 12-month rolling total emissions of NO_x for each of Emission Unit #'s 066 through 085. Calculations shall be based upon emissions factors most recently approved by the Division. [401 KAR 52:020, Section 10, and to preclude 401 KAR 51:017]
- c. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

5. Specific Recordkeeping Requirements:

- a. The permittee shall maintain records of natural gas combusted (MMscf) on a monthly basis. [401 KAR 52:020, Section 10]
- b. The permittee shall keep records according to 40 CFR 63.7555(a)(1) and (2). [40 CFR 63.7555(a)]
 - i. A copy of each notification and report submitted to comply with 40 CFR 63, Subpart DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report submitted, according to the requirements in 40 CFR 63.10(b)(2)(xiv). [40 CFR 63.7555(a)(1)]
 - ii. Records of performance tests, fuel analyses, or other compliance demonstrations and performance evaluations as required in 40 CFR 63.10(b)(2)(viii) [40 CFR 63.7555(a)(2)]
- c. Records shall be in a form suitable and readily available for expeditious review, according to 40 CFR 63.10(b)(1). [40 CFR 63.7560(a)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- d. As specified in 40 CFR 63.10(b)(1), the permittee shall keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. [40 CFR 63.7560(b)]
- e. The permittee shall keep each record on site, or they shall be accessible from on site (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1). Records can be kept off site for the remaining 3 years. [40 CFR 63.7560(c)]
- f. The permittee shall maintain record of 12-month rolling total natural gas combustion (MMscf) for each of Emission Unit #'s 066 through 085. [401 KAR 52:020, Section 10]
- g. The permittee shall maintain a copy of the GCOP plan as well as any revisions. [401 KAR 52:020, Section 10]
- h. The permittee shall maintain records of any time that Emission Unit #'s 066 through 085 were not operated according to the GCOP plan with a description of the situation and actions taken to remedy the issue. [401 KAR 52:020, Section 10]
- i. The permittee shall maintain records of monthly and 12-month rolling total emissions for NO_x for each of Emission Unit #'s 066 through 085. [401 KAR 52:020, Section 10]
- j. The permittee shall document the actions, including duration of the startup period, during startup period and shutdown periods by signed, contemporaneous logs or other relevant evidence. [401 KAR 59:015, Section 7(1)(d)]
- k. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

6. Specific Reporting Requirements:

- a. The permittee shall submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in 40 CFR 63.7545(e). [40 CFR 63.7530(f)]
- b. The permittee shall report each instance in which an applicable emission limit and operating limit in 40 CFR 63, Subpart DDDDD Tables 1 through 4 or 11 through 13 was not met. These instances are deviations from the emission limits or operating limits, respectively, in 40 CFR 63, Subpart DDDDD. These deviations shall be reported according to the requirements in 40 CFR 63.7550. [40 CFR 63.7540(b)]
- c. The permittee shall submit to the Administrator all of the notifications in 40 CFR 63.7(b) and (c), 40 CFR 63.8(e), (f)(4) and (6), and 40 CFR 63.9(b) through (h) as applicable by the dates specified. [40 CFR 63.7545(a)]
- d. As specified in 40 CFR 63.9(b)(4) and (5), the permittee shall submit an Initial Notification not later than 15 days after the actual date of startup of the affected source. [40 CFR 63.7545(c)].

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- e. The permittee shall submit a Notification of Compliance Status. The Notification of Compliance Status shall contain the information specified in 40 CFR 63.7545(e)(1) and (8) and shall be submitted within 60 days of the compliance date specified at 40 CFR 63.7495(b). [40 CFR 63.7545(e)]
 - i. A description of the affected unit(s) including identification of which subcategories the unit is in, the design heat input capacity of the unit, a description of the add-on controls used on the unit to comply with 40 CFR 63, Subpart DDDDD, description of the fuel(s) burned, including whether the fuel(s) were a secondary material determined by the permittee or the EPA through a petition process to be a non-waste under 40 CFR 241.3, and justification for the selection of fuel(s) burned during the compliance demonstration. [40 CFR 63.7545(e)(1)]
 - ii. In addition to the information required in 40 CFR 63.9(h)(2), the notification of compliance status shall include the following certification(s) of compliance, as applicable, and signed by a responsible official: [40 CFR 63.7545(e)(8)]
 - 1. “This facility completed the required initial tune-up for all of the boilers and process heaters covered by 40 CFR part 63 subpart DDDDD at this site according to the procedures in 40 CFR 63.7540(a)(10)(i) through (vi).” [40 CFR 63.7545(e)(8)(i)]
- f. The permittee shall submit each report in 40 CFR 63, Subpart DDDDD, Table 9, as applicable. [40 CFR 63.7550(a)]
- g. Unless the EPA Administrator has approved a different schedule for submission of reports under 40 CFR 63.10(a), the permittee shall submit each report, according to 40 CFR 63.7550(h), by the date in 40 CFR 63, Subpart DDDDD, Table 9 and according to the requirements in 40 CFR 63.7550(b)(1) through (4). For units that are subject only to a requirement to conduct subsequent biennial tune-ups according to 40 CFR 63.7540(a)(11), and not subject to emission limits or 40 CFR 63, Subpart DDDDD, Table 4 operating limits, the permittee may submit only biennial compliance reports, as specified in 40 CFR 63.7550(b)(1) through (4), instead of a semi-annual compliance report. [40 CFR 63.7550(b)]
 - i. The first semi-annual compliance report shall cover the period beginning on the compliance date that is specified for each boiler or process heater in 40 CFR 63.7495 and ending on June 30 or December 31, whichever date is the first date that occurs at least 180 days after the compliance date that is specified for the source in 40 CFR 63.7495. If submitting a biennial compliance report, the first compliance report shall cover the period beginning on the compliance date that is specified for each boiler or process heater in 40 CFR 63.7495 and ending on December 31 within 2 years after the compliance date that is specified for the source in 40 CFR 63.7495. [40 CFR 63.7550(b)(1)]
 - ii. The first semi-annual compliance report shall be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for each boiler or process heater

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- in 40 CFR 63.7495. The first biennial compliance report shall be postmarked or submitted no later than January 31. [40 CFR 63.7550(b)(2)]
- iii. Each subsequent semi-annual compliance report shall cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. Biennial compliance reports shall cover the applicable 2-year period from January 1 to December 31. [40 CFR 63.7550(b)(3)]
 - iv. Each subsequent semi-annual compliance report shall be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period. Biennial compliance reports shall be postmarked or submitted no later than January 31. [40 CFR 63.7550(b)(4)]
 - v. For each affected source that is subject to permitting regulations pursuant to 40 CFR Part 70 or 40 CFR Part 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), the permittee may submit the first and subsequent compliance reports according to the dates the permitting authority has established in the permit instead of according to the dates in 40 CFR 63.7550(b)(1) through (4). [40 CFR 63.7550(b)(5)]
- h. A compliance report shall contain the following information: [40 CFR 63.7550(c)]
- i. The permittee shall submit a compliance report with the information in 40 CFR 63.7550(c)(5)(i) through (iii), and 40 CFR 63.7550(c)(xiv) and (xvii) [40 CFR 63.7550(c)(1)].
 - ii. Company and Facility name and address [40 CFR 63.7550(c)(5)(i)].
 - iii. Process unit information, emissions limitations, and operating parameter limitations [40 CFR 63.7550(c)(5)(ii)].
 - iv. Date of report and beginning and ending dates of the reporting period [40 CFR 63.7550(c)(5)(iii)].
 - v. Include the date of the most recent tune-up for each unit subject to only the requirement to conduct an biennial tune-up according to 40 CFR 63.7540(a)(11). Include the date of the most recent burner inspection if it was not done biennially and was delayed until the next scheduled or unscheduled unit shutdown. [40 CFR 63.7550(c)(xiv)]
 - vi. Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report [40 CFR 63.7550(c)(5)(xvii)].
- i. The permittee shall submit all reports required by 40 CFR 63, Subpart DDDDD, Table 9 electronically to the EPA via the CEDRI. (CEDRI can be accessed through the EPA's CDX.) The permittee shall use the appropriate electronic report in CEDRI for 40 CFR 63, Subpart DDDDD. Instead of using the electronic report in CEDRI for 40 CFR 63, Subpart

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DDDDD, the permittee may submit an alternate electronic file consistent with the XML schema listed on the CEDRI Web site (<http://www.epa.gov/ttn/chief/cedri/index.html>), once the XML schema is available. If the reporting form specific to 40 CFR 63, Subpart DDDDD is not available in CEDRI at the time that the report is due, the permittee shall submit the report to the Administrator at the appropriate address listed in 40 CFR 63.13. The permittee shall begin submitting reports via CEDRI no later than 90 days after the form becomes available in CEDRI. [40 CFR 63.7550(h)(3)]

- j. The permittee shall include, in the semi-annual report, any time that Emission Unit #'s 066 through 085 were not operated according to the GCOP plan with a description of the situation and actions taken to remedy the issue. [401 KAR 52:020, Section 10]
- k. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**Emission Group G:****Strip Processing Plant Process Operations**

Emission Unit #	Unit Name	Maximum Capacity	Control Device	Construction Commenced
Process Area 04: Strip Processing Plant				
092	CASH Line #1 – Alkaline Cleaning Operation		CASH 1 Wet Scrubber #1	May 2018
102	CASH Line #2 – Alkaline Cleaning Operation		CASH 2 Wet Scrubber #1	May 2018
112	CASH Line #3 – Alkaline Cleaning Operation		CASH 3 Wet Scrubber #1	May 2018
094	CASH Line #1 – Heat Treat Furnace (Heat Treat Section)	23.8 MMBtu/hr	----	May 2018
095	CASH Line #1 – Heat Treat Furnace (Spiking Section)	8.5 MMBtu/hr	----	May 2018
104	CASH Line #2 – Heat Treat Furnace (Heat Treat Section)	23.8 MMBtu/hr	----	May 2018
105	CASH Line #2 – Heat Treat Furnace (Spiking Section)	8.5 MMBtu/hr	----	May 2018
114	CASH Line #3 – Heat Treat Furnace (Heat Treat Section)	23.8 MMBtu/hr	----	May 2018
115	CASH Line #3 – Heat Treat Furnace (Spiking Section)	8.5 MMBtu/hr	----	May 2018
096	CASH Line #1 – Tension Leveler		CASH 1 Wet Scrubber #2	May 2018
097	CASH Line #1 – Pickling Operation		CASH 1 Wet Scrubber #2	May 2018
098	CASH Line #1 – Post-Treatment Operation		CASH 1 Wet Scrubber #2	May 2018
100	CASH Line #1 – Reheater Furnace	5.1 MMBtu/hr	----	May 2018
101	CASH Line #1 – Electrostatic Oiler		----	May 2018
106	CASH Line #2 – Tension Leveler		CASH 2 Wet Scrubber #2	May 2018

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit #	Unit Name	Maximum Capacity	Control Device	Construction Commenced
107	CASH Line #2 – Pickling Operation		CASH 2 Wet Scrubber #2	May 2018
108	CASH Line #2 – Post-Treatment Operation		CASH 2 Wet Scrubber #2	May 2018
110	CASH Line #2 – Reheater Furnace	5.1 MMBtu/hr	----	May 2018
111	CASH Line #2 – Electrostatic Oiler		----	May 2018
116	CASH Line #3 – Tension Leveler		CASH 3 Wet Scrubber #2	May 2018
117	CASH Line #3 – Pickling Operation		CASH 3 Wet Scrubber #2	May 2018
118	CASH Line #3 – Post-Treatment Operation		CASH 3 Wet Scrubber #2	May 2018
120	CASH Line #3 – Reheater Furnace	5.1 MMBtu/hr	----	May 2018
121	CASH Line #3 – Electrostatic Oiler		----	May 2018

Maximum Capacity: 519,623 Mft²/yr per line

APPLICABLE REGULATIONS:

401 KAR 59:010, *New process operation*

STATE-ORIGIN REQUIREMENTS:

401 KAR 63:020, *Potentially hazardous matter or toxic substances* (applicable to Emission Unit #'s 094, 095, 097, 098, 100, 104, 105, 107, 108, 110, 114, 115, 117, 118, 120)

PRECLUDED REGULATIONS:

401 KAR 51:017, *Prevention of significant deterioration of air quality*, for PM, PM₁₀, PM_{2.5}, NO_x, CO, VOC, GHG, and Sulfuric Acid Mist

1. Operating Limitations:

- a. The permittee shall limit product throughput in each of Emission Unit #'s 092, 102, and 112 to meet all of the following requirements: [To preclude 401 KAR 51:017]
 - i. 519,623 thousand square feet (Mft²) per year per unit on a 12-month rolling total basis; and
 - ii. The permittee shall evaluate the adequacy of permitted throughput limits taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 for PM, PM₁₀, PM_{2.5}, and VOC based upon the most recent performance test results to verify and establish emission factors. If the permitted throughput limits are not adequate to meet the

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

emission limitations in **Section D – Source Emission Limitations and Testing Requirements** and preclude 401 KAR 51:017, the permittee shall submit an application within 180 days of completion of the test for revision of throughput limits accordingly.

Compliance Demonstration Method

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (b)**, **5. Specific Recordkeeping Requirements (c)**, **6. Specific Reporting Requirements (b)**, and (c).

- b. The permittee shall limit natural gas combustion in each of Emission Unit #'s 094, 104, and 114 to meet all of the following requirements: [To preclude 401 KAR 51:017]
 - i. 138.0 MMscf per year per unit on a 12-month rolling total basis; and
 - ii. An amount, based upon the most recent emission factors approved by the Division, which would not cause NO_x emission limitations taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 to be exceeded.

Compliance Demonstration Method

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (b)** and **5. Specific Recordkeeping Requirements (d)**.

- c. The permittee shall limit natural gas combustion in each of Emission Unit #'s 095, 105, and 115 to meet all of the following requirements: [To preclude 401 KAR 51:017]
 - i. 49.3 MMscf per year per unit on a 12-month rolling total basis; and
 - ii. An amount, based upon the most recent emission factors approved by the Division, which would not cause NO_x emission limitations taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 to be exceeded.

Compliance Demonstration Method

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (b)** and **5. Specific Recordkeeping Requirements (d)**.

- d. The permittee shall limit lubricant usage in each of Emission Unit #'s 096, 106, and 116 to meet all of the following requirements: [To preclude 401 KAR 51:017]
 - i. 6,942 gallons per year per unit on a 12-month rolling total basis; and
 - ii. The permittee shall evaluate the adequacy of permitted throughput limits taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 for PM, PM₁₀, PM_{2.5}, and VOC, based upon the most recent performance test results to verify and establish emission factors. If the permitted throughput limits are not adequate to meet the emission limitations in **Section D – Source Emission Limitations and Testing Requirements** and preclude 401 KAR 51:017, the permittee shall submit an

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

application within 180 days of completion of the test for revision of throughput limits accordingly.

Compliance Demonstration Method

Compliance shall be demonstrated according to **4. Specific Monitoring Requirement (b)**, **5. Specific Recordkeeping Requirements (e)**, **6. Specific Reporting Requirements (b)**, and (c).

- e. The permittee shall limit natural gas combustion in each of Emission Unit #'s 100, 110, and 120 to meet all of the following requirements: [To preclude 401 KAR 51:017]
 - i. 29.6 MMscf per year per unit on a 12-month rolling total basis; and
 - ii. An amount, based upon the most recent emission factors approved by the Division, which would not cause NO_x emission limitations taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 to be exceeded.

Compliance Demonstration Method

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (b)** and **5. Specific Recordkeeping Requirements (d)**.

- f. The permittee shall prepare and maintain for Emission Unit #'s 094, 095, 100, 104, 105, 110, 114, 115, and 120, within 90 days of startup, a good combustion and operation practices plan (GCOP) that defines, measures, and verifies the use of operational and design practices for minimizing NO_x emissions. Any revisions requested by the Division shall be made in accordance with the timeframe specified in the Division's request for revisions and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Division's inspection. The plan shall include a list of combustion optimization practices and a means of verifying the practices have occurred. Combustion optimization practices shall include, but not be limited to: [To preclude 401 KAR 51:017]
 - i. For Emission Unit #'s 094, 104, and 114:
 - 1. Installing and maintaining inlet and outlet seals to minimize heat losses.
 - 2. Periodic preventative maintenance of gas supply valves in accordance with the manufacturer's recommended procedures and schedule.
 - 3. Periodic calibration of gas supply meter in accordance with the manufacturer's recommended procedures and schedule.
 - 4. Periodic calibration of furnace pressure control system in accordance with the manufacturer's recommended procedures and schedule.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- 5. Installing, operating, and maintaining a combustion system that includes air to fuel ratio control for improved fuel efficiency.
- ii. For Emission Unit #'s 095, 100, 105, 110, 115, and 120: [401 KAR 51:017]
 - 1. Periodic preventative maintenance of gas supply valves in accordance with the manufacturer's recommended procedures and schedule.
 - 2. Periodic calibration of gas supply meter in accordance with the manufacturer's recommended procedures and schedule.
 - 3. Periodic calibration of furnace pressure control system in accordance with the manufacturer's recommended procedures and schedule.
 - 4. Installing, operating, and maintaining a combustion system that includes air to fuel ratio control for improved fuel efficiency.

Compliance Demonstration Method:

Compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements (f), (g), and 6. Specific Reporting Requirements (a)**.

- g. The permittee shall maintain the overall capture efficiency of the hooding and enclosures at 100 percent for Emission Unit #'s 092, 096 through 098, 102, 106 through 108, 112, and 116 through 118. [To preclude 401 KAR 51:017]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **3. Testing Requirements (g)(iii)**.

2. Emission Limitations:

- a. The permittee shall not cause, suffer, allow, or permit any continuous emission into the open air from a control device or stack associated with any affected facility which is equal to or greater than 20 percent opacity. [401 KAR 59:010, Section 3(1)(a)]

Compliance Demonstration Method:

Compliance with the opacity standard shall be demonstrated according to **4. Specific Monitoring Requirements (a)** and **5. Specific Recordkeeping Requirements (a)**.

- b. For emissions from a control device or stack, the permittee shall not cause, suffer, allow or permit the emission into the open air of PM from any affected facility which is in excess of the quantity specified in Appendix A to 401 KAR 59:010. [401 KAR 59:010, Section 3(2)]
 - i. For process weight rates of 0.50 ton/hr or less: 2.34 lb/hr
 - ii. For process weight rates up to 30.00 tons/hr: $E = 3.59 * P^{0.62}$
 - iii. For process weight rates in excess of 30.00 tons/hr $E = 17.31 * P^{0.16}$

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Where:

E = the allowable PM emissions rate (pounds/hour)

P = the process weight rate (tons/hour)

Compliance Demonstration Method:

1. For Emission Unit #'s 092, 102, and 112: Compliance shall be demonstrated according to **3. Testing Requirements** (c), **4. Specific Monitoring Requirements** (b), and **5. Specific Recordkeeping Requirements** (b).
 2. For Emission Unit #'s 096 through 098, 106 through 108, and 116 through 118: Compliance shall be demonstrated according to **3. Testing Requirements** (g), **4. Specific Monitoring Requirements** (b), and **5. Specific Recordkeeping Requirements** (b).
 3. For Emission Unit #'s 101, 111, and 121: Compliance shall be demonstrated according to **3. Testing Requirements** (h), **4. Specific Monitoring Requirements** (b), and **5. Specific Recordkeeping Requirements** (b).
 4. For Emission Unit #'s 094, 095, 100, 104, 105, 110, 114, 115, and 120: These units are assumed to be in compliance with the 401 KAR 59:010 PM mass emission standard based on the information provided to the Division in the application submitted by the source.
- c. The permittee shall maintain emissions at or below the limitations in the following table:
[To preclude 401 KAR 51:017]

Emission Unit #	Unit Name	Pollutant	Emission Limit
094, 104, 114	Heat Treat Furnaces (Heat Treat Section) (each unit)	NO _x	9.08 tons on a 12-month rolling total basis
095, 105, 115	Heat Treat Furnaces (Spiking Section) (each unit)	NO _x	1.91 tons on a 12-month rolling total basis
100, 110, 120	Reheater Furnaces (each unit)	NO _x	1.14 tons on a 12-month rolling total basis

Compliance Demonstration Method:

Compliance shall be demonstrated according to **3. Testing Requirements** (d), (e), (f), (i), **4. Specific Monitoring Requirements** (c), and **5. Specific Recordkeeping Requirements** (h).

- d. The permittee shall not allow any affected facility to emit potentially hazardous matter or toxic substances in such quantities or duration as to be harmful to the health and welfare of humans, animals and plants. [401 KAR 63:020, Section 3]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)**Compliance Demonstration Method:**

Based upon the emission rates of toxics and hazardous air pollutants determined by the Cabinet using information provided in the application and supplemental information submitted by the source, the Cabinet determines the affected facility to be in compliance with 401 KAR 63:020.

- e. Refer to **Section D – Source Emission Limitations and Testing Requirements** for source-wide emission limitations to preclude 401 KAR 51:017.

3. Testing Requirements:

- a. Except as provided in 401 KAR 50:045, performance tests used to demonstrate compliance with 401 KAR 59:010, Section 3 shall be conducted according to the following methods. Methods are filed by reference in 401 KAR 50:015. [401 KAR 59:010, Section 4]
 - i. For the emission rates of particulate matter and the associated moisture content, U.S. EPA Reference Method 5 shall be used. [401 KAR 59:010, Section 4(1)]
 - ii. U.S. EPA Reference Method 1 for sample and velocity traverses. [401 KAR 59:010, Section 4(2)]
 - iii. U.S. EPA Reference Method 2 for velocity and volumetric flow rate. [401 KAR 59:010, Section 4(3)]
 - iv. U.S. EPA Reference Method 3 for gas analysis. [401 KAR 59:010, Section 4(4)]
 - v. U.S. EPA Reference Method 9 for opacity of continuous emissions. [401 KAR 59:010, Section 4(5)]
 - vi. For U.S. EPA Reference Method 5, U.S. EPA Reference Method 1 shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall be 0.85 dscm (thirty (30) dscf) except that smaller sampling time or volumes, when necessitated by process variables or other factors, may be approved by the cabinet. [401 KAR 59:010, Section 4(7)]
- b. Performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted as required by the Division in accordance with 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1.
- c. Within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial start-up of the first CASH Line Alkaline Cleaning Operation and associated control device, the permittee shall conduct performance testing to verify and establish the PM, PM₁₀, PM_{2.5}, and VOC emission factors associated with Emission Unit #'s 092, 102, and 112. The results from a single CASH Line Alkaline Cleaning Operation and associated control device on any of the three identical CASH Lines are assumed to be representative of the other CASH Line Alkaline Cleaning Operations. [To preclude 401 KAR 51:017]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- i. Prior to performance testing, the permittee shall develop and submit a site-specific test plan to the Division at least 60 days prior to the required test date. The permittee shall propose the following in the test plan for Division review and approval:
 1. The reference test methods that will be used;
 2. The anticipated operating parameter ranges for the CASH Line Alkaline Cleaning Operation during the test; and
- ii. The performance test program shall include the following elements:
 1. Prior to the test, the permittee shall establish a recirculating water flow rate range and a pressure drop range for the wet scrubber in accordance with the manufacturer's written instructions and operate the control devices within these ranges during the test.
 2. The permittee shall monitor process weight rate; and
 3. Pollutant measurement shall be made at the stack outlet of the wet scrubber for PM, PM₁₀, PM_{2.5}, and VOC.
- d. Within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial start-up of the first CASH Line Heat Treat Furnace (Heat Treat Section), the permittee shall conduct performance testing to verify and establish the NO_x emission factors associated with Emission Unit #'s 094, 104, and 114. The results from a single CASH Line Heat Treat Furnace (Heat Treat Section) on any of the three identical CASH Lines are assumed to be representative of the other CASH Line Heat Treat Furnaces (Heat Treat Section). Prior to performance testing, the permittee shall develop and submit a site-specific test plan to the Division at least 60 days prior to the required test date. [To preclude 401 KAR 51:017]
 - i. The permittee shall propose the following in the test plan for Division review and approval:
 1. The reference test method that will be used;
 2. The anticipated operating parameter ranges for the CASH Line Heat Treat Furnace (Heat Treat Section) during the test; and
 - ii. The permittee shall monitor process weight rate and heat input rate during the test.
- e. Within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial start-up of the first CASH Line Heat Treat Furnace (Spiking Section), the permittee shall conduct performance testing to verify and establish the NO_x emission factors associated with Emission Unit #'s 095, 105, and 115. The results from a single CASH Line Heat Treat Furnace (Spiking Section) on any of the three identical CASH Lines are assumed to be representative of the other CASH Line Heat Treat Furnaces (Spiking Section). Prior to performance testing, the permittee

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

shall develop and submit a site-specific test plan to the Division at least 60 days prior to the required test date. [To preclude 401 KAR 51:017]

- i. The permittee shall propose the following in the test plan for Division review and approval:
 1. The reference test method that will be used;
 2. The anticipated operating parameter ranges for the CASH Line Heat Treat Furnace (Spiking Section) during the test; and
 - ii. The permittee shall monitor process weight rate and heat input rate during the test.
- f. Within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial start-up of the first CASH Line Reheater Furnace, the permittee shall conduct performance testing to verify and establish the NO_x emission factors associated with Emission Unit #'s 100, 110, and 120. The results from a single CASH Line Reheater Furnace on any of the three identical CASH Lines are assumed to be representative of the other CASH Line Reheater Furnaces. Prior to performance testing, the permittee shall develop and submit a site-specific test plan to the Division at least 60 days prior to the required test date. [To preclude 401 KAR 51:017]
- i. The permittee shall propose the following in the test plan for Division review and approval:
 1. The reference test method that will be used;
 2. The anticipated operating parameter ranges for the CASH Line Reheater Furnace during the test; and
 - ii. The permittee shall monitor process weight rate and heat input rate during the test.
- g. Within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial start-up of the first CASH Line Tension Leveler/Pickling Operation/Post-Treatment Operation and associated control device, the permittee shall conduct performance testing to verify and establish the PM, PM₁₀, PM_{2.5}, VOC, HF, and H₂SO₄ emission factors associated with Emission Unit #'s 096 through 098, 106 through 108, and 116 through 118. The results from a single CASH Line Tension Leveler/Pickling Operation/Post-Treatment Operation and associated control device are assumed to be representative of the other CASH Line Tension Leveler/Pickling Operation/Post-Treatment Operation and associated control device. [To preclude 401 KAR 51:017]
- i. Prior to performance testing, the permittee shall develop and submit a site-specific test plan to the Division at least 60 days prior to the required test date. The permittee shall propose the following in the test plan for Division review and approval:
 1. The reference test methods that will be used;

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

2. The anticipated operating parameter ranges for the CASH Line Tension Leveler/Pickling Operation/Post-Treatment Operation during the test; and
- ii. The performance test program shall include the following elements:
 1. Prior to the test, the permittee shall establish a recirculating water flow rate range and a pressure drop range for the wet scrubber in accordance with the manufacturer's written instructions and operate the control devices within these ranges during the test.
 2. The permittee shall monitor process weight rate; and
 3. Pollutant measurement shall be made at the following locations:
 - A. Uncontrolled exhaust from the CASH Line Tension Leveler for VOC;
 - B. Outlet of each wet scrubber for PM, PM₁₀, PM_{2.5}, VOC, HF, and H₂SO₄.
 - iii. During the performance test, the permittee shall conduct a performance demonstration on Emission Unit #'s 092, 102, 112, 096 through 098, 106 through 108, and 116 through 118, using the following method, to demonstrate that the hooding and enclosures associated with each unit captures and contains 100 percent of emissions for discharge through a control device at all times:
 1. The permittee shall measure the face velocity of air through all natural draft openings (NDOs) to verify that it is at least 200 feet per minute in the direction of the enclosure. The permittee shall monitor and record the volumetric flowrate through the control device at all times while measurements taken;
 2. All access doors and windows which remain closed when the permittee takes measurements to verify that the face velocity of 200 feet per minute is achieved shall be closed during routine operation of the process; and
 3. The permittee shall verify that the direction of air flow through all NDOs is inward. If the face velocity is less than 500 feet per minute, the continuous inward flow of air shall be verified using streamers, smoke tubes, or tracer gases. The permittee shall monitor the direction of air flow for at least 1 hour, with checks made no more than 10 minutes apart. If the face velocity is greater than 500 feet per minute, the direction of air flow through the NDOs shall be presumed to be inward at all times without verification.
 - h. Within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial start-up of the first CASH Line Electrostatic Oiler, the permittee shall establish/verify the VOC emission factor associated with Emission Unit #'s 101, 111, and 121 by testing, material balance, or other methods approved by the Division. It is assumed that emissions from a single CASH Line Electrostatic Oiler operation are representative for each CASH Line Electrostatic Oiler operation. [To preclude 401 KAR 51:017]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- i. The permittee shall conduct subsequent performance testing within 5 years of the date the previous performance test, which verified compliance with the emission limits required to preclude 401 KAR 51:017, was conducted. Performance testing shall be conducted to verify and establish: [To preclude 401 KAR 51:017]
 - i. The PM, PM₁₀, PM_{2.5}, and VOC emission factors associated with Emission Unit #'s 092, 096, 097, 098, 102, 106, 107, 108, 112, 116, 117, and 118;
 - ii. The NO_x emission factors associated with Emission Unit #'s 094, 095, 100, 104, 105, 110, 114, 115, and 120; and
 - iii. The HF and H₂SO₄ emission factors associated with Emission Unit #'s 097, 098, 107, 108, 117, and 118.
- iv. Subsequent performance testing required to preclude 401 KAR 51:017 shall:
 1. Satisfy all conditions specified for initial performance testing required to preclude 401 KAR 51:017; and
 2. Not be repeated on a given emission unit and associated control device, if any, until all similar emission units and associated control devices, if any, have completed a performance testing cycle.

4. Specific Monitoring Requirements:

- a. The permittee shall perform a qualitative visual observation of the emissions from each stack while any of the associated equipment is operating on a weekly basis. If visible emissions are present then the opacity shall be determined by using U.S. EPA Reference Method 9. [401 KAR 52:020, Section 10]
- b. The permittee shall monitor hours of operation, process weight rate (tons), as defined in 401 KAR 59:010, Section 2, aluminum production (tons), thousand square feet processed (Mft²), lubricant use (gallons), and natural gas combusted (MMscf) on a monthly basis. [401 KAR 52:020, Section 10]
- c. The permittee shall calculate monthly and 12-month rolling total emissions for NO_x for each of Emission Unit #'s 094, 095, 100, 104, 105, 110, 114, 115, and 120. Calculations shall be based upon emission factors most recently approved by the Division. [401 KAR 52:020, Section 10]
- d. For each wet scrubber, the permittee shall install, calibrate at least annually, maintain and operate a continuous parameter monitoring system to measure and record: [401 KAR 52:020, Section 10]
 - i. Recirculating water flow rate; and
 - ii. Pressure drop across the wet scrubber.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- e. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

5. Specific Recordkeeping Requirements:

- a. The permittee shall maintain records of qualitative visual observations of the emissions from each stack and any U.S. EPA Reference Method 9 readings performed. [401 KAR 52:020, Section 10]
- b. The permittee shall maintain records of hours of operation, process weight rate (tons), as defined in 401 KAR 59:010, Section 2, aluminum production (tons), and natural gas combusted (MMscf) on a monthly basis. [401 KAR 52:020, Section 10]
- c. The permittee shall maintain records of 12-month rolling total product throughput (Mft²) in each of Emission Unit #'s 092, 102, and 112. [401 KAR 52:020, Section 10]
- d. The permittee shall maintain records of 12-month rolling total natural gas combustion in each of Emission Unit #'s 094, 095, 100, 104, 105, 110, 114, 115, and 120. [401 KAR 52:020, Section 10]
- e. The permittee shall maintain records of 12-month rolling total lubricant usage in each of Emission Unit #'s 096, 106, and 116. [401 KAR 52:020, Section 10]
- f. The permittee shall maintain a copy of the GCOP plan as well as any revisions. [401 KAR 52:020, Section 10]
- g. The permittee shall maintain records of any time that the Emission Unit #'s 094, 095, 100, 104, 105, 110, 114, 115, or 120 were not operated according to the GCOP plan with a description of the situation and actions taken to remedy the issue. [401 KAR 52:020, Section 10]
- h. The permittee shall maintain records of monthly and 12-month rolling total emissions for NO_x for each of Emission Unit #'s 094, 095, 100, 104, 105, 110, 114, 115, and 120. [401 KAR 52:020, Section 10]
- i. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

6. Specific Reporting Requirements:

- a. The permittee shall include, in the semi-annual report, any time that Emission Unit #'s 094, 095, 100, 104, 105, 110, 114, 115, or 120 were not operated according to the GCOP plan with a description of the situation and actions taken to remedy the issue. [401 KAR 52:020, Section 10]
- b. The permittee shall submit, concurrently with results from performance testing conducted to preclude 401 KAR 51:017, an evaluation of the adequacy of permitted throughput limits taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 based upon the results from performance testing conducted to preclude 401 KAR 51:017. [401 KAR 52:020, Section 10]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- c. The permittee shall include, in the semi-annual report, a confirmatory statement that: [401 KAR 52:020, Section 10]
 - i. “Performance testing conducted for PM, PM₁₀, PM_{2.5}, VOC, NO_x, and H₂SO₄ yielded results demonstrating that permitted throughput limits are adequate for the project authorized by V-18-001 to preclude 401 KAR 51:017.”;
 - ii. “Performance testing conducted for PM, PM₁₀, PM_{2.5}, VOC, NO_x, and H₂SO₄ yielded results demonstrating that permitted throughput limits are not adequate for the project authorized by V-18-001 to preclude 401 KAR 51:017.”; or
 - iii. “No performance testing for PM, PM₁₀, PM_{2.5}, VOC, NO_x, or H₂SO₄ was conducted during the reporting period.”
- d. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements for additional requirements.**

7. Specific Control Equipment Operating Conditions:

- a. The wet scrubbers associated with Emission Unit #'s 092, 102, and 112 shall be operated at all times while Emission Unit #'s 092, 102, and 112 are in operation. [To preclude 401 KAR 51:017]
- b. The wet scrubbers associated with Emission Unit #'s 096 through 098, 106 through 108, and 116 through 118 shall be operated at all times while the respective emission units are in operation. [To preclude 401 KAR 51:017]
- c. The air pollution control equipment for each emission unit shall be operated to maintain compliance with permitted emission limitations, consistent with manufacturer's specifications and standard operating practices. [401 KAR 50:055, Section 2]
- d. Records regarding the maintenance of the control equipment shall be maintained. [401 KAR 52:020, Section 10]
- e. Refer to **Section E – Source Control Equipment Requirements** for additional requirements.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Group H:

Diesel-fired Emergency Generating Engines

Emission Unit #	Unit Name	Maximum Capacity (bHP)	Control Device	Construction Commenced
Process Area 05: Auxiliary Systems				
128	Emergency Generator Engine #1	1,711	----	May 2018
129	Emergency Generator Engine #2	1,711	----	May 2018
130	Emergency Generator Engine #3	1,711	----	May 2018

APPLICABLE REGULATIONS:

401 KAR 60:005, Section 2(2)(dddd), 40 C.F.R. 60.4200 to 60.4219, Tables 1 to 8 (Subpart IIII), Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Note: D.C. Circuit Court [*Delaware v. EPA*, 785 F. 3d 1 (D.C. Cir. 2015)] has vacated the provisions in 40 CFR 60, Subpart IIII that contain the 100-hour exemption for operation of emergency engines for purposes of emergency demand response under 40 CFR 60.4211(f)(2)(ii)-(iii). The D.C. Circuit Court issued the mandate for the vacatur on May 4, 2016.

401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

PRECLUDED REGULATIONS:

401 KAR 51:017, Prevention of significant deterioration of air quality, for PM, PM₁₀, PM_{2.5}, NO_x, CO, VOC, and GHG

1. Operating Limitations:

- a. New emergency stationary reciprocating internal combustion engines (RICE) with a site rating of more than 500 brake HP located at a major source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in 40 CFR 63.6640(f)(2)(ii) and (iii) do not have to meet the requirements of 40 CFR 63, Subpart ZZZZ and Subpart A except for the initial notification requirements of 40 CFR 63.6645(f) [40 CFR 63.6590(b)(1) and 40 CFR 63.6590(b)(1)(i)].
- b. The permittee shall operate and maintain the stationary compression ignition (CI) internal combustion engines (ICE) that achieve the emission standards as required in 40 CFR 60.4205 over the entire life of the engine [40 CFR 60.4206].

Compliance Demonstration Method:

Compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements** (e).

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- c. The permittee shall use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel [40 CFR 60.4207(b)].

Compliance Demonstration Method:

Compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements** (d).

- d. The permittee shall do all of the following, except as permitted under 40 CFR 60.4211(g): [40 CFR 60.4211(a)]
- i. Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions; [40 CFR 60.4211(a)(1)]
 - ii. Change only those emission-related settings that are permitted by the manufacturer; and [40 CFR 60.4211(a)(2)]
 - iii. Meet the requirements of 40 CFR Parts 89, 94, and/or 1068, as they apply [40 CFR 60.4211(a)(3)].

Compliance Demonstration Method:

Compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements** (e).

- e. The permittee shall operate the emergency stationary ICE according to the requirements in 40 CFR 60.4211(f)(1) through (3). In order for the engine to be considered an emergency stationary ICE under 40 CFR 60, Subpart III, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in 40 CFR 60.4211(f)(1) through (3), is prohibited. If the engine is not operated according to the requirements in 40 CFR 60.4211(f)(1) through (3), the engine will not be considered an emergency engine under 40 CFR 60, Subpart III and shall meet all requirements for non-emergency engines. [40 CFR 60.4211(f)]
- i. There is no time limit on the use of emergency stationary ICE in emergency situations [40 CFR 60.4211(f)(1)].
 - ii. The permittee may operate the emergency stationary ICE for maintenance checks and readiness testing for a maximum of 100 hours per calendar year, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the permittee maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. Any operation for non-emergency situations as allowed by 40 CFR 60.4211(f)(3) counts as

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- part of the 100 hours per calendar year allowed by 40 CFR 60.4211(f)(2). [40 CFR 60.4211(f)(2) and 40 CFR 60.4211(f)(2)(i)]
- iii. Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in 40 CFR 60.4211(f)(2). Except as provided in 40 CFR 60.4211(f)(3)(i), the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met: [40 CFR 60.4211(f)(3) and 40 CFR 60.4211(f)(3)(i)]
1. The engine is dispatched by the local balancing authority or local transmission and distribution system operator; [40 CFR 60.4211(f)(3)(i)(A)]
 2. The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region [40 CFR 60.4211(f)(3)(i)(B)].
 3. The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines [40 CFR 60.4211(f)(3)(i)(C)].
 4. The power is provided only to the facility itself or to support the local transmission and distribution system [40 CFR 60.4211(f)(3)(i)(D)].
 5. The permittee identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the permittee. [40 CFR 60.4211(f)(3)(i)(E)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements** (a), (b), and **5. Specific Recordkeeping Requirements** (d).

2. Emission Limitations:

- a. The engines shall comply with the emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants [40 CFR 60.4205(b) and 40 CFR 60.4202(a)(2)].

Compliance Demonstration Method:

The permittee shall demonstrate compliance by either:

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

1. Purchasing an engine certified to the emission standards in 40 CFR 60.4205(b) for the same model year and maximum engine power. The engine shall be installed and configured according to the manufacturer's emission-related specifications, except as permitted in 40 CFR 60.4211(g); or [40 CFR 60.4211(c)]
2. If the permittee does not install, configure, operate, and maintain the engine and control device according to the manufacturer's emission-related written instructions, or the permittee changes emission-related settings in a way that is not permitted by the manufacturer, the permittee shall keep a maintenance plan and records of conducted maintenance and shall, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, the permittee shall conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission related written instructions, or within 1 year after the permittee changes emission-related settings in a way that is not permitted by the manufacturer. The permittee shall conduct subsequent performance testing every 8,760 hours of engine operation or 3 years, whichever comes first, thereafter to demonstrate compliance with the applicable emission standards. [40 CFR 60.4211(g) and 40 CFR 60.4211(g)(3)]
- b. Refer to **Section D – Source Emission Limitations and Testing Requirements** for source-wide emission limitations to preclude 401 KAR 51:017.
3. **Testing Requirements:**
Performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted as required by the Division in accordance with 401 KAR 50:045, Section 1.
4. **Specific Monitoring Requirements:**
 - a. The permittee shall install a non-resettable hour meter prior to startup of the engine [40 CFR 60.4209(a)].
 - b. The permittee shall monitor the hours of operation of the engine in emergency and non-emergency service and the reason the engine was in operation during that time [40 CFR 60.4214(b) and 401 KAR 52:020, Section 10].
 - c. The permittee shall monitor the amount of fuel combusted (Mgal) on a monthly basis [401 KAR 52:020, Section 10].
 - d. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.
5. **Specific Recordkeeping Requirements:**
 - a. The permittee shall keep a copy of each notification submitted to comply with 40 CFR 63, Subpart ZZZZ, including all documentation supporting any Initial Notification submitted, according to the requirement in 40 CFR 63.10(b)(2)(xiv) [40 CFR 63.6655(a)(1)].

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- b. The permittee shall keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The permittee shall record the time of operation of the engine and the reason the engine was in operation during that time [40 CFR 60.4214(b)]
- c. The permittee shall maintain records of fuel combusted (Mgal) on a monthly basis [401 KAR 52:020, Section 10].
- d. The permittee shall maintain records of fuel purchases of fuel purchases to show that the fuel meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel. [401 KAR 52:020, Section 10]
- e. The permittee shall maintain records of maintenance conducted on the engine consistent with the operating requirements of 40 CFR 60.4206 and 40 CFR 60.4211(a). [401 KAR 52:020, Section 10]
- f. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

6. Specific Reporting Requirements:

- a. The permittee shall submit an Initial Notification not later than 120 days after startup. The notification should include the information in 40 CFR 63.9(b)(2)(i) through (v), and a statement that the stationary RICE has no additional requirements and explain the basis of the exclusion (for example, the it operates exclusively as an emergency stationary RICE if it has a site rating of more than 500 brake HP located at a major source of HAP emissions). [40 CFR 63.6645(c) and 40 CFR 63.6645(f)]
- b. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit #123:

Auxiliary Boiler #1

Emission Unit #	Unit Name	Maximum Capacity (MMBtu/hr)	Control Device	Construction Commenced
Process Area 05: Auxiliary Systems				
123	Auxiliary Boiler #1	16.8	----	May 2018

APPLICABLE REGULATIONS:**401 KAR 59:015**, *New indirect heat exchangers***401 KAR 60:005, Section 2(2)(d)**, 40 C.F.R. 60.40c to 60.48c (Subpart Dc), *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units***401 KAR 63:002, Section 2(4)(iii)**, 40 C.F.R. 63.7480 to 63.7575, *Tables 1 to 13 (Subpart DDDDD), National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters***PRECLUDED REGULATIONS:****401 KAR 51:017**, *Prevention of significant deterioration of air quality*, for PM, PM₁₀, PM_{2.5}, NO_x, CO, VOC, and GHG**1. Operating Limitations:**

- a. At all times, the permittee shall operate and maintain the affected sources (as defined in 40 CFR 63.7490), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.7500(a)(3)]
- b. The permittee shall be in compliance with the emission limits, work practice standards, and operating limits in 40 CFR 63, Subpart DDDDD. These emission and operating limits apply at all times the affected unit is operating except for periods noted in 40 CFR 63.7500(f). [40 CFR 63.7505(a)]
- c. The permittee shall conduct a tune-up of the boiler annually as specified in 40 CFR 63.7540(a)(10)(i) through (vi). Each annual tune-up specified in 40 CFR 63.7540(a)(10) shall be conducted no more than 13 months after the previous tune-up. The first annual tune-up shall be no later than 13 months after the initial startup of the affected source. If the unit is not operating on the required date for a tune-up, the tune-up shall be conducted within 30 calendar days of startup [40 CFR 63.7500(a)(1) referencing Item 3. of 40 CFR 63, Subpart DDDDD, Table 3; 40 CFR 63.7540(a)(10); 40 CFR 63.7515(d); and 40 CFR 63.7540(a)(13)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- i. As applicable, inspect the burner, and clean or replace any components of the burner as necessary (burner inspection may be performed any time prior to the tune-up or delayed until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment; [40 CFR 63.7540(a)(10)(i)]
- ii. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available; [40 CFR 63.7540(a)(10)(ii)]
- iii. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the inspection may be delayed until the next scheduled unit shutdown); [40 CFR 63.7540(a)(10)(iii)]
- iv. Optimize the total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_x requirements to which the unit is subject; [40 CFR 63.7540(a)(10)(iv)]
- v. Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer; and [40 CFR 63.7540(a)(10)(v)]
- vi. Maintain on-site and submit, if requested by the Administrator, a report containing the information in 40 CFR 63.7540(a)(10)(vi)(A) through (C), [40 CFR 63.7540(a)(10)(vi)]
 1. The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater; and [40 CFR 63.7540(a)(10)(vi)(A)]
 2. A description of any corrective actions taken as a part of the tune-up. [40 CFR 63.7540(a)(10)(vi)(B)]

Compliance Demonstration Method:

The permittee shall demonstrate initial compliance with the applicable work practice standards in 40 CFR 63, Subpart DDDDD, Table 3 within the annual schedule as specified in 40 CFR 63.7515(d) following the initial compliance date specified in 40 CFR 63.7495(a). Thereafter, the permittee is required to complete the annual tune-up as specified in 40 CFR 63.7515(d). [40 CFR 63.7510(g)]

- d. The permittee shall limit natural gas combustion in Emission Unit # 123 to meet all of the following requirements: [To preclude 401 KAR 51:017]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- i. 129.8 MMscf per year on a 12-month rolling total basis; and
- ii. An amount, based upon the most recent emission factors approved by the Division, which would not cause NO_x emission limitations taken for the project authorized by V-18-001 to preclude 401 KAR 51:017 to be exceeded.

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (a)** and **5. Specific Recordkeeping Requirements (a)**.

- e. The permittee shall prepare and maintain for Emission Unit # 123, within 90 days of startup, a good combustion and operations practices plan (GCOP) that defines, measures, and verifies the use of operational and design practices for minimizing NO_x emissions. Any revisions requested by the Division shall be made in accordance with the timeframe specified in the Division's request for revisions and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Division's inspection. The plan shall include a list of combustion optimization practices and a means of verifying the practices have occurred. Combustion optimization practices shall include, but not be limited to: [To preclude 401 KAR 51:017]
 - i. Minimization of boiler blowdowns and periodic inspection and repair of leaking steam traps.
 - ii. Periodic preventative maintenance of gas supply valves in accordance with the manufacturer's recommended procedures and schedule.
 - iii. Periodic calibration of gas supply meter in accordance with the manufacturer's recommended procedures and schedules.
 - iv. Installing, operating, and maintaining a combustion system that includes air to fuel ratio control for improved fuel efficiency.

Compliance Demonstration Method:

Compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements (g), (h)**, and **6. Specific Reporting Requirements (k)**.

- f. During a startup period or shutdown period, the permittee shall comply with the work practice standards established in 401 KAR 59:015, Section 7: [401 KAR 59:015, Section 7]
 - i. The permittee shall comply with 401 KAR 50:055, Section 2(5); [401 KAR 59:015, Section 7(1)(a)]
 - ii. The frequency and duration of startup periods or shutdown periods shall be minimized by the affected facility; [401 KAR 59:015, Section 7(1)(b)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- iii. All reasonable steps shall be taken by the permittee to minimize the impact of emissions on ambient air quality from the affected facility during startup periods and shutdown periods; [401 KAR 59:015, Section 7(1)(c)]
- iv. Startups and shutdowns shall be conducted according to either: [401 KAR 59:015, Section 7(1)(e)]
 - 1. The manufacturer's recommended procedures; or [401 KAR 59:015, Section 7(1)(e)1.]
 - 2. Recommended procedures for a unit of similar design, for which manufacturer's recommended procedures are available, as approved by the cabinet based on documentation provided by the permittee. [401 KAR 59:015, Section 7(1)(e)2.]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements (j)**.

2. Emission Limitations:

- a. PM emissions shall not exceed 0.32 lb/MMBtu. [401 KAR 59:015, Section 4(1)(c)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **3. Testing Requirements (b)**.

- b. Opacity shall not exceed 20 percent except: [401 KAR 59:015, Section 4(2)]
 - i. A maximum of 40 percent opacity shall be allowed for a maximum of 6 consecutive minutes in any 60 consecutive minutes during fire box cleaning or soot blowing; and [401 KAR 59:015, Section 4(2)(b)]
 - ii. For emissions from an affected facility caused by building a new fire, emissions during the period required to bring the boiler up to operating conditions shall be allowed, if the method used is recommended by the manufacturer and the time does not exceed the manufacturer's recommendations. [401 KAR 59:015, Section 4(2)(c)]

Compliance Demonstration Method:

The unit is assumed to be in compliance with the 401 KAR 59:015 opacity emission standard while combusting natural gas.

- c. Sulfur dioxide (SO₂) emissions shall not exceed 1.1 lb/MMBtu. [401 KAR 59:015, Section 5(1)(c)2.]

Compliance Demonstration Method:

The unit is assumed to be in compliance with the 401 KAR 59:015 SO₂ emission standard while combusting natural gas.

- d. The permittee shall maintain emissions at or below the limitations in the following table: [To preclude 401 KAR 51:017]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit #	Unit Name	Pollutant	Emission Limit
123	Auxiliary Boiler #1	NO _x	0.80 tons on a 12-month rolling total basis

Compliance Demonstration Method:

Compliance shall be demonstrated according to **3. Testing Requirements (b)**, **4. Specific Monitoring Requirements (b)**, and **5. Specific Recordkeeping Requirements (i)**.

- e. Refer to **Section D – Source Emission Limitations and Testing Requirements** for source-wide emission limitations to preclude 401 KAR 51:017.

3. Testing Requirements:

- a. Performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted as required by the Division in accordance with 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1.
- b. Within 60 days after achieving the maximum production rate at which the affected facility will be operated but not later than 180 days after initial start-up of Auxiliary Boiler #1, the permittee shall conduct performance testing to verify and establish the PM, PM₁₀, PM_{2.5}, and NO_x emission factors associated with Emission Unit # 123. The permittee shall monitor natural gas usage in Emission Unit # 123 during the performance test. Performance testing shall be conducted using the following U.S. EPA Reference Test Methods: [To preclude 401 KAR 51:017]
- i. U.S EPA Reference Method 5 for PM;
 - ii. U.S. EPA Reference Methods 201A/202 for PM₁₀ and PM_{2.5}; and
 - iii. U.S. EPA Reference Method 7 for NO_x; or
 - iv. Other methods, as approved by the Division
- i. The permittee shall conduct subsequent performance testing within 5 years of the date the previous performance test, which verified compliance with the emission limits required to preclude 401 KAR 51:017, was conducted. Performance testing shall be conducted to verify and establish the PM, PM₁₀, PM_{2.5}, and NO_x emission factors associated with Emission Unit # 123. Subsequent performance testing conducted to verify compliance with the emission limits required to preclude 401 KAR 51:017 shall satisfy all conditions specified for initial performance testing required by 401 KAR 51:017. [To preclude 401 KAR 51:017]

4. Specific Monitoring Requirements:

- a. The permittee shall monitor the amount of natural gas (MMscf) combusted on a monthly basis and maintain a 12-month rolling total. [40 CFR 60.48c(g)(2), 401 KAR 52:020, Section 10]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- b. The permittee shall calculate monthly and 12-month rolling total emissions for NO_x for Emission Unit # 123. Calculations shall be based upon emission factors most recently approved by the Division. [401 KAR 52:020, Section 10, and to preclude 401 KAR 51:017]
- c. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

5. Specific Recordkeeping Requirements:

- a. The permittee shall maintain records of natural gas combusted (MMscf) on a monthly basis and on a 12-month rolling total basis. [40 CFR 60.48c(g)(2), 401 KAR 52:020, Section 10]
- b. All records required under 40 CFR 60.48c shall be maintained by the permittee for a period of two years following the date of such record. [40 CFR 60.48c(i)]
- c. The permittee shall keep records according to 40 CFR 63.7555(a)(1) and (2). [40 CFR 63.7555(a)]
 - i. A copy of each notification and report submitted to comply with 40 CFR 63, Subpart DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report submitted, according to the requirements in 40 CFR 63.10(b)(2)(xiv). [40 CFR 63.7555(a)(1)]
 - ii. Records of performance tests, fuel analyses, or other compliance demonstrations and performance evaluations as required in 40 CFR 63.10(b)(2)(viii). [40 CFR 63.7555(a)(2)]
- d. Records shall be in a form suitable and readily available for expeditious review, according to 40 CFR 63.10(b)(1). [40 CFR 63.7560(a)].
- e. As specified in 40 CFR 63.10(b)(1), the permittee shall keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record [40 CFR 63.7560(b)]
- f. The permittee shall keep each record on site, or they shall be accessible from on site (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1). Records can be kept off site for the remaining 3 years. [40 CFR 63.7560(c)]
- g. The permittee shall maintain a copy of the GCOP plan as well as any revisions. [401 KAR 52:020, Section 10]
- h. The permittee shall maintain records of any time that Emission Unit # 123 was not operated according to the GCOP plan with a description of the situation and actions taken to remedy the issue. [401 KAR 52:020, Section 10]
- i. The permittee shall maintain records of monthly and 12-month rolling total emissions for NO_x for Emission Unit # 123. [401 KAR 52:020, Section 10]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- j. The permittee shall document the actions, including duration of the startup period, during startup period and shutdown periods by signed, contemporaneous logs or other relevant evidence. [401 KAR 59:015, Section 7(1)(d)]
- k. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

6. Specific Reporting Requirements:

- a. The permittee shall submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in 40 CFR 63.7545(e). [40 CFR 63.7530(f)]
- b. The permittee shall report each instance in which an applicable emission limit and operating limit in 40 CFR 63, Subpart DDDDD Tables 1 through 4 or 11 through 13 was not met. These instances are deviations from the emission limits or operating limits, respectively, in 40 CFR 63, Subpart DDDDD. These deviations shall be reported according to the requirements in 40 CFR 63.7550. [40 CFR 63.7540(b)]
- c. The permittee shall submit to the Administrator all of the notifications in 40 CFR 63.7(b) and (c), 40 CFR 63.8(e), (f)(4) and (6), and 40 CFR 63.9(b) through (h) as applicable by the dates specified. [40 CFR 63.7545(a)]
- d. As specified in 40 CFR 63.9(b)(4) and (5), the permittee shall submit an Initial Notification not later than 15 days after the actual date of startup of the affected source. [40 CFR 63.7545(c)]
- e. The permittee shall submit a Notification of Compliance Status. The Notification of Compliance Status shall contain the information specified in 40 CFR 63.7545(e)(1) and (8) and shall be submitted within 60 days of the compliance date specified at 40 CFR 63.7495(b). [40 CFR 63.7545(e)]
 - i. A description of the affected unit(s) including identification of which subcategories the unit is in, the design heat input capacity of the unit, a description of the add-on controls used on the unit to comply with 40 CFR 63, Subpart DDDDD, description of the fuel(s) burned, including whether the fuel(s) were a secondary material determined by the permittee or the EPA through a petition process to be a non-waste under 40 CFR 241.3, and justification for the selection of fuel(s) burned during the compliance demonstration. [40 CFR 63.7545(e)(1)]
 - ii. In addition to the information required in 40 CFR 63.9(h)(2), the notification of compliance status shall include the following certification(s) of compliance, as applicable, and signed by a responsible official: [40 CFR 63.7545(e)(8)]
 - 1. “This facility completed the required initial tune-up for all of the boilers and process heaters covered by 40 CFR part 63 subpart DDDDD at this site according to the procedures in 40 CFR 63.7540(a)(10)(i) through (vi).” [40 CFR 63.7545(e)(8)(i)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- f. The permittee shall submit each report in 40 CFR 63, Subpart DDDDD, Table 9, as applicable. [40 CFR 63.7550(a)]
- g. Unless the EPA Administrator has approved a different schedule for submission of reports under 40 CFR 63.10(a), the permittee shall submit each report, according to 40 CFR 63.7550(h), by the date in 40 CFR 63, Subpart DDDDD, Table 9 and according to the requirements in 40 CFR 63.7550(b)(1) through (4). For units that are subject only to a requirement to conduct subsequent annual tune-ups according to 40 CFR 63.7540(a)(10), respectively, and not subject to emission limits or 40 CFR 63, Subpart DDDDD, Table 4 operating limits, the permittee may submit only annual compliance reports as specified in 40 CFR 63.7550(b)(1) through (4), instead of a semi-annual compliance report. [40 CFR 63.7550(b)]
 - i. The first semi-annual compliance report shall cover the period beginning on the compliance date that is specified for each boiler or process heater in 40 CFR 63.7495 and ending on June 30 or December 31, whichever date is the first date that occurs at least 180 days after the compliance date that is specified for the source in 40 CFR 63.7495. If submitting an annual compliance report, the first compliance report shall cover the period beginning on the compliance date that is specified for each boiler or process heater in 40 CFR 63.7495 and ending on December 31 within 1 year after the compliance date that is specified for the source in 40 CFR 63.7495. [40 CFR 63.7550(b)(1)]
 - ii. The first semi-annual compliance report shall be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for each boiler or process heater in 40 CFR 63.7495. The first annual compliance report shall be postmarked or submitted no later than January 31. [40 CFR 63.7550(b)(2)]
 - iii. Each subsequent semi-annual compliance report shall cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. Annual compliance reports shall cover the 1-year period from January 1 to December 31. [40 CFR 63.7550(b)(3)]
 - iv. Each subsequent semi-annual compliance report shall be postmarked or submitted no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period. Annual compliance reports shall be postmarked or submitted no later than January 31. [40 CFR 63.7550(b)(4)]
 - v. For each affected source that is subject to permitting regulations pursuant to 40 CFR Part 70 or 40 CFR Part 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), the permittee may submit the first and subsequent compliance reports according to the dates the permitting authority has established in the permit instead of according to the dates in 40 CFR 63.7550(b)(1) through (4) [40 CFR 63.7550(b)(5)].

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- h. A compliance report shall contain the following information: [40 CFR 63.7550(c)]
 - i. The permittee shall submit a compliance report with the information in 40 CFR 63.7550(c)(5)(i) through (iii), and 40 CFR 63.7550(c)(xiv) and (xvii) [40 CFR 63.7550(c)(1)].
 - ii. Company and Facility name and address [40 CFR 63.7550(c)(5)(i)].
 - iii. Process unit information, emissions limitations, and operating parameter limitations [40 CFR 63.7550(c)(5)(ii)].
 - iv. Date of report and beginning and ending dates of the reporting period [40 CFR 63.7550(c)(5)(iii)].
 - v. Include the date of the most recent tune-up for each unit subject to only the requirement to conduct an annual tune-up according to 40 CFR 63.7540(a)(10). Include the date of the most recent burner inspection if it was not done annually and was delayed until the next scheduled or unscheduled unit shutdown. [40 CFR 63.7550(c)(xiv)]
 - vi. Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report [40 CFR 63.7550(c)(5)(xvii)].
- i. The permittee shall submit all reports required by 40 CFR 63, Subpart DDDDD, Table 9 electronically to the EPA via the CEDRI. (CEDRI can be accessed through the EPA's CDX.) The permittee shall use the appropriate electronic report in CEDRI for 40 CFR 63, Subpart DDDDD. Instead of using the electronic report in CEDRI for 40 CFR 63, Subpart DDDDD, the permittee may submit an alternate electronic file consistent with the XML schema listed on the CEDRI Web site (<http://www.epa.gov/ttn/chief/cedri/index.html>), once the XML schema is available. If the reporting form specific to 40 CFR 63, Subpart DDDDD is not available in CEDRI at the time that the report is due, the permittee shall submit the report to the Administrator at the appropriate address listed in 40 CFR 63.13. The permittee shall begin submitting reports via CEDRI no later than 90 days after the form becomes available in CEDRI. [40 CFR 63.7550(h)(3)]
- j. The permittee shall submit notification of the date of construction or reconstruction and actual startup, as provided by 40 CFR 60.7. This notification shall include: [40 CFR 60.48c(a)]
 - i. The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility [40 CFR 60.48c(a)(1)].
 - ii. If applicable, a copy of any federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under 40 CFR 60.42c or 40 CFR 60.43c [40 CFR 60.48c(a)(2)].

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- iii. The annual capacity factor at which the permittee anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired [40 CFR 60.48c(a)(3)].
- iv. Notification if an emerging technology will be used for controlling SO₂ emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the permittee to submit additional information concerning the control device. The affected facility is subject to the provisions of 40 CFR 60.42c(a) or (b)(1), unless and until this determination is made by the Administrator. [40 CFR 60.48c(a)(4)]
- k. The permittee shall include, in the semi-annual report, any time that Emission Unit # 123 was not operated according to the GCOP plan required to preclude 401 KAR 51:017 with a description of the situation and actions taken to remedy the issue. [401 KAR 52:020, Section 10]
- l. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit #131: Diesel-fired Fire Pump Engine #1

Emission Unit #	Unit Name	Maximum Capacity (bHP)	Control Device	Construction Commenced
Process Area 05: Auxiliary Systems				
131	Fire Pump Engine #1	350	----	May 2018

APPLICABLE REGULATIONS:

401 KAR 60:005, Section 2(2)(dddd), 40 C.F.R. 60.4200 to 60.4219, Tables 1 to 8 (Subpart IIII), *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*

Note: D.C. Circuit Court [*Delaware v. EPA*, 785 F. 3d 1 (D.C. Cir. 2015)] has vacated the provisions in 40 CFR 60, Subpart IIII that contain the 100-hour exemption for operation of emergency engines for purposes of emergency demand response under 40 CFR 60.4211(f)(2)(ii)-(iii). The D.C. Circuit Court issued the mandate for the vacatur on May 4, 2016.

401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*

PRECLUDED REGULATIONS:

401 KAR 51:017, *Prevention of significant deterioration of air quality*, for PM, PM₁₀, PM_{2.5}, NO_x, CO, VOC, and GHG

1. Operating Limitations:

- a. The permittee shall meet the requirements of 40 CFR Part 63 by meeting the requirements of 40 CFR 60, Subpart IIII. No further requirements apply under 40 CFR Part 63. [40 CFR 63.6590(c) and 40 CFR 63.6590(c)(6)]
- b. The permittee shall operate and maintain the stationary compression ignition (CI) internal combustion engines (ICE) that achieve the emission standards as required in 40 CFR 60.4205 over the entire life of the engine [40 CFR 60.4206].

Compliance Demonstration Method:

Compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements** (d).

- c. The permittee shall use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel [40 CFR 60.4207(b)].

Compliance Demonstration Method:

Compliance shall be demonstrated according to **5. Specific Recordkeeping Requirements** (c).

- d. The permittee shall do all of the following, except as permitted under 40 CFR 60.4211(g): [40 CFR 60.4211(a)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- i. Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions; [40 CFR 60.4211(a)(1)]
- ii. Change only those emission-related settings that are permitted by the manufacturer; and [40 CFR 60.4211(a)(2)]
- iii. Meet the requirements of 40 CFR Parts 89, 94, and/or 1068, as they apply [40 CFR 60.4211(a)(3)].

Compliance Demonstration Method:

Compliance shall be demonstrated according to 5. **Specific Recordkeeping Requirements (d)**.

- e. The permittee shall operate the emergency stationary ICE according to the requirements in 40 CFR 60.4211(f)(1) through (3). In order for the engine to be considered an emergency stationary ICE under 40 CFR 60, Subpart III, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in 40 CFR 60.4211(f)(1) through (3), is prohibited. If the engine is not operated according to the requirements in 40 CFR 60.4211(f)(1) through (3), the engine will not be considered an emergency engine under 40 CFR 60, Subpart III and shall meet all requirements for non-emergency engines. [40 CFR 60.4211(f)]
 - i. There is no time limit on the use of emergency stationary ICE in emergency situations [40 CFR 60.4211(f)(1)].
 - ii. The permittee may operate the emergency stationary ICE for maintenance checks and readiness testing for a maximum of 100 hours per calendar year, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The permittee may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the permittee maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. Any operation for non-emergency situations as allowed by 40 CFR 60.4211(f)(3) counts as part of the 100 hours per calendar year allowed by 40 CFR 60.4211(f)(2). [40 CFR 60.4211(f)(2) and 40 CFR 60.4211(f)(2)(i)]
 - iii. Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in 40 CFR 60.4211(f)(2). Except as provided in 40 CFR 60.4211(f)(3)(i), the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

arrangement with another entity. The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met: [40 CFR 60.4211(f)(3) and 40 CFR 60.4211(f)(3)(i)]

1. The engine is dispatched by the local balancing authority or local transmission and distribution system operator; [40 CFR 60.4211(f)(3)(i)(A)]
2. The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region [40 CFR 60.4211(f)(3)(i)(B)].
3. The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines [40 CFR 60.4211(f)(3)(i)(C)].
4. The power is provided only to the facility itself or to support the local transmission and distribution system [40 CFR 60.4211(f)(3)(i)(D)].
5. The permittee identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the permittee. [40 CFR 60.4211(f)(3)(i)(E)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (a), (b), and 5. Specific Recordkeeping Requirements (a)**.

2. Emission Limitations:

- a. NMHC + NO_x emissions shall not exceed 4.0 g/kW-hr (3.0 g/HP-hr) [40 CFR 60.4205(c) referencing 40 CFR 60, Subpart III, Table 4].
- b. CO emissions shall not exceed 3.5 g/kW-hr (2.6 g/HP-hr) [40 CFR 60.4205(c) referencing 40 CFR 60, Subpart III, Table 4].
- c. PM emissions shall not exceed 0.20 g/kW-hr (0.15 g/HP-hr) [40 CFR 60.4205(c) referencing 40 CFR 60, Subpart III, Table 4].

Compliance Demonstration Method:

The permittee shall comply by either:

1. Purchasing an engine certified to the emission standards in 40 CFR 60.4205(c) for the same model year and NFPA nameplate engine power. The engine shall be installed and configured according to the manufacturer's emission-related specifications, except as permitted in 40 CFR 60.4211(g); or [40 CFR 60.4211(c)]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

2. If the permittee does not install, configure, operate, and maintain the engine and control device according to the manufacturer's emission-related written instructions, or the permittee changes emission-related settings in a way that is not permitted by the manufacturer, the permittee shall keep a maintenance plan and records of conducted maintenance and shall, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, the permittee shall conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission related written instructions, or within 1 year after the permittee changes emission-related settings in a way that is not permitted by the manufacturer. [40 CFR 60.4211(g) and 40 CFR 60.4211(g)(2)]
 - d. Refer to **Section D – Source Emission Limitations and Testing Requirements** for source-wide emission limitations to preclude 401 KAR 51:017.
3. **Testing Requirements:**

Performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted as required by the Division in accordance with 401 KAR 50:045, Section 1.
4. **Specific Monitoring Requirements:**
 - a. The permittee shall install a non-resettable hour meter prior to startup of the engine. [40 CFR 60.4209(a)]
 - b. The permittee shall monitor the hours of operation of the engine in emergency and non-emergency service and the reason the engine was in operation during that time. [40 CFR 60.4214(b) and 401 KAR 52:020, Section 10]
 - c. The permittee shall monitor the amount of fuel combusted (Mgal) on a monthly basis. [401 KAR 52:020, Section 10]
 - d. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.
5. **Specific Recordkeeping Requirements:**
 - a. The permittee shall keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The permittee shall record the time of operation of the engine and the reason the engine was in operation during that time. [40 CFR 60.4214(b)]
 - b. The permittee shall maintain records of fuel combusted (Mgal) on a monthly basis. [401 KAR 52:020, Section 10]
 - c. The permittee shall maintain records of fuel purchases to show that the fuel meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel. [401 KAR 52:020, Section 10]

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

- d. The permittee shall maintain records of maintenance conducted on the engine consistent with the operating requirements of 40 CFR 60.4206 and 40 CFR 60.4211(a). [401 KAR 52:020, Section 10]
- e. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

6. Specific Reporting Requirements:

Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

Emission Unit #139:

Haul Roads

Description:

Paved haul roads: 5.5 miles

APPLICABLE REGULATIONS:

401 KAR 63:010, *Fugitive emissions*

1. Operating Limitations:

The permittee shall not cause, suffer, or allow any material to be handled, processed, transported, or stored; a building or its appurtenances to be constructed, altered, repaired, or demolished, or a road to be used without taking reasonable precaution to prevent particulate matter from becoming airborne. Such reasonable precautions shall include, when applicable, but not be limited to the following: [401 KAR 63:010, Section 3(1)]

- a. Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land; [401 KAR 63:010, Section 3(1)(a)]
- b. Application and maintenance of asphalt, oil, water, or suitable chemicals on roads, materials stockpiles, and other surfaces which can create airborne dusts; [401 KAR 63:010, Section 3(1)(b)]
- c. Covering, at all times when in motion, open bodied trucks transporting materials likely to become airborne; [401 KAR 63:010, Section 3(1)(d)]
- d. The maintenance of paved roadways in a clean condition; [401 KAR 63:010, Section 3(1)(e)]
- e. The prompt removal of earth or other material from a paved street which earth or other material has been transported thereto by trucking or earth moving equipment or erosion by water. [401 KAR 63:010, Section 3(1)(f)]

Compliance Demonstration Method:

Compliance shall be demonstrated according to **4. Specific Monitoring Requirements (a)** and **5. Specific Recordkeeping Requirements (a)**.

2. Emission Limitations:

The permittee shall not cause or permit the discharge of visible fugitive dust emissions beyond the lot line of the property on which the emissions originate [401 KAR 63:010, Section 3(2)].

Compliance Demonstration Method:

Compliance shall be demonstrated according to **1. Operating Limitations**.

3. Testing Requirements:

Performance testing using the reference methods specified in 401 KAR 50:015 shall be conducted as required by the Division in accordance with 401 KAR 50:045, Section 1.

SECTION B - EMISSION UNITS, EMISSION POINTS, APPLICABLE REGULATIONS, AND OPERATING CONDITIONS (CONTINUED)

4. Specific Monitoring Requirements:

- a. The permittee shall monitor the operating conditions of haul roads at least weekly and keep records of actions taken to prevent the discharge of visible fugitive emissions beyond the property line for each unit. [401 KAR 52:020, Section 10]
- b. The permittee shall monitor the material processed (tons) and associated vehicle miles travelled for each unit on a monthly basis [401 KAR 52:020, Section 10].
- c. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

5. Specific Recordkeeping Requirements:

- a. The permittee shall maintain records of the actions taken to prevent the discharge of visible fugitive emissions beyond the property line on a monthly basis [401 KAR 52:020, Section 10].
- b. The permittee shall maintain records of the material processed (tons) and associated vehicle miles travelled on a monthly basis [401 KAR 52:020, Section 10].
- c. Refer to **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

6. Specific Reporting Requirements:

See **Section F – Monitoring, Recordkeeping, and Reporting Requirements** for additional requirements.

SECTION C - INSIGNIFICANT ACTIVITIES

The following listed activities have been determined to be insignificant activities for this source pursuant to 401 KAR 52:020, Section 6. Although these activities are designated as insignificant the permittee must comply with the applicable regulation. Process and emission control equipment at each insignificant activity subject to an opacity standard shall be inspected monthly and a qualitative visible emissions evaluation made. Results of the inspection, evaluation, and any corrective action shall be recorded in a log.

<u>Description</u>	<u>Generally Applicable Regulation</u>
1. Crucible Preheating Station #1 (EP# 023)	N/A
2. Crucible Preheating Station #2 (EP# 024)	N/A
3. Crucible Preheating Station #3 (EP# 025)	N/A
4. Line 1 Trough Heater (EP# 026)	N/A
5. Line 2 Trough Heater (EP# 027)	N/A
6. Line 3 Trough Heater (EP# 028)	N/A
7. Line 4 Trough Heater (EP# 029)	N/A
8. Line 5 Trough Heater (EP# 030)	N/A
9. Filter Box Preheater #1 (EP# 034)	N/A
10. Filter Box Preheater #2 (EP# 035)	N/A
11. Filter Box Preheater #3 (EP# 036)	N/A
12. RM Main Emulsion Tank (EP# 135)	N/A
13. RM Base Oil Tank (EP# 136)	N/A
14. FM Main Emulsion Tank (EP# 137)	N/A
15. FM Base Oil Tank (EP# 138)	N/A
16. Roll Texturing Machine (RTM) (EP# 122)	401 KAR 59:010
17. Cooling Tower #1 (EP# 124)	401 KAR 59:010
18. Cooling Tower #2 (EP# 125)	401 KAR 59:010
19. Cooling Tower #3 (EP# 126)	401 KAR 59:010
20. Cooling Tower #4 (EP# 127)	401 KAR 59:010
21. Sow Dryer #1 (EP #132)	401 KAR 59:010
22. Sow Dryer #2 (EP #133)	401 KAR 59:010
23. Sow Dryer #3 (EP #134)	401 KAR 59:010

SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS

1. As required by Section 1b of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26; compliance with annual emissions and processing limitations contained in this permit, shall be based on emissions and processing rates for any twelve (12) consecutive months.
2. CO, NO_x, PM, PM₁₀, PM_{2.5}, SO₂, VOC, D/F, HCl, HF, H₂SO₄ emissions, measured by applicable reference methods, or an equivalent or alternative method specified in 40 C.F.R. Chapter I, or by a test method specified in the state implementation plan shall not exceed the respective limitations specified herein.
3. **Requirements for Secondary Aluminum Processing Units:**
 - a. If the source cannot or chooses not to demonstrate compliance with the applicable individual emission limitations under 40 CFR 63, Subpart RRR, the permittee shall comply with the emission limits calculated using the equations for PM and HCl in 40 CFR 63.1505(k)(1) and (2) for each secondary aluminum processing unit. The permittee shall comply with the emission limit calculated using the equation for D/F in 40 CFR 63.1505(k)(3) for each secondary aluminum processing unit. [40 CFR 63.1505(k)]

$$L_{c_{PM,HCl,D/F}} = \frac{\sum_{i=1}^n (L_{i_{PM,HCl,D/F}} \times T_{ii})}{\sum_{i=1}^n (T_{ii})}$$

Where:

$L_{i_{PM,HCl,D/F}}$ = the PM, HCl, or D/F emission limit for individual emission unit i in the SAPU,;

T_{ii} = the feed/charge rate for individual emission unit i during the performance test;

$L_{c_{PM,HCl,D/F}}$ = the PM, HCl, or D/F emission limit for the secondary aluminum processing unit. [40 CFR 63.1505(k)(1), (2), and (3)]

- b. The permittee may demonstrate compliance with the emission limits of paragraphs 40 CFR 63.1505(k)(1) through (3) by demonstrating that each emission unit within the SAPU is in compliance with the applicable emission limits of 40 CFR 63.1505(i) and (j). [40 CFR 63.1505(k)(4)]
- c. The permittee shall calculate and record the 3-day, 24-hour rolling average emissions of PM, HCl, and D/F for each secondary aluminum processing unit on a daily basis. To calculate the 3-day, 24-hour rolling average, the permittee shall: [40 CFR 63.1510(t)]
 - i. Calculate and record the total weight of material charged to each emission unit in the secondary aluminum processing unit for each 24-hour day of operation using the feed/charge weight information required in 40 CFR 63.1510(e). If the permittee chooses to comply on the basis of weight of aluminum produced by the emission unit, rather than weight of material charged to the emission unit, all performance test emissions results and all calculations shall be conducted on the aluminum production weight basis. [40 CFR 63.1510(t)(1)]

SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS (CONTINUED)

- ii. Multiply the total feed/charge weight to the emission unit, or the weight of aluminum produced by the emission unit, for each emission unit for the 24-hour period by the emission rate (in lb/ton of feed/charge) for that emission unit (as determined during the performance test) to provide emissions for each emission unit for the 24-hour period, in pounds. [40 CFR 63.1510(t)(2)]
 1. If the permittee has not conducted performance tests for HCl for a group 1 furnace or for HCl for an in-line fluxer, in accordance with the provisions of 40 CFR 63.1512(d)(3) or (h)(2), the calculation required in 40 CFR 63.1510(t)(4) to determine SAPU-wide HCl emissions shall be made under the assumption that all chlorine contained in reactive flux added to the emission unit is emitted as HCl. [40 CFR 63.1510(t)(2)(ii)]
- iii. Divide the total emissions for each SAPU for the 24-hour period by the total material charged to the SAPU, or the weight of aluminum produced by the SAPU over the 24-hour period to provide the daily emission rate for the SAPU. [40 CFR 63.1510(t)(3)]
- iv. Compute the 24 hour daily emission rate using 40 CFR 63, Subpart RRR, Equation 4:

$$E_{day} = \frac{\sum_{i=1}^n (T_i \times ER_i)}{\sum_{i=1}^n T_i}$$

Where:

E_{day} = The daily PM, HCl, and D/F emission rate for the secondary aluminum processing unit for the 24-hour period;

T_i = The total amount of feed, or aluminum produced, for emission unit i for the 24-hour period (tons or Mg);

ER_i = The measured emission rate for emission unit i as determined in the performance test (lb/ton or $\mu\text{g}/\text{Mg}$ of feed/charge); and

n = The number of emission units in the secondary aluminum processing unit
[40 CFR 63.1510(t)(4)]

- v. Calculate and record the 3-day, 24-hour rolling average for each pollutant each day by summing the daily emission rates for each pollutant over the 3 most recent consecutive days and dividing by 3. The SAPU is in compliance with an applicable emission limit if the 3-day, 24-hour rolling average for each pollutant is no greater than the applicable SAPU emission limit determined in accordance with 40 CFR 63.1505(k)(1)-(3). [40 CFR 63.1510(t)(5)]
4. **Source-Wide Requirements for Fugitive Emissions:**
- a. For each apparatus, operation, or road which emits or may emit fugitive emissions that is not subject to an opacity standard within the administrative regulations of the Division for Air Quality, the permittee shall not cause, suffer, or allow any material to be handled, processed, transported, or stored; a building or its appurtenances to be constructed, altered, repaired, or demolished, or a road to be used without taking reasonable precaution to prevent particulate matter from becoming airborne. Such reasonable precautions shall

SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS (CONTINUED)

include, when applicable, but not be limited to the following: [401 KAR 63:010, Section 3(1)]

- i. Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land; [401 KAR 63:010, Section 3(1)(a)]
 - ii. Application and maintenance of asphalt, oil, water, or suitable chemicals on roads, materials stockpiles, and other surfaces which can create airborne dusts; [401 KAR 63:010, Section 3(1)(b)]
 - iii. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials, or the use of water sprays or other measures to suppress the dust emissions during handling. Adequate containment methods shall be employed during sandblasting or other similar operations; [401 KAR 63:010, Section 3(1)(c)]
 - iv. Covering, at all times when in motion, open bodied trucks transporting materials likely to become airborne; [401 KAR 63:010, Section 3(1)(d)]
 - v. The maintenance of paved roadways in a clean condition; [401 KAR 63:010, Section 3(1)(e)]
 - vi. The prompt removal of earth or other material from a paved street which earth or other material has been transported thereto by trucking or earth moving equipment or erosion by water [401 KAR 63:010, Section 3(1)(f)].
- b. No person shall cause or permit the discharge of visible fugitive dust emissions beyond the lot line of the property on which the emissions originate [401 KAR 63:010, Section 3(2)].
 - c. When dust, fumes, gases, mist, odorous matter, vapors, or any combination thereof escape from a building or equipment in such a manner an amount as to cause a nuisance or to violate any administrative regulation, the secretary may order that the building or equipment in which processing, handling and storage are done by tightly closed and ventilated in such a way that all air and gases and air or gas-borne material leaving the building or equipment are treated by removal or destruction of air contaminants before discharge to the open air [401 KAR 63:010, Section 3(3)].
 - d. In addition to the requirements of 401 KAR 63:010, Section 3, the following shall apply: [401 KAR 63:010, Section 4]
 - i. At all times when in motion, open bodied trucks, operating outside company property, transporting materials likely to become airborne shall be covered [401 KAR 63:010, Section 4(1)].
 - ii. The provisions of 401 KAR 63:010, Section 3(1) and (2) shall not be applicable to temporary blasting or construction operations [401 KAR 63:010, Section 4(3)].

SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS (CONTINUED)

- iii. No one shall allow earth or other material being transported by truck or earth moving equipment to be deposited onto a paved street or roadway [401 KAR 63:010, Section 4(4)].

5. Source-Wide NO_x Emission Limitation:

The permittee shall limit source-wide emissions of NO_x to 234.0 tons per year on a 12-month rolling total basis. [To preclude 401 KAR 51:017]

Compliance Demonstration Method:

Compliance shall be demonstrated by calculating the monthly and 12-month rolling total source-wide NO_x emissions and maintaining records of the monthly and 12-month rolling total source-wide NO_x emissions. Monthly source-wide NO_x emissions shall be calculated using:

1. For Emission Unit #'s 001 & 007, 002 & 008, 003 & 009, 041 through 046, 056 through 060, 066 through 085, 094, 095, 100, 104, 105, 110, 114, 115, 120, and 123: the monthly NO_x emissions calculated as required by **Section B – Emission Units, Emission Points, Applicable Regulations, and Operating Conditions**;
2. For Emission Unit #'s 128 through 131: 1.50 tons NO_x/month (i.e., the potential to emit for Emission Unit #'s 128 through 131 on a monthly basis); and
3. For Insignificant Activities: The potential to emit for NO_x from all insignificant activities on a monthly basis (e.g., 1.46 tons NO_x/month for Emission Unit #'s 023 through 030, 034 through 036, and 132 through 134).

6. Source-Wide PM Emission Limitation:

The permittee shall limit source-wide emissions of PM to 225.0 tons per year on a 12-month rolling total basis. [To preclude 401 KAR 51:017]

Compliance Demonstration Method:

The permittee is assumed to be in compliance with the source-wide PM emission limitation by satisfying all requirements to preclude 401 KAR 51:017 associated with Emission Units that have the potential to emit PM, specified in **Section B – Emission Units, Emission Points, Applicable Regulations, and Operating Conditions**, as considered in the source-wide potential to emit determined by the Division based upon information provided in the application (APE20180001).

7. Source-Wide PM₁₀ Emission Limitation:

The permittee shall limit source-wide emissions of PM₁₀ to 225.0 tons per year on a 12-month rolling total basis. [To preclude 401 KAR 51:017]

Compliance Demonstration Method:

The permittee is assumed to be in compliance with the source-wide PM₁₀ emission limitation by satisfying all requirements to preclude 401 KAR 51:017 associated with Emission Units that have the potential to emit PM₁₀, specified in **Section B – Emission Units, Emission Points, Applicable Regulations, and Operating Conditions**, as considered in the source-

SECTION D - SOURCE EMISSION LIMITATIONS AND TESTING REQUIREMENTS (CONTINUED)

wide potential to emit determined by the Division based upon information provided in the application (APE20180001).

8. ***Source-Wide PM_{2.5} Emission Limitation:***

The permittee shall limit source-wide emissions of PM_{2.5} to 225.0 tons per year on a 12-month rolling total basis. [To preclude 401 KAR 51:017]

Compliance Demonstration Method:

The permittee is assumed to be in compliance with the source-wide PM_{2.5} emission limitation by satisfying all requirements to preclude 401 KAR 51:017 associated with Emission Units that have the potential to emit PM_{2.5}, specified in **Section B – Emission Units, Emission Points, Applicable Regulations, and Operating Conditions**, as considered in the source-wide potential to emit determined by the Division based upon information provided in the application (APE20180001).

9. ***Source-Wide VOC Emission Limitation:***

The permittee shall limit source-wide emissions of VOC to 225.0 tons per year on a 12-month rolling total basis. [To preclude 401 KAR 51:017]

Compliance Demonstration Method:

The permittee is assumed to be in compliance with the source-wide VOC emission limitation by satisfying all requirements to preclude 401 KAR 51:017 associated with Emission Units that have the potential to emit VOC, specified in **Section B – Emission Units, Emission Points, Applicable Regulations, and Operating Conditions**, as considered in the source-wide potential to emit determined by the Division based upon information provided in the application (APE20180001).

10. ***Flux Usage Rate Limitation:***

The permittee shall limit the addition of reactive flux to 1% or less per batch on a mass basis (i.e., cumulative addition at the Melting Furnace, Holding Furnace, and In-Line Degasser). [To preclude 401 KAR 51:017]

Compliance Demonstration Method:

The permittee shall demonstrate compliance by:

1. Monitoring and maintaining records of mass of aluminum and cumulative mass of reactive flux added per batch; and
2. Calculating percent reactive flux addition for each batch to demonstrate compliance with the flux usage rate limitation.

SECTION E - SOURCE CONTROL EQUIPMENT REQUIREMENTS

Pursuant to 401 KAR 50:055, Section 2(5), at all times, including periods of startup, shutdown and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Division which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

SECTION F - MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS

1. Pursuant to Section 1b-IV-1 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26, when continuing compliance is demonstrated by periodic testing or instrumental monitoring, the permittee shall compile records of required monitoring information that include:
 - a. Date, place as defined in this permit, and time of sampling or measurements;
 - b. Analyses performance dates;
 - c. Company or entity that performed analyses;
 - d. Analytical techniques or methods used;
 - e. Analyses results; and
 - f. Operating conditions during time of sampling or measurement.
2. Records of all required monitoring data and support information, including calibrations, maintenance records, and original strip chart recordings, and copies of all reports required by the Division for Air Quality, shall be retained by the permittee for a period of five (5) years and shall be made available for inspection upon request by any duly authorized representative of the Division for Air Quality [Sections 1b-IV-2 and 1a-8 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
3. In accordance with the requirements of 401 KAR 52:020, Section 3(1)h, the permittee shall allow authorized representatives of the Cabinet to perform the following during reasonable times:
 - a. Enter upon the premises to inspect any facility, equipment (including air pollution control equipment), practice, or operation;
 - b. To access and copy any records required by the permit;
 - c. Sample or monitor, at reasonable times, substances or parameters to assure compliance with the permit or any applicable requirements.Reasonable times are defined as during all hours of operation, during normal office hours; or during an emergency.
4. No person shall obstruct, hamper, or interfere with any Cabinet employee or authorized representative while in the process of carrying out official duties. Refusal of entry or access may constitute grounds for permit revocation and assessment of civil penalties.
5. Summary reports of any monitoring required by this permit shall be submitted to the Regional Office listed on the front of this permit at least every six (6) months during the life of this permit, unless otherwise stated in this permit. For emission units that were still under construction or which had not commenced operation at the end of the 6-month period covered by the report and are subject to monitoring requirements in this permit, the report shall indicate that no monitoring was performed during the previous six months because the emission unit was not in operation [Sections 1b-V-1 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].

SECTION F - MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS (CONTINUED)

6. The semi-annual reports are due by January 30th and July 30th of each year. All reports shall be certified by a responsible official pursuant to 401 KAR 52:020, Section 23. If continuous emission and opacity monitors are required by regulation or this permit, data shall be reported in accordance with the requirements of 401 KAR 59:005, General Provisions, Section 3(3). All deviations from permit requirements shall be clearly identified in the reports.
7. In accordance with the provisions of 401 KAR 50:055, Section 1, the owner or operator shall notify the Regional Office listed on the front of this permit concerning startups, shutdowns, or malfunctions as follows:
 - a. When emissions during any planned shutdowns and ensuing startups will exceed the standards, notification shall be made no later than three (3) days before the planned shutdown, or immediately following the decision to shut down, if the shutdown is due to events which could not have been foreseen three (3) days before the shutdown.
 - b. When emissions due to malfunctions, unplanned shutdowns and ensuing startups are or may be in excess of the standards, notification shall be made as promptly as possible by telephone (or other electronic media) and shall be submitted in writing upon request.
8. The permittee shall promptly report deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken shall be submitted to the Regional Office listed on the front of this permit. Where the underlying applicable requirement contains a definition of prompt or otherwise specifies a time frame for reporting deviations, that definition or time frame shall govern. Where the underlying applicable requirement does not identify a specific time frame for reporting deviations, prompt reporting, as required by Sections 1b-V, 3 and 4 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26, shall be defined as follows:
 - a. For emissions of a hazardous air pollutant or a toxic air pollutant (as identified in an applicable regulation) that continue for more than an hour in excess of permit requirements, the report must be made within 24 hours of the occurrence.
 - b. For emissions of any regulated air pollutant, excluding those listed in F.8.a., that continue for more than two hours in excess of permit requirements, the report must be made within 48 hours.
 - c. All deviations from permit requirements, including those previously reported, shall be included in the semiannual report required by F.6.
9. Pursuant to 401 KAR 52:020, Title V permits, Section 21, the permittee shall annually certify compliance with the terms and conditions contained in this permit, by completing and returning a Compliance Certification Form (DEP 7007CC) (or an alternative approved by the regional office) to the Regional Office listed on the front of this permit and the U.S. EPA in accordance with the following requirements:
 - a. Identification of the term or condition;
 - b. Compliance status of each term or condition of the permit;
 - c. Whether compliance was continuous or intermittent;
 - d. The method used for determining the compliance status for the source, currently and over the reporting period.

SECTION F - MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS (CONTINUED)

- e. For an emissions unit that was still under construction or which has not commenced operation at the end of the 12-month period covered by the annual compliance certification, the permittee shall indicate that the unit is under construction and that compliance with any applicable requirements will be demonstrated within the timeframes specified in the permit.
- f. The certification shall be submitted by January 30th of each year. Annual compliance certifications shall be sent to the following addresses:

Division for Air Quality
Ashland Regional Office
1550 Wolohan Dr. Ste. 1
Ashland, KY 41102

U.S. EPA Region 4
Air Enforcement Branch
Atlanta Federal Center
61 Forsyth St. SW
Atlanta, GA 30303-8960

- 10. In accordance with 401 KAR 52:020, Section 22, the permittee shall provide the Division with all information necessary to determine its subject emissions within 30 days of the date the Kentucky Emissions Inventory System (KYEIS) emissions survey is mailed to the permittee.

SECTION G - GENERAL PROVISIONS1. General Compliance Requirements

- a. The permittee shall comply with all conditions of this permit. Noncompliance shall be a violation of 401 KAR 52:020, Section 3(1)(b), and a violation of Federal Statute 42 USC 7401 through 7671q (the Clean Air Act). Noncompliance with this permit is grounds for enforcement action including but not limited to termination, revocation and reissuance, revision or denial of a permit [Section 1a-3 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- b. The filing of a request by the permittee for any permit revision, revocation, reissuance, or termination, or of a notification of a planned change or anticipated noncompliance, shall not stay any permit condition [Section 1a-6 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- c. This permit may be revised, revoked, reopened and reissued, or terminated for cause in accordance with 401 KAR 52:020, Section 19. The permit will be reopened for cause and revised accordingly under the following circumstances:
 - (1) If additional applicable requirements become applicable to the source and the remaining permit term is three (3) years or longer. In this case, the reopening shall be completed no later than eighteen (18) months after promulgation of the applicable requirement. A reopening shall not be required if compliance with the applicable requirement is not required until after the date on which the permit is due to expire, unless this permit or any of its terms and conditions have been extended pursuant to 401 KAR 52:020, Section 12;
 - (2) The Cabinet or the United States Environmental Protection Agency (U. S. EPA) determines that the permit must be revised or revoked to assure compliance with the applicable requirements;
 - (3) The Cabinet or the U. S. EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit;
 - (4) New requirements become applicable to a source subject to the Acid Rain Program.

Proceedings to reopen and reissue a permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists. Reopenings shall be made as expeditiously as practicable. Reopenings shall not be initiated before a notice of intent to reopen is provided to the source by the Division, at least thirty (30) days in advance of the date the permit is to be reopened, except that the Division may provide a shorter time period in the case of an emergency.

- d. The permittee shall furnish information upon request of the Cabinet to determine if cause exists for modifying, revoking and reissuing, or terminating the permit; or to determine compliance with the conditions of this permit [Sections 1a- 7 and 8 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- e. Emission units described in this permit shall demonstrate compliance with applicable requirements if requested by the Division [401 KAR 52:020, Section 3(1)(c)].

SECTION G - GENERAL PROVISIONS (CONTINUED)

- f. The permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information to the permitting authority [401 KAR 52:020, Section 7(1)].
- g. Any condition or portion of this permit which becomes suspended or is ruled invalid as a result of any legal or other action shall not invalidate any other portion or condition of this permit [Section 1a-14 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- h. The permittee shall not use as a defense in an enforcement action the contention that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance [Section 1a-4 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- i. All emission limitations and standards contained in this permit shall be enforceable as a practical matter. All emission limitations and standards contained in this permit are enforceable by the U.S. EPA and citizens except for those specifically identified in this permit as state-origin requirements. [Section 1a-15 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- j. This permit shall be subject to suspension if the permittee fails to pay all emissions fees within 90 days after the date of notice as specified in 401 KAR 50:038, Section 3(6) [Section 1a-10 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- k. Nothing in this permit shall alter or affect the liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance [401 KAR 52:020, Section 11(3) 2].
- l. This permit does not convey property rights or exclusive privileges [Section 1a-9 of the *Cabinet Provisions and Procedures for Issuing Title V Permits* incorporated by reference in 401 KAR 52:020, Section 26].
- m. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits, licenses, or approvals required by the Cabinet or any other federal, state, or local agency.
- n. Nothing in this permit shall alter or affect the authority of U.S. EPA to obtain information pursuant to Federal Statute 42 USC 7414, Inspections, monitoring, and entry [401 KAR 52:020, Section 11(3) 4.].
- o. Nothing in this permit shall alter or affect the authority of U.S. EPA to impose emergency orders pursuant to Federal Statute 42 USC 7603, Emergency orders [401 KAR 52:020, Section 11(3) 1.].

SECTION G - GENERAL PROVISIONS (CONTINUED)

- p. This permit consolidates the authority of any previously issued PSD, NSR, or Synthetic Minor source preconstruction permit terms and conditions for various emission units and incorporates all requirements of those existing permits into one single permit for this source.
- q. Pursuant to 401 KAR 52:020, Section 11, a permit shield shall not protect the owner or operator from enforcement actions for violating an applicable requirement prior to or at the time of permit issuance. Compliance with the conditions of this permit shall be considered compliance with:
 - (1) Applicable requirements that are included and specifically identified in this permit; and
 - (2) Non-applicable requirements expressly identified in this permit.

2. Permit Expiration and Reapplication Requirements

- a. This permit shall remain in effect for a fixed term of five (5) years following the original date of issue. Permit expiration shall terminate the source's right to operate unless a timely and complete renewal application has been submitted to the Division at least six (6) months prior to the expiration date of the permit. Upon a timely and complete submittal, the authorization to operate within the terms and conditions of this permit, including any permit shield, shall remain in effect beyond the expiration date, until the renewal permit is issued or denied by the Division [401 KAR 52:020, Section 12].
- b. The authority to operate granted shall cease to apply if the source fails to submit additional information requested by the Division after the completeness determination has been made on any application, by whatever deadline the Division sets [401 KAR 52:020, Section 8(2)].

3. Permit Revisions

- a. A minor permit revision procedure may be used for permit revisions involving the use of economic incentive, marketable permit, emission trading, and other similar approaches, to the extent that these minor permit revision procedures are explicitly provided for in the State Implementation Plan (SIP) or in applicable requirements and meet the relevant requirements of 401 KAR 52:020, Section 14(2).
- b. This permit is not transferable by the permittee. Future owners and operators shall obtain a new permit from the Division for Air Quality. The new permit may be processed as an administrative amendment if no other change in this permit is necessary, and provided that a written agreement containing a specific date for transfer of permit responsibility coverage and liability between the current and new permittee has been submitted to the permitting authority within ten (10) days following the transfer.

4. Construction, Start-Up, and Initial Compliance Demonstration Requirements

Pursuant to a duly submitted application the Kentucky Division for Air Quality hereby authorizes the construction of the equipment described herein, emission units 001-003, 007-009, 013-015, 019-036, 040-046, 049-054, 056-085, 092, 094-098, 100-102, 104-108, 110-

SECTION G - GENERAL PROVISIONS (CONTINUED)

112, 114-118, 120-130, and 132-139 in accordance with the terms and conditions of this permit (V-18-001).

- a. Construction of any process and/or air pollution control equipment authorized by this permit shall be conducted and completed only in compliance with the conditions of this permit.
- b. Within thirty (30) days following commencement of construction and within fifteen (15) days following start-up and attainment of the maximum production rate specified in the permit application, or within fifteen (15) days following the issuance date of this permit, whichever is later, the permittee shall furnish to the Regional Office listed on the front of this permit in writing, notification of the following:
 - (1) The date when construction commenced.
 - (2) The date of start-up of the affected facilities listed in this permit.
 - (3) The date when the maximum production rate specified in the permit application was achieved.
- c. Pursuant to 401 KAR 52:020, Section 3(2), unless construction is commenced within eighteen (18) months after the permit is issued, or begins but is discontinued for a period of eighteen (18) months or is not completed within a reasonable timeframe then the construction and operating authority granted by this permit for those affected facilities for which construction was not completed shall immediately become invalid. Upon written request, the Cabinet may extend these time periods if the source shows good cause.
- d. Pursuant to 401 KAR 50:055, Section 2(1)(a), an owner or operator of any affected facility subject to any standard within the administrative regulations of the Division for Air Quality shall demonstrate compliance with the applicable standard(s) within sixty (60) days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial start-up of such facility. Pursuant to 401 KAR 52:020, Section 3(3)(c), sources that have not demonstrated compliance within the timeframes prescribed in 401 KAR 50:055, Section 2(1)(a), shall operate the affected facility only for purposes of demonstrating compliance unless authorized under an approved compliance plan or an order of the cabinet.
- e. This permit shall allow time for the initial start-up, operation, and compliance demonstration of the affected facilities listed herein. However, within sixty (60) days after achieving the maximum production rate at which the affected facilities will be operated but not later than 180 days after initial start-up of such facilities, the permittee shall conduct a performance demonstration on the affected facilities in accordance with 401 KAR 50:055, General compliance requirements. Testing must also be conducted in accordance with General Provisions G.5 of this permit.
- f. Terms and conditions in this permit established pursuant to the construction authority of 401 KAR 51:017 or 401 KAR 51:052 shall not expire.

SECTION G - GENERAL PROVISIONS (CONTINUED)5. Testing Requirements

- a. Pursuant to 401 KAR 50:045, Section 2, a source required to conduct a performance test shall submit a completed Compliance Test Protocol form, DEP form 6028, or a test protocol a source has developed for submission to other regulatory agencies, in a format approved by the cabinet, to the Division's Frankfort Central Office a minimum of sixty (60) days prior to the scheduled test date. Pursuant to 401 KAR 50:045, Section 7, the Division shall be notified of the actual test date at least thirty (30) days prior to the test.
- b. Pursuant to 401 KAR 50:045, Section 5, in order to demonstrate that a source is capable of complying with a standard at all times, any required performance test shall be conducted under normal conditions that are representative of the source's operations and create the highest rate of emissions. If [When] the maximum production rate represents a source's highest emissions rate and a performance test is conducted at less than the maximum production rate, a source shall be limited to a production rate of no greater than 110 percent of the average production rate during the performance tests. If and when the facility is capable of operation at the rate specified in the application, the source may retest to demonstrate compliance at the new production rate. The Division for Air Quality may waive these requirements on a case-by-case basis if the source demonstrates to the Division's satisfaction that the source is in compliance with all applicable requirements.
- c. Results of performance test(s) required by the permit shall be submitted to the Division by the source or its representative within forty-five days or sooner if required by an applicable standard, after the completion of the fieldwork.

6. Acid Rain Program Requirements

- a. If an applicable requirement of Federal Statute 42 USC 7401 through 7671q (the Clean Air Act) is more stringent than an applicable requirement promulgated pursuant to Federal Statute 42 USC 7651 through 7651o (Title IV of the Act), both provisions shall apply, and both shall be state and federally enforceable.
- b. The permittee shall comply with all applicable requirements and conditions of the Acid Rain Permit and the Phase II permit application (including the Phase II NOx compliance plan and averaging plan, if applicable) incorporated into the Title V permit issued for this source. The source shall also comply with all requirements of any revised or future acid rain permit(s) issued to this source.

7. Emergency Provisions

- a. Pursuant to 401 KAR 52:020, Section 24(1), an emergency shall constitute an affirmative defense to an action brought for the noncompliance with the technology-based emission limitations if the permittee demonstrates through properly signed contemporaneous operating logs or relevant evidence that:
 - (1) An emergency occurred and the permittee can identify the cause of the emergency;
 - (2) The permitted facility was at the time being properly operated;

SECTION G - GENERAL PROVISIONS (CONTINUED)

- (3) During an emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and
 - (4) Pursuant to 401 KAR 52:020, 401 KAR 50:055, and KRS 224.1-400, the permittee notified the Division as promptly as possible and submitted written notice of the emergency to the Division when emission limitations were exceeded due to an emergency. The notice shall include a description of the emergency, steps taken to mitigate emissions, and corrective actions taken.
 - (5) This requirement does not relieve the source of other local, state or federal notification requirements.
- b. Emergency conditions listed in General Condition G.7.a above are in addition to any emergency or upset provision(s) contained in an applicable requirement [401 KAR 52:020, Section 24(3)].
 - c. In an enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof [401 KAR 52:020, Section 24(2)].
8. Ozone Depleting Substances
- a. The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR 82, Subpart F, except as provided for Motor Vehicle Air Conditioners (MVACs) in Subpart B:
 - (1) Persons opening appliances for maintenance, service, repair, or disposal shall comply with the required practices contained in 40 CFR 82.156.
 - (2) Equipment used during the maintenance, service, repair, or disposal of appliances shall comply with the standards for recycling and recovery equipment contained in 40 CFR 82.158.
 - (3) Persons performing maintenance, service, repair, or disposal of appliances shall be certified by an approved technician certification program pursuant to 40 CFR 82.161.
 - (4) Persons disposing of small appliances, MVACs, and MVAC-like appliances (as defined at 40 CFR 82.152) shall comply with the recordkeeping requirements pursuant to 40 CFR 82.166
 - (5) Persons owning commercial or industrial process refrigeration equipment shall comply with the leak repair requirements pursuant to 40 CFR 82.156.
 - (6) Owners/operators of appliances normally containing 50 or more pounds of refrigerant shall keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR 82.166.
 - b. If the permittee performs service on motor (fleet) vehicle air conditioners containing ozone-depleting substances, the source shall comply with all applicable requirements as specified in 40 CFR 82, Subpart B, *Servicing of Motor Vehicle Air Conditioners*.
9. Risk Management Provisions
- a. The permittee shall comply with all applicable requirements of 401 KAR Chapter 68, Chemical Accident Prevention, which incorporates by reference 40 CFR Part 68, Risk

SECTION G - GENERAL PROVISIONS (CONTINUED)

Management Plan provisions. If required, the permittee shall comply with the Risk Management Program and submit a Risk Management Plan to:

RMP Reporting Center

P.O. Box 10162

Fairfax, VA 22038

- b. If requested, submit additional relevant information to the Division or the U.S. EPA.

SECTION H - ALTERNATE OPERATING SCENARIOS

N/A

SECTION I - COMPLIANCE SCHEDULE

- 1. 40 CFR 64, Compliance Assurance Monitoring (CAM)** will become applicable to the following Emission Units for the specified pollutants upon submittal of the first permit application for a significant permit revision affecting emissions from a Large pollutant-specific emission unit (PSEU), as defined in 40 CFR 64, or upon submittal of the first Title V renewal application that includes the following units.
 - a. Cold Rolling Mills #1-3 (Emission Unit #'s 063 through 065) for PM and VOC

Commonwealth of Kentucky
Division for Air Quality
STATEMENT OF BASIS

Title V/Synthetic Minor, Construction/Operating
Permit: V-18-001
Braidy Industries, Inc.
Greenup, KY 41144
March 27, 2018
Zachary Bittner, Reviewer
Sandra Cooke, Writer
SOURCE ID: 21-089-00064
AGENCY INTEREST: 135588
ACTIVITY: APE20180001

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SECTION 1 – SOURCE DESCRIPTION

SIC Code: 3353

Single Source Det. Yes No If Yes, Affiliated Source AI:

Source-wide Limit Yes No If Yes, See Section 4, Table A

28 Source Category Yes No If Yes, Category:

County: Boyd and Greenup Counties

Nonattainment Area N/A PM₁₀ PM_{2.5} CO NO_x SO₂ Ozone Lead

PTE* greater than 100 tpy for any criteria air pollutant Yes No

If yes, for what pollutant(s)?

PM₁₀ PM_{2.5} CO NO_x SO₂ VOC

PTE* greater than 250 tpy for any criteria air pollutant Yes No

If yes, for what pollutant(s)?

PM₁₀ PM_{2.5} CO NO_x SO₂ VOC

PTE* greater than 10 tpy for any single hazardous air pollutant (HAP) Yes No

If yes, list which pollutant(s): HCl

PTE* greater than 25 tpy for combined HAP Yes No

*PTE does not include self-imposed emission limitations.

Description of Facility:

The Braidy facility will produce rolled strip aluminum (coils) from aluminum ingots produced internally or supplied by external sources. The planned markets for the aluminum coils produced currently include automotive body sheet (ABS), mass transportation (e.g., semi-truck trailers), and commercial applications (e.g., building and construction materials). In general, aluminum is melted, chemically adjusted, and then cast into ingots. These ingots, as well as some externally supplied ingots (up to 50 percent of all ingots), are processed through a series of surface preparation, homogenizing, and preheating activities before being rolled in a series of both hot and cold rolling units that convert the ingots first into slabs and sheets, and then into rolled strip (coil) products. The raw coils can be finished to customer specifications through a process of continuous annealing, leveling, texturing, and lubricating. The Braidy plant, located on a 600 acre tract of land, will have an approximately 2 million square-foot production facility capable of producing 550,000 tons of finished, coiled sheet aluminum per year.

The Braidy project is classified under the Standard Industrial Classification (SIC) code 3353, “Aluminum Sheet, Plate, and Foil”, which covers facilities primarily engaged in flat rolling aluminum and aluminum base alloys into basic shapes such as sheet, plate, and foil. Since the facility also includes melting, alloying and casting equipment, it had to be determined whether the

facility would also qualify as a “secondary metal production plant” with regard to Prevention of Significant Deterioration (PSD) regulations. Secondary metal production plants are one of the 28 source categories that are subject to lower emission thresholds for PSD applicability. A facility that is in one of the 28 source categories must also count fugitive emissions toward emission potentials.

This issue of what qualifies as a secondary aluminum production facility was studied by EPA in 1998 when the North American Die Casting Association (NADCA) requested guidance for determining if aluminum die casting facilities are secondary metal production plants under the PSD regulations (Thomas C. Curran Memo, “Treatment of Aluminum Die Casting Operations for the Purposes of New Source Review Applicability, Dec. 4, 1998). The conclusion of the memo was that the U.S. EPA will presume that the recycling steps at a die casting facility do not constitute secondary metals production in a support facility capacity only under narrow circumstances. That is, if the facility recycles only in-house returns with original feedstock, uses simple processes like melting, low percent by weight fluxing, and degassing, and does not use pretreatments like pyrolytic cleaning, sweating and thermal separation, then EPA will presume that the facility does not engage in secondary aluminum recovery.

Although the Braidy facility performs a type of permanent mold casting rather than die casting, it does have similar limited input material and material treatment activities to those that exclude die casting from the secondary metal production definition in 40 CFR 63, Subpart RRR. Feedstock to the Braidy furnaces will be primarily clean charge, i.e. of specified alloy, where quality is specified and guaranteed by contract, purchased from outside of the facility. Another source of input will be runaround scrap, an internally produced scrap from band saws, chippers, etc. The facility will also accept customer returns, which would have the same residual lubricant loading as the internal runaround scrap. This latter material cannot be classified as clean scrap under 40 CFR 63, Subpart RRR, because it returns from outside the facility and has a small amount of lubricant, but is not of a type that will require a large amount of fluxing or cleaning activities in order to be used. The new plant will not accept used beverage cans or other types of post-consumer scrap since the melting and casting area is not designed to accommodate charge materials with paints and coatings. There are no sweat furnaces or cleaning operations planned for the facility for removal of dirt, coatings, and paints from scrap. Even the lubricant loading on customer returns will be managed to avoid operational issues with the melting and casting equipment.

Braidy will institute a scrap inspection program to ensure that the only external scrap processed is from customers supplying return scrap from coils originally produced by Braidy. The inspection will also quantify the condition of the material. The permit limits the oil and coating content on the scrap charge to the levels on the feed/charge material processed during the most recent performance test conducted.

Additionally, secondary aluminum production facilities tend to perform higher fluxing by weight in order to clean materials (Typically 4-6%). The permit limits the addition of reactive flux to one percent (1%) or less per batch on a mass basis (i.e. cumulative addition at the melting furnace, holding furnace, and in-line degasser).

Braidy also plans to produce only coiled sheet and strip aluminum products and will not produce ingots, billets, and bars to be sold for use by other facilities. The production of clean aluminum ingot for sale to outside facilities is a typical process for a secondary aluminum production plant.

All alloyed ingots melted and cast at the Braidy facility are for use in their own hot and cold rolling processes.

Considering the actual functions, inputs and output of the melting and casting process area, the Division has determined that these activities do not place the facility in any of 28 Source Categories. As a result, certain operational limits and requirements have been included in the permit to prevent the supporting activities from becoming a true secondary aluminum production facility under PSD.

It should be noted that although the Division has determined that the Braidy facility is not a secondary metals processing facility for PSD purposes, it does meet the definition of a secondary aluminum production facility under 40 CFR 63, Subpart RRR, *National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production*. This maximum achievable control technology (MACT) standard provides emission and operational limits and requirements for equipment used in the processing of aluminum in order to minimize the emissions of hazardous air pollutants (HAPs). Pursuant to 40 CFR 63.1501, the determination of whether a facility is a secondary aluminum production facility is only for purposes of 40 CFR 63, Subpart RRR and any regulatory requirements which are derived from the applicability of 40 CFR 63, Subpart RRR, and is separate from any determination which may be made under other environmental laws and regulations, including whether the same facility is a “secondary metal production facility” as that term is used in 42 U.S.C. Section 7479(1) and 40 CFR 52.21(b)(1)(i)(A) (“prevention of significant deterioration of air quality”).

Since the Braidy project does not qualify as one of the 28 Source Category facilities, the level of criteria pollutant emissions that trigger PSD applicability is set at 250 tpy site-wide. To preclude PSD, the permit includes federally enforceable emission limitations for PM, PM₁₀, PM_{2.5}, NO_x, and VOC, to ensure emissions stay below totals of 250 tpy for each pollutant. These limits make the source a synthetic minor source with regard to PSD. No limit was set for CO, since it is generated by fuel combustion at the facility and the restrictions placed on NO_x are sufficient to also limit CO. Both of these pollutants come only from combustion of fossil fuels and the emission factor for NO_x is generally twice that, or more, than the emission factor for CO. With the limit on NO_x, and the inclusion of a GCOP plan for the fuel burning units, the Division determined that no specific yearly limit was needed for CO in order to ensure preclusion of PSD.

To further minimize emissions and preclude the applicability of 401 KAR 51:017, Braidy has also requested federally enforceable operational limits and requirements to the permit to further restrict emissions on a unit-by-unit basis. These include limits of tons of raw material processed, cubic feet of fuel combusted, tons of molten aluminum processed, gallons of lubricants used, square feet of product treated, etc. It also includes a requirement to develop a Good Combustion Optimization Practices (GCOP) plan for all fossil fuel-fired equipment, and requires the maintenance of specified capture efficiencies for some hoods and control devices.

Since the criteria pollutants do not trigger PSD, it is also not triggered by the GHG emissions for the Braidy project despite a CO₂e emission rate greater than 231,000 tpy.

The facility is organized into five main functional areas: Melting and Casting, Hot Rolling Plant, Cold Rolling Plant, Strip Processing Plant, and Supporting Ancillary Operations.

a. Melting and Casting Area

The Melting and Casting area is where pure aluminum, and scrap, is melted and treated to customer specification before being cast into rectangular ingots used in the hot and cold rolling process areas of the plant. The melting and casting operations consist of three casting lines that include melting furnaces, holding furnaces, flux injectors, degassers, casting machines, and an associated filter house and other controls. Other process support equipment in the area includes natural gas-fired heaters, preheaters, and dryers, electric induction furnaces and a dross house.

The facility uses primarily clean aluminum, purchased as smaller ingots (pigs) and large ingots (sows), as well as scrap generated in-house from various activities including rejected ingots and processed aluminum, various ends, pieces, trimmings, produced by the rolling mills, strip processing operations, and finishing lines. Braidy also intends to provide closed-loop recycling to their automotive customers by accepting scrap back from them that may contain residual lubricant. As such, this scrap cannot be considered “clean charge,” such as the purchased aluminum, and requires that the melting furnaces be classified as Group 1 Furnaces under 40 CFR 63, Subpart RRR. This has implications with regard to which limits and portions of the regulation apply to these furnaces.

The incoming clean aluminum and customer return scrap bundles, transported by truck, may be transported directly inside the facility buildings and stored in the melting and casting area. It may also be temporarily stored in organized stacks or bundles outside in a laydown yard near the appropriate area of the building. Movement from delivery truck to storage will be by fork truck. The materials are not expected to generate any dust as it will not contain dirt or contaminants as most post-consumer aluminum materials would.

Prior to feeding the arriving or stored hard aluminum into the melting furnaces, three natural gas-fired sow dryers (EUs 132-134) are used to pre-heat the sows. The prime aluminum and scrap are then loaded in the top of each melting furnace through the use of overhead charge buckets. Individually, each of the three round-top, natural gas-fired, melting furnaces (EU 001-003) can receive up to 132 tons of aluminum charge per batch with a short-term throughput rate of 21.7 tons of aluminum per hour. Once filled with metal, the furnace cover is replaced and the melting process begins.

Each furnace has four, single burner regenerators and one cold air burner. These regenerators alternate in pairs to either recover or store heat from the furnace exhaust gases. While one pair is firing, the other pair will exhaust the gases. As they exit, these gases pass over a refractory material regenerative bed which stores heat from the passing gas stream. When the bed is fully heated, the firing pair of regenerator burners shuts off and begins exhausting the furnace gases while the other pair begins firing, passing fuel laden air over the heated refractory bed and recovering the heat to assist in the combustion. The pairs alternate, with only one pair actively firing at a time, while the single cold air burner is used to keep already molten metal at the proper temperature while the switch-over between pairs occurs.

Melting is also assisted through the use, when available, of already liquid aluminum from the scalper chip recycle loop (See Area b. Hot Rolling Plant Area, below). The scrap from the scalpers is pre-melted in one of four electric Induction Furnaces (EUs 019-022). Each furnace can process 7.5 tons of chips per batch and melted material is transferred using crucibles and

may be gravity fed to the furnace through a spout. If the melted scalper chips must be held for a time before addition to a melting furnace, the crucibles are held in natural gas-fired preheater stations.

As the charge is melting, electromagnetic stirrers in each furnace agitate the liquid metal to ensure the batch is uniform. Furnace tending machines skim the surface of the fully liquid metal to remove dross, a scum consisting of foreign matter and mineral wastes that forms on the surface molten metal. The dross is removed, deposited in dross pans and transported to the Dross House (EU 040) for cooling and storage. Small amounts of aluminum are entrained in the dross which is eventually shipped off site and sold for processing at metal recovery facilities. The dross generated from the melting furnaces is estimated to be 2 to 3 percent of the charge weight.

Once dross is removed, various alloying agents, including manganese, magnesium, copper, zinc, chromium, iron, tin and silicon, may be added to the liquid charge depending on customer specifications for the product. Emissions generated by the melting furnaces are routed to a Lime-Injected Filter House Control System, which handles the majority of emissions from the melting and casting area.

The casting lines use an interconnecting system of heated troughs to keep the molten metal liquid as it transfers down the line. There are six troughs, with three connecting melting furnaces to corresponding holding furnaces and three connecting the holding furnaces to the corresponding casting machine. The troughs are heated by hot air blower or by one of the five portable natural gas-fired trough heaters (EUs 026-030 - Insignificant Activities).

Once alloying and chemical adjustment is complete within each melting furnace, the liquid metal flows through a trough to one of the three holding furnaces (EU 007–009). Each furnace can hold a batch of molten metal of up to 138 tons. In these rectangular furnaces, material is sampled and alloy composition corrections can be accomplished. Each furnace has a rotary flux/gas injector which agitates the molten material while introducing refining agents in the form of solid reactive chloride salt fluxes or chlorine gas with carrier gases. These agents combine with impurities to form dross and rise to the surface of the molten material. For the holding furnaces, dross is removed through a skimming door, gathered in dross pans and taken to the dross house for processing. For this step in the process, dross generated is expected to be between 0.8 and 1.5 percent of throughput weight.

After this step, the material is rested to allow for inclusions to settle out at the bottom of the holding furnace. Each furnace can then be tilted to pour the molten metal through a heated transfer trough to an associated casting machine. In order to provide even closer control of the structure of the cast alloyed aluminum, the molten metal may be passed through a dedicated grain refiner during transfer. Nucleating agents are added by the refiner which help control how crystals are formed in the structure of the final metal. This affects the strength and quality of the cast product.

Additionally, each casting row has an in-line degasser (EUs 012-014), which injects small amounts of chlorine gas to the molten material to remove dissolved hydrogen. Because hydrogen can re-entrain, the removal of the gas must happen as close to actual casting pour as possible. This equipment can also remove undesirable alkaline elements like sodium, calcium

and lithium. The degassers generally do not require pre-heating, but there is the capability to use electric heat or the portable trough heaters if required. Also, dross formation is not expected at this point in casting due to the sealed hood design of the equipment and the improbability of exposing the molten metal to ambient air for formation of oxides (dross).

In the step before actually casting, molten metal will pass through a ceramic foam filter which physically removes any remaining impurities (solid and liquid inclusions) in the molten material. These filters are warmed by the natural gas-fired filter box preheaters (EUs 034-036 - Insignificant Activities) to help maintain the temperature of the material just prior to the associated casting machine.

The three casting machines, which are not emitting units and do not have assigned emission unit numbers in permit V-18-001, will be a vertical direct chill (VDC) type. In this form of casting, only the outer layer of the molten material solidifies by contact with the water-cooled mold wall. As the ingot exits at the bottom of the mold, water is directly sprayed on the material to complete solidification. This allows for the ingot to contract on all sides, reducing stress within the material. Since this equipment uses only vegetable oil-based lubricant, no emissions of criteria pollutants are expected.

b. Hot Rolling Plant

Cast ingots are taken to the hot rolling plant area where they are subjected to a series of surface preparation and quality improvement steps, as needed, before being fed into mills to begin the process of flattening and shaping the ingots into coiled sheets of aluminum.

First, each ingot is processed through two ingot band saws (EUs 049-050) which cut the ingot head and tail and are capable of cutting samples and sections to ensure surface quality. The saws can individually process four ingots an hour and each have a 40 ton capacity. Aluminum chips are generated through this process and are gathered for eventual recycle back to the melting furnaces in the melting and casting area. As the saws remove aluminum from the ingots, the chips are collected by a cyclone and then sorted by alloy type. Chips of the same alloy are moved to a unit that presses the chips into briquettes that are stored by alloy type in the saw area. When the melting and casting lines are producing a compatible alloy, briquettes of that type are recycled into the melting system.

Next the ingots are transferred to the ingot scalpers (EUs 051-052) which cut the surfaces to specific dimensions, and remove casting skin and impurities from the surfaces. Like the band saws, the scalpers have a 40 ton capacity and can process a little more than four ingots an hour, each. The aluminum chips generated at this stage are captured by a collection hood and routed to a crusher. The crushed chips are then pneumatically conveyed through dedicated cyclones (Two pneumatic systems, EUs 053-054) for transfer to storage bins. The chips are eventually fed to the induction furnaces (EUs 019-022) for recycle into the melting and casting area.

Meanwhile, the processed ingots are placed in one of the six natural gas-fired homogenizing batch furnaces (EUs 041-046). Heating in these furnaces overcomes any stratification caused during casting by redistributing the alloying elements to make ingot composition uniform. It also treats any undissolved precipitates in the ingot for improved formability. Each furnace has twelve low NO_x open flame burners with a total rated capacity of 23.8 MMBtu/hr arranged in

two temperature control zones. There are two forced draft exhaust stacks, each serving a set of three of the furnaces. The preheated ingots are then fed to the pusher furnaces.

Untreated ingots from the ingot scalper or those treated in the homogenizing furnaces are fed to one of the five natural gas-fired pusher furnaces (EUs 056-060) for continued processing. The pusher furnaces raise the temperature in the ingots to soften them in order to minimize the force required to mechanically flatten the material and to raise the temperature of alloys above the recrystallization temperature to prevent hardening of the material as it passes through the rolling operations. Each of the pusher furnaces has 40 natural gas-fired open flame burners for a total rated capacity of 79.4 MMBtu/hr. Each furnace has five temperature control zones with eight low NO_x burners in each. These furnaces also have recuperators that use exhaust gas to preheat combustion air for better fuel use and lower NO_x emissions.

Each preheated and softened ingot can then be sent into the 1+1 hot rolling mill, which includes a hot roughing mill (EU 061) and a hot finishing mill (EU 062) along with roller table, vertical edger, shears and coilers.

The roller table feeds an ingot into the roughing mill which has reversing capability. With the first pass, the ingot become a slab and then passes back and forth through the roughing mill and edger. The slab thickness reduces with each pass and the vertical edger minimizes heavy edge cracks and possible width increases that can occur as material is spread to the side during passes.

Once the strip reaches the appropriate thickness, it moved by roller table to the reversing finishing mill for final reduction and conversion to a hot rolled coil. The strip passes through shears which cut the ends for a clean leading edge for rolling and coiling operations. Once the strip is rolled into a coil, it may be reverse back and forth through the finishing mill for a final pass before collecting on the exit coiler. The coil of aluminum sheet is then transported to the cold rolling plant for further processing.

Processing through these mills produces significant heat, so a water-based mineral oil is used as a coolant and lubricant during operation. The coolants are necessary to help maintain a precise temperature control as the aluminum passes back and forth through a mill. This is necessary to prevent thermal warping of the mill rolls. Additionally, the aluminum alloys must be maintained in certain temperatures ranges to achieve desired quality. Therefore the coolant system uses both a plate cooler to reduce coolant temperature and electric heaters to raise it as necessary. A coolant collection, cleaning/filtering and recycling system minimizes the amount of coolant used.

c. Cold Rolling Plant

Coils of aluminum are transported from the hot rolling plant to the cold rolling plant for a further reduction in thickness (gauge). The cold rolling mills will process the aluminum to a precise thickness and flatness and ensure surface quality before the final steps in the strip processing plant.

The cold rolling area has three identical 6-high cold rolling mills (EUs 063-064) and consists of three mill stands and various supporting equipment.

In a 6-high configuration, the mill consists of two sets of three cylinders or rolls of varying diameter and function; a work roll, intermediate roll and a backup roll. Each mill stand will have one set of rolls above the aluminum sheet being worked and one below. The two motor driven work rolls in each stand stretch and flatten a sheet by applying pressure from above and below. The ultimate thickness of the sheet is controlled by changing the gap between the work rolls through the use of a hydraulic system that is adjusted for each pass of the sheet between the rolls. The intermediate and backup rolls are not motorized and are of a larger diameter than the work rolls. The backup rolls do not contact the surface of the aluminum sheet but support the work rolls to prevent them from bending or warping under the load of the aluminum sheet as it passes. The intermediate rolls also assist in flatness control and in controlling the work rolls shifting along their rolling axis.

A mineral oil-based spray is used for temperature control and lubrication during rolling. As with the hot rolling mills, the cold rolling mills will employ a coolant recycling system that collects, filters and reintroduces the salvaged coolant to the mills.

However, even with the coolant recycle system, some of the coolant becomes airborne as mist and vapor due to the heat and agitation caused by rolling. This vapor will be captured through a hooding system and sent to a heavy oil scrubbing system specifically for reducing PM and VOC emissions (See discussion of 401 KAR 50:012, *General Application*, Section 4-Source Information and Requirements, Table B – Summary of Applicable Regulations.)

Before rolling, and in-between rolling passes, the coils of aluminum are taken to one of the 20 natural gas-fired annealing furnaces (EUs 066-085) to heat them to specific temperatures. This “locks in” desired properties in the metals, such as ductility, increases the workability, and prepares the metal for the shaping, stamping, and forming it will undergo when it reaches the customer. Each of the Annealing Furnaces has 16 radiant tube burners with a total rated capacity of 9.6 MMBtu/hr per furnace. They will also have recuperator to improve fuel efficiency and each group of five furnaces will share a common exhaust stack.

A final step for some of the coils is the application of a customer specified surface pattern by a work roll treated in the cold rolling mill roll texturing machine (EU 122 - Insignificant Activity). Automotive manufacturers may need a specific surface finish on some coil to ensure that their final product has the proper appearance after painting. For this, a work roll surface with the desired pattern is achieved through electric discharged texturing (EDT) in a roll texturing machine. Once the roughness is applied to a work roll, it transfers to the aluminum strip as it passes through the work roll. Lubrication is used during the process and the fumes are collected and sent to a filtration system.

d. Strip Processing Plant

Coils destined for the automotive industry may go through a final set of heat and chemical treatments before being sold for use. This occurs in the strip processing plant where the coils from the cold rolling mills are sent through one of three Continuous Anneal and Solution Heat-treatment (CASH) lines. The CASH lines consist of a series of equipment that provide different types of treatment for the aluminum. Each line has an alkaline cleaning operation (EUs 092, 102, and 112), a natural gas-fired heat treat furnace (EUs 094, 104, and 114) for the heat

treatment section of the line, a second heat treat furnace (EUs 095, 105, and 115) for the spiking section of the line, a tension leveler (EUs 096, 106 and 116), a pickling operation (EUs 097, 107, and 117), a post-treatment operation (EUs 098, 108, and 118), a third reheater furnace (EUs 100, 110, and 120), and electrostatic lubing equipment (EUs 101, 111, and 121).

In the entry section of a CASH line, the coils are converted to continuous strips and prepped for heating and chemical treatment. There is a series of support equipment, including uncoiling groups, reels, flatteners, shears, stitchers, notchers, trimmers, and scrap choppers, that process a coil into a strip and prepare scrap for recycle. There are also steering, bridle, and deflector rolls to control direction of and tension on the moving strip. The resulting continuous strip is passed through an alkaline cleaning process and then onto the processing section.

In the process section of a CASH line, the coil is subjected to the heat treat furnace, tension leveler, and to pickling and post treatment chemicals. Near the end of the process, a spiking section raises the temperature of the strip to a particular level followed by an air cooling section to ensure the strip is at the proper exit temperature. By manipulating the temperature in the metal, the properties in the aluminum can be adjusted to customer specifications.

In the exit section of the CASH line, strips are subjected to any final preparation steps, such as reheating in the reheater furnace or receiving a lubricating coating in the electrostatic lubing area, as requested by specific customers, before being re-coiled as a finished product. Additional equipment in this area includes coil cars, coil strapping machines, and long sample conveyors that direct and perform final shaping of the strip.

e. Ancillary Operations

The facility also includes equipment that may support more than one functional area of the plant. This includes a 16.8 MMBtu/hr auxiliary boiler #1 (EU 123) that provides process steam and hot water to various areas in the plant, including some non-contact heat exchange with process fluids. Plant heat exchangers, such as the casting machines, hot mill emulsion cooler, etc., are supplied cooling water by four mechanical draft wet cooling towers (EUs 124-127 - Insignificant Activities). The cooling towers will have maximum recirculating water flow rates ranging from 10,000 gal/min to 15,500 gal/min and will use no chromium – based treatment chemicals for the water. 40 CFR 63, Subpart Q, *National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers* will therefore not apply.

The facility has three diesel-powered 1,711 HP emergency generators (EU 128-130) to provide backup power to critical equipment at the facility. It also has a 350 HP fire pump engine (EU 131) for emergency fire suppression on the site.

Also listed under the ancillary operations are the haul roads (EU 139). The paved haul roads serve to allow the transport of raw materials, product and equipment around the facility site.

The Division has determined that at least until construction of the entire project is complete, any additional equipment added to the site, not originally in the application, will be considered part of the original project. As a result, any additional equipment is subject to the permitted site-wide emissions limitations and must be included in calculations to preclude applicability of 401 KAR 51:017, *Prevention of significant deterioration of air quality*.

Note that although this description divides plant operations are into the five different processing areas based on the functions in that area, i.e. Melting and Casting, Hot Rolling, Cold Rolling, Strip Processing and Ancillary Operations, within the initial permit V-18-001, the equipment is divided into emissions groups. These emission groups (A–H) are based on the applicable regulations for each group of equipment. This includes 10 separate categories:

Emission Group A: Group 1 Furnaces with Control Devices;

Emission Group B: In-line Fluxers;

Emission Group C: Group 2 Furnaces;

Emission Group D: Process Operations (i.e. Dross House, Saws, Scalpers, Cold Mill, etc.);

Emission Group E: Direct Heat Exchangers w/Captured Emissions;

Emission Group F: Annealing Furnaces;

Emission Group G: Strip Processing Plant Process Operations; and

Emission Group H: Diesel-fired Emergency Generating Engines.

There are also three emission units, Emission Unit #123: Auxiliary Boiler #1; Emission Unit #131: Diesel-fired Fire Pump Engine #1; and Emission Unit #139: Haul Roads, that are not in groups but have individual sections within **Section B – Emission Units, Emission Points, Applicable Regulations, And Operating Conditions**, in initial permit V-18-001.

SECTION 2 – CURRENT APPLICATION

Permit Number: V-18-001

Activities: APE20180001

Received: February 22, 2018

Application Complete Date(s): March 23, 2018

Permit Action: Initial Renewal Significant Rev Minor Rev Administrative

Construction/Modification Requested? Yes No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action Yes No

Description of Action:

The Division received an initial Title V application from Braidy Industries (Braidy) on February 22, 2018 for construction of a new aluminum rolling mill, including melting, casting, hot and cold rolling and strip processing, to be located in both Boyd and Greenup Counties, Kentucky. The facility will produce rolled aluminum sheet (coils) to custom specifications for the automotive, mass transit, and construction/commercial products industries. It includes a melt and casting area to produce ingots, supplemented by purchased ones, which supports the rolling mill processing area. The plant will be constructed in the EastPark industrial park site off Kentucky state highway 67 (K-67) between the towns of Grayson and Coalton, Kentucky, and is approximately 10 miles southwest of Ashland, Kentucky.

The Division held a meeting with representatives of Braidy on March 1, 2018 to seek additional information and clarifications to assist in review of the application. The Division also formally received additional information from Braidy representatives on March 13, 2018, March 21, 2018 and March 23, 2018.

An air dispersion modeling report and associated files were also submitted as a part of the application by Trinity Consultants on behalf of Braidy Industries for HF, Manganese, Sulfuric Acid, and Vanadium and compounds. The Division's Air Dispersion Modeling Section completed their review of the materials on March 22, 2018 and determined that the submittal met the expectations of the Guideline on Air Quality Models (40 CFR Part 51 Appendix W). It was also determined that the project, as projected, will comply with both 401 KAR 53:010, *Ambient air quality standards*, and 401 KAR 63:020, *Potentially hazardous matter or toxic substances*.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

Emission Group A: Group 1 Furnaces with Control Devices (EU #001-003 & 007-009)				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	<ul style="list-style-type: none"> • $P \leq 0.5$ ton/hr = 2.34 lb/hr • $0.5 < P \leq 30$ ton/hr = $3.59 \times P^{0.62}$ lb/hr 	401 KAR 59:010, Section 3(2)	Melting Furnace: 0.104 lb/ton (Captured/Pre-Control) (Vendor Supplied Emission Factor) Holding Furnace: 0.392 lb/ton (Captured/Pre-Control) (Vendor Supplied Emission Factor)	Performance Testing, Emission Calculations
PM	20% opacity	401 KAR 59:010, Section 3(1)(a)	----	Weekly qualitative visual observation. U.S. EPA Method 9 if visible emissions are present
PM	10% opacity (If COM is chosen as the monitoring option)	40 CFR 63.1505(i)(5)	----	Operation of COM system in accordance with 40 CFR 63, Subpart RRR
PM	0.40 lb/ton (0.20 kg/Mg) of feed/charge	40 CFR 63.1505(i)(1)	Melting Furnace: 0.104 lb/ton (Captured/Pre-Control) (Vendor Supplied Emission Factor) Holding Furnace: 0.392 lb/ton (Captured/Pre-Control) (Vendor Supplied Emission Factor)	Conduct performance tests as described in 40 CFR 63.1512(j)(1) through (3) to establish emission rates. Use results in 40 CFR 63.1513, Equation 7
NO _x	24.38 tons/yr Combined Limit for each matched pair of Melting and Holding Furnaces, e.g. Melting Furnace #1 and Holding Furnace #1, on a 12-month rolling basis	To Preclude 401 KAR 51:017	Melting Furnace: 120.339 lb/MMscf (Vendor Supplied Emission Factor) Holding Furnace: 68.765 lb/MMscf (Vendor Supplied Emission Factor)	Performance Testing, Emission Calculations

Emission Group A: Group 1 Furnaces with Control Devices (EU #001-003 & 007-009)				
D/F TEQ	2.1x10 ⁻⁴ gr D/F TEQ/ton (15 µg D/F TEQ/Mg) of feed/charge	40 CFR 63.1505(i)(3)	Melting Furnace: 3.0x10 ⁻⁸ lb/ton (Captured/Pre-Control) (40 CFR 63, Subpart RRR Allowable)	Conduct tests as described in 40 CFR 63.1512(j)(1) through (3) to establish emission rates. Use results in 40 CFR 63.1513 Equation 7A
HCl	0.40 lb/ton (0.20 kg/Mg) of feed/charge, or 10% of the uncontrolled HCl emissions, by weight	40 CFR 63.1505(i)(4)	Melting Furnace: 0.345 lb/ton (Captured/Pre-Control) (Vendor Supplied Emission Factor) Holding Furnace: 0.392 lb/ton (Captured/Pre-Control) (Vendor Supplied Emission Factor)	Conduct tests as described in 40 CFR 63.1512(j)(1) through (3) to establish emission rates. Use results in 40 CFR 63.1513 Equation 7 or 8

Initial Construction Date: May 2018

Process Description:

Process Area 01: Melting & Casting

Emission Units # 001 through 003: Melting Furnaces #1-3

Maximum Capacity: 21.7 tons/hr (approximately 132 tons/batch), each

Fuel: Natural Gas

Control Device: Lime-Injected Filter Houses #1-3

These furnaces will produce various alloys of molten aluminum from solid charge materials. Each of the three (3) melting furnaces will be equipped with four (4) regenerators, with each regenerator having a single burner. Each of the regenerators with single burners will be rated 40.1 MMBtu/hr, as well as a single cold air burner rated at approximately 6.8 MMBtu/hr. While melting charge material, one pair of regenerators with its 40.1 MMBtu/hr burners will be in operation while the other pair of 40.1 MMBtu/hr burners will be gaining heat to initiate combustion when the regenerative burner cycle changes. The 6.8 MMBtu/hr cold air burner will be used to hold molten metal at the desired temperature when the main regenerative burners are not firing.

Charge materials for the melting furnaces will consist primarily of clean materials (approximately 65 percent of the total charge mix). These clean charge materials include "prime" aluminum (i.e., unalloyed, pure aluminum) in the form of pigs, sows, and in-house scrap from the following sources: rejected ingots, sawing butt ends, cropping head and tail ends, miscellaneous trimmings, as well as scrap generated by the rolling mills, strip processing operations, and finishing lines. Braidy also desires the flexibility to accept reject materials from its customers, which cannot be classified as clean charge since this material is not known to be "entirely free of paints, coatings, and lubricants." However, these customer returns would have the same residual lubricant loading as the runaround scrap generated by Braidy, which is considered clean charge. The melting and casting operation is not designed to accommodate charge materials that contain paints or coatings, which would cause operational issues, and any lubricant loading that may exist on the

Emission Group A: Group 1 Furnaces with Control Devices (EU #001-003 & 007-009)

charge materials must be carefully managed to prevent operational issues. Despite the relative cleanliness of Braidy's planned charge materials, the units must be classified as *Group 1 Furnaces* under 40 CFR 63, Subpart RRR due to accepting customer returns with a minimal amount of residual lubricant loading, which prevents this material from being classified as "clean charge."

After the charge material is melted, the dross skimming process will begin. Dross produced by the melting furnaces will be removed by furnace tending machines. The facility design is based on a conservative dross generation rate for the melting furnaces that corresponds to approximately 2 to 3 percent of the charge material weight.

After removing dross from the surface of the molten metal, the alloying process will begin. Alloying agents/hardeners will be fed to the melting furnaces. Various alloying agents will be used, including but not limited to manganese, magnesium, copper, zinc, iron, chromium, tin, and silicon.

Emission Units # 007 through 009: Holding Furnaces #1-3

Maximum Capacity: 21.7 tons/hr (approximately 138 tons/batch), each

Fuel: Natural Gas

Control Device: Lime-Injected Filter Houses #1-3

A natural gas-fired tilting Holding Furnace of rectangular shape will serve as the second step in each casting line. Once the melting cycle is complete for a given casting line, molten metal will flow from the Melting Furnace through an interconnecting transfer system (i.e., trough) to the associated Holding Furnace. To maintain the molten metal's temperature during this transfer process, portable natural gas-fired trough heaters (EUs 026-030 - Insignificant Activities) will be used. Heat to each holding furnace will be provided by two natural gas-fired cold air burners, each rated at 10.25 MMBtu/hr.

After a holding furnace is filled up with molten metal, alloy composition correction will be done. Although the alloying process will primarily occur in the melting furnaces, sampling will be conducted and small corrections to the alloy composition will be made in the holding furnaces. After composition adjustment has been done, the metal treatment process will begin. Each holding furnace will be equipped with a dedicated rotary flux/gas injector (RFGI). The dedicated RFGI will serve to inject refining agents and to agitate the molten metal in the holding furnace. Refining agents (e.g., solid reactive chloride salt flux, chlorine gas with nitrogen/argon carrier gas) will be added to help purify the metal product by removing alkali metals (e.g., sodium, calcium, and lithium), nonmetallic inclusions (e.g., oxides, borides, and carbides), and dissolved hydrogen gas. Specifically, the refining agents will combine with impurities present in the molten metal and rise to the surface of the metal as dross. Dross generated during the holding furnace operating cycle will be removed through a skimming door, placed in dross pans, and transferred to the dross house for further processing. The facility design is based on a conservative dross generation rate for the holding furnaces that corresponds to 0.8 to 1.5 percent of the input material weight.

Once alloying, fluxing, and drossing activities are complete, the molten metal will be allowed to settle for 30-45 minutes, to allow the inclusions to settle to the bottom. After settling has been completed, the holding furnace will be tilted to allow molten metal to flow through an interconnecting transfer system (i.e., trough) to the associated casting machine.

Emission Group A: Group 1 Furnaces with Control Devices (EU #001-003 & 007-009)

Based on the holding furnaces' ability to support reactive fluxing, the three (3) Holding Furnaces will be classified as *Group 1 Furnaces* under 40 CFR 63, Subpart RRR. The exhaust from the furnace hearth and door hood will be routed through common ducting to the associated filter house for emissions control.

Applicable Regulations:

401 KAR 59:010, *New process operations*, applicable to affected facilities or sources, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR Chapter 59, commenced on or after July 2, 1975.

401 KAR 63:002, Section 2(4)(ccc), *40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR), National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production*. Subpart RRR is a Maximum Achievable Control Technology standard (MACT) regulation that applies to affected sources located at a secondary aluminum production facility that is a major source of hazardous air pollutants. The Melting Furnaces and Holding Furnaces are considered *group 1 furnaces with control* under this regulation. These furnaces do not use fluorine in any flux, and accordingly, requirements pertaining to HF have not been included in the permit.

Precluded Regulation:

401 KAR 51:017, *Prevention of significant deterioration of air quality*. This KAR provides for the prevention of significant deterioration (PSD) of ambient air quality. This regulation has been precluded by the source taking voluntary limits on emissions of PM, PM₁₀, PM_{2.5}, NO_x, VOC, to stay below total emissions of 250 tpy for each pollutant and become a synthetic minor source with regard to PSD.

Comments: Braidy has taken a number of voluntary operational limits for this equipment, including natural gas usage, and aluminum charge processed, in order to ensure emissions remain below the major source thresholds for 401 KAR 51:017. The permit is written such that these limits may become more stringent pending the results of performance testing to verify emission factors used in calculating emissions. Should actual emission factors be higher than those in the application, the operational limits could be changed to ensure emissions of each criteria pollutant will be kept below 250 tons per year per pollutant, including emissions from insignificant activities (See Permit V-18-001, Section C – Insignificant Activities). In addition, the source is restricted in the oil and coating content in the recycled scrap accepted for melting and the permit requires a number of operating practices and maintenance activities to optimize combustion and minimize emissions. Braidy has also volunteered to include a scrap inspection program to ensure that the facility is not considered a secondary metals processing facility for PSD.

Emission Group B: In-Line Fluxers (EU #013-015)				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	<ul style="list-style-type: none"> • $P \leq 0.5$ ton/hr = 2.34 lb/hr • $0.5 < P \leq 30$ ton/hr = $3.59 \times P^{0.62}$ lb/hr 	401 KAR 59:010, Section 3(2)	0.01 lb/ton (Captured/Pre-Control) (Vendor Supplied Emission Factor)	Performance Testing Emission Calculations
PM	20% opacity	401 KAR 59:010, Section 3(1)(a)	----	Weekly qualitative visual observation. U.S. EPA Method 9 if visible emissions are present
PM	10% opacity (If COM is chosen as the monitoring option)	40 CFR 63.1505(i)(5)	----	Operation of COM system in accordance with 40 CFR 63, Subpart RRR
PM	0.01 lb/ton (0.005 kg/Mg) of feed/charge	40 CFR 63.1505(j)(2)	0.01 lb/ton (Captured/Pre-Control) (Vendor Supplied Emission Factor)	Conduct performance tests as described in 40 CFR 63.1512(j)(1) through (3) to establish emission rates. Use results in 40 CFR 63.1513 Equation 7
HCl	0.04 lb/ton (0.02 kg/Mg) of feed/charge	40 CFR 63.1505(j)(1)	0.129 lb/ton (Captured/Pre-Control) (Engineering Estimate)	Conduct performance tests as described in 40 CFR 63.1512(j)(1) through (3) to establish emission rates. Use results in 40 CFR 63.1513 Equation 7

Initial Construction Date: May 2018

Process Description:

Process Area 01: Melting & Casting

Emission Units # 013 through 015: In-Line Degassers #1-3

Maximum Capacity: 21.7 tons/hr, each

Control Device: Lime-Injected Filter Houses #1-3

Each casting line will be equipped with a dedicated in-line aluminum compact degasser. The associated in-line degasser will be used for treatment of metal, to remove dissolved hydrogen, while it is flowing from the holding furnace to the casting machine. The in-line degasser will inject a small quantity of chlorine gas with argon serving as an inert carrier gas. In addition, if additional treatment is required for alkaline elements (e.g., sodium, calcium, and lithium) removal, the same process will happen in this in-line degasser, as a final metal conditioning step prior to casting. The three in-line degassers will be classified as *in-line fluxers* under 40 CFR 63, Subpart RRR.

The degasser trough will generally not require preheating in normal operating conditions. In exceptional cases of cold start up, some preheating will be required, and this will be accomplished with electrical heat

Emission Group B: In-Line Fluxers (EU #013-015)

or using the portable trough heaters. If dross is generated during the degasser operating cycle, it will be removed at the end of the cast sequence and placed into dross pans, which will then be transferred to the dross house for further processing. However, based on the sealed degasser hood design planned for these systems, dross generation is expected to be negligible, as the sealed design prevents ingress of ambient air/oxygen and negligible opportunity to form oxides (i.e., dross).

Applicable Regulations:

401 KAR 59:010, *New process operations*, applicable to affected facilities or sources, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR Chapter 59, commenced on or after July 2, 1975.

401 KAR 63:002, Section 2(4)(ccc), *40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR), National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production*. Subpart RRR is a Maximum Achievable Control Technology standard (MACT) regulation that applies to affected sources located at a secondary aluminum production facility that is a major source of hazardous air pollutants. The In-Line Degassers are considered *in-line fluxers* using reactive flux under this regulation. These in-line fluxers do not use fluorine in any flux, and accordingly, requirements pertaining to HF have not been included in the permit.

Precluded Regulation:

401 KAR 51:017, *Prevention of significant deterioration of air quality*. This KAR provides for the prevention of significant deterioration (PSD) of ambient air quality. This regulation has been precluded by the source taking voluntary limits on emissions of PM, PM₁₀, PM_{2.5}, NO_x, VOC, to stay below total emissions of 250 tpy for each pollutant and become a synthetic minor source with regard to PSD.

Comments: Braidy has taken a voluntary operational limit on molten aluminum processed for this equipment in order to ensure emissions remain below the major source thresholds for 401 KAR 51:017. The permit is written such that these limits may become more stringent pending the results of performance testing to verify emission factors used in calculating emissions. Should actual emission factors be higher than those in the application, the operational limits could be changed to ensure emissions of each criteria pollutant will be kept below 250 tons per year per pollutant, including emissions from insignificant activities (See Permit V-18-001, Section C – Insignificant Activities).

Emission Group C: Group 2 Furnaces (EU #019-022)

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	<ul style="list-style-type: none"> • $P \leq 0.5$ ton/hr = 2.34 lb/hr • $0.5 < P \leq 30$ ton/hr = $3.59 \times P^{0.62}$ lb/hr 	401 KAR 59:010, Section 3(2)	0.055 lb/ton (Vendor Supplied Emission Factor)	Based on application information, these units are assumed to be in compliance with the mass emission standard

Emission Group C: Group 2 Furnaces (EU #019-022)				
PM	20% opacity	401 KAR 59:010, Section 3(1)(a)	----	Weekly qualitative visual observation. U.S. EPA Method 9 if visible emissions are present
<p>Initial Construction Date: May 2018</p> <p>Process Description: <i>Process Area 01: Melting & Casting</i></p> <p><u>Emission Units # 019 through 022: Induction Furnaces #1-4</u> Maximum Capacity: 4.0 tons/hr, each Control Device: None</p> <p>Chips generated by the ingot scalpers will be recycled back to the melting furnaces. Rather than feeding solid chips directly to the melting furnaces, four electric induction furnaces will be used to convert the chips to a molten state.</p> <p>Applicable Regulations:</p> <p>401 KAR 59:010, <i>New process operations</i>, applicable to affected facilities or sources, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR Chapter 59, commenced on or after July 2, 1975.</p> <p>401 KAR 63:002, Section 2(4)(ccc), <i>40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR), National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production</i>. Subpart RRR is a Maximum Achievable Control Technology standard (MACT) regulation that applies to affected sources located at a secondary aluminum production facility that is a major source of hazardous air pollutants. The induction furnaces are considered <i>group 2 furnaces</i> under this regulation.</p> <p>Precluded Regulation:</p> <p>401 KAR 51:017, <i>Prevention of significant deterioration of air quality</i>. This KAR provides for the prevention of significant deterioration (PSD) of ambient air quality. This regulation has been precluded by the source taking voluntary limits on emissions of PM, PM₁₀, PM_{2.5}, NO_x, VOC, to stay below total emissions of 250 tpy for each pollutant and become a synthetic minor source with regard to PSD.</p> <p>Comments: Emission calculations conservatively assumed maximum continuous operation of the furnaces and show that each furnace, without control, will emit less than 1 tpy of PM. Additionally, the furnaces process only clean charge, have no reactive fluxing, and heat using electricity. Permit V-18-001 does not currently include testing for these Group 2 furnaces, however the Division has the authority to require performance testing if deemed necessary in accordance with 401 KAR 59:005, Section 2(2) and 401 KAR 50:045, Section 1.</p>				

Emission Group D: Process Operations (EU #040, 049-054, & 061-065)				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	<ul style="list-style-type: none"> • $P \leq 0.5$ ton/hr = 2.34 lb/hr • $0.5 < P \leq 30$ ton/hr = $3.59 \times P^{0.62}$ lb/hr • $P > 30$ ton/hr = $17.31 \times P^{0.16}$ 	401 KAR 59:010, Section 3(2)	Refer to process descriptions, below, for each type of equipment for PM emission factors and bases	Refer to the permit for compliance methods for each type of equipment
PM	20% opacity	401 KAR 59:010, Section 3(1)(a)	----	Weekly qualitative visual observation from each stack. U.S. EPA Method 9 if visible emissions are present
VOC	10.76 tpy on a 12-month rolling basis for the Hot Roughing Mill (EU 061)	To Preclude 401 KAR 51:017	0.024 lb/tn (Captured/ No Control) (Engineering Estimate)	Performance Testing, Emission Calculations
VOC	27.14 tpy on a 12-month rolling basis for the Hot Finishing Mill (EU 062)	To Preclude 401 KAR 51:017	0.0623 lb/tn (Captured/No Control) (Engineering Estimate)	Performance Testing, Emission Calculations
VOC	96.56 tpy, combined, on a 12-month rolling basis for Cold Rolling Mills #1-2 (EUs 063 and 064)	To Preclude 401 KAR 51:017	145.278 lb/hr of operation (Captured/No Control) (Vendor Supplied Emission Factor)	Performance Testing, Emission Calculations
VOC	48.28 tpy on a 12-month rolling basis for Cold Rolling Mill #3 (EU 065)	To Preclude 401 KAR 51:017	72.327 lb/hr of operation (Captured/No Control) (Vendor Supplied Emission Factor)	Performance Testing, Emission Calculations

Initial Construction Date: May 2018

Process Description:

Process Area 01: Melting & Casting

Emission Unit # 040: Dross House

Maximum Capacity: 2.95 tons/hr

Control Device: Baghouse

Dross produced during aluminum melting activities in each of the three melting furnaces, three holding

Emission Group D: Process Operations (EU #040, 049-054, & 061-065)

furnaces, and three in-line degassers will be removed from each unit, collected in dross pans, and transported to a dross house. Once moved to the dross house, dross will be cooled, stored, and eventually shipped off-site for third-party processing and metal reclamation. A baghouse will be used to control PM emissions associated with the new dross house. The emission factor for PM is 3.7 lb/ton of dross processed (Captured/Pre-control) and it was developed from the performance specification for the equipment.

Process Area 02: Hot Rolling Plant

Emission Units # 049 & 050: Band Saws #1 & #2

Maximum Capacity: 158.73 tons/hr, each

Control Device: None

Two single band saws will be installed in the hot rolling area. Each single band saw will be equipped with one vertically oriented bladed used predominantly for sawing the ingot heat and tail. The band saw will also have section cutting (cut sections from the middle of ingot) and sample cutting capability to ensure high end surface quality ingots before the ingots are processed in the ingot scalper. A low vapor pressure organic compound-based lubricant will be applied to facilitate the cutting process. Each saw will have the capability to process approximately four ingots per hour.

The operation of each single band saw will generate aluminum chips (i.e., swarf), which will be collected by a dedicated saw cyclone. This cyclone is not considered a control device because it is primarily used to reclaim product, rather than control emissions Exhaust air from the cyclone will vent to the hot rolling area building interior. Chips generated by the saws will be sorted by alloy type. The collected chips of a certain alloy will be transferred to a briquetting unit, which will convert the chips to consistently sized briquettes. The briquettes produced by this unit will be transferred to scrap bins, which will be placed directly below the press to collect briquettes of a certain alloy type before being moved to the briquette storage area. When a casting line is processing a compatible alloy, the appropriate type of briquettes will be transferred from the briquette storage area to the melting furnace to complete the recycle loop. In summary, the chip processing and recycle system for each single band saw will consist of a dedicated cyclone, briquetting unit, and briquette storage system, which will feed briquettes as charge material to the melting furnaces. The emission factor for PM is 0.0034 lb/ton of aluminum processed (Captured/Pre-cyclone) for each band saw and is based on an engineering estimate for the equipment.

Emission Units # 051 & 052: Ingot Scalpers #1 & #2

Maximum Capacity: 162.70 tons/hr, each

Control Device: Cyclone/Wet Scrubber #1 & #2

Two ingot scalpers will be installed in the hot rolling area to receive ingots from the single band saw. These scalpers will be used for machining the rolling surfaces and edges of the ingots, which have already been processed by the single band saws. Undiluted high-performance cutting lubricant will be applied to facilitate the machining process. Each scalper will have the capability to process approximately 4.1 ingots per hour. The emission factor for PM is 0.199 lb/ton of aluminum processed (Captured/Pre-control) for each scalper and is based on an engineering estimate for the equipment.

Emission Units # 053 & 054: Scalper Chip Pneumatic Conveying Systems #1 & #2

Maximum Capacity: 43.65 tons/hr, each

Control Device: Wet Scrubber #1 & #2

Emission Group D: Process Operations (EU #040, 049-054, & 061-065)

The operation of each ingot scalper will generate aluminum chips (i.e., swarf), which will be captured by a chip collection hood and routed to a dedicated crusher. A fan will be used to pneumatically convey these crushed chips through an inherent product collection cyclone. Exhaust air from the cyclone will be routed to a Venturi-type wet scrubber for PM emissions control, while the collected chips will be transferred to chip storage bins. This cyclone is not considered a control device because it is integral and primarily used to reclaim product, rather than control emissions. In summary, the chip processing system for each ingot scalper will consist of a dedicated crusher, product collection cyclone, wet scrubber PM control device, and associated chip storage bins. Chips generated by the scalpers will be sorted by alloy type. The emission factor for PM is 0.00109 lb/ton of aluminum processed (Captured/Pre-control) for each pneumatic conveying system and is based on an engineering estimate for the equipment.

Emission Unit # 061: Hot Roughing Mill & Emission Unit # 062: Hot Finishing Mill

Maximum Capacity for EU #061: 175.87 tons/hr

Maximum Capacity for EU #062: 170.53 tons/hr

Control Device: Mist Eliminators #1 & #2

The 1 + 1 hot rolling mill will include one single-stand reversing roughing mill and one single-stand reversing finishing mill, along with roller tables, a vertical edger, shears, and coilers. Preheated ingots from the pusher furnaces will be conveyed to the roughing mill via the roll table.

After the strip reaches the desired thickness in the roughing mill, it will be moved on a roller table to the single-stand reversing finishing mill for final gauge reduction and conversion to a hot rolled coil. On its way to the finishing mill, the strip will pass through shears, which will cut the slab ends to provide a clean leading edge for subsequent rolling and coiling operations. The resulting coil will then be removed and transported to the cold rolling area for further processing.

A water-based mineral oil emulsion will be used as a coolant and lubricant for the work rolls while they are in operation. Various spray heads above and below the roll table will be used to cool and lubricate the rollers, edger, and shears. Furthermore, kerosene-like light hydrotreated petroleum distillate will be sprayed as a “bite” lubricant to facilitate the work rolls biting onto the slab and the threading process at the mill stand.

The blended oil component of the oil/water emulsions used in the roughing mill and finishing mill will be stored in the roughing mill base oil tank and finishing mill base oil tank (EUs 138, 136 - Insignificant Activities), respectively. To minimize coolant usage rates, Braidy will implement a coolant treatment, cleaning/filtering, and recycling loop on each mill. Specifically, used coolant from the roughing mill will drain to a mill foundation shaped area positioned below the mill stand, before flowing to the 3-chamber roughing mill main emulsion tank (EU 135 - Insignificant Activity) by gravity. The roughing mill main emulsion tank will be separated into three distinct chambers: a Used Coolant Chamber, an Intermediate Chamber, and a Clean Coolant Chamber.

An equivalent coolant recycling system, including a 3-chamber finishing mill emulsion tank (EU 137 - Insignificant Activity), will be installed on the finishing mill. Emissions of PM from the hot roughing mill are calculated based on a vendor provided emission factor of 0.082 lb/ton of aluminum processed and calculations of PM from the hot finishing mill are based on an engineering estimated emission factor of

Emission Group D: Process Operations (EU #040, 049-054, & 061-065)

0.0846 lb/ton of aluminum processed.

Process Area 03: Cold Rolling Plant

Emission Units # 063 through 065: Cold Mills #1-3

Maximum Capacity: 243.89 tons/hr, each

Control Device: AIRWASH Air Purification – Heavy Oil Scrubber #1 & #2

Three identical 6-high single stand cold rolling mills will provide cold rolling capabilities to Braidy's production process. The overall mill assembly will be designed to produce coils with accurate thickness while ensuring appropriate flatness and surface quality. The primary mechanical components of the cold rolling mills are the mill stands, coil unwind/rewind systems, drive motors, and coolant systems.

A mineral oil-based spray is used for temperature control and lubrication during rolling. As with the hot rolling mills, the cold rolling mills will employ a coolant recycling system that collects, filters and reintroduces the salvaged coolant to the mills. The roll coolant application rate will primarily depend on the line speed and product specifications (e.g., starting and ending gauge, width, hardness, alloy type, etc.).

The recycling process will be used to recover and recirculate the majority of roll coolant applied at the cold rolling mills. Excess roll coolant will be collected in a large mill pan (i.e., coolant collection tray) located beneath each cold rolling mill's mill stand. Residual roll coolant remaining on the strip as it exits the work roll bite will be removed by an air blower, which will discharge roll coolant to the associated mill pan. From the mill pan, the majority of recovered roll coolant will be routed via a collecting pan to return tank located underground. From the return tank the used rolling oil will be pumped to the dirty tank chamber of the main tank for subsequent filtering so that the rolling oil can be reused. A vendor provided emission factor for PM of 42.818 lbs/hour of operation (captured/pre-control) for the combination of cold rolling mill #1 and #2 (EUs 063, 064) was used in calculations. Similarly, a vendor supplied emission factor for PM of 21.409 lbs/hour of operation for cold rolling mill #3 (EU 065) was also used.

Applicable Regulations:

401 KAR 50:012, *General application*. This KAR provides guidelines by which all administrative regulations of 401 KAR Chapters 50 to 65, are to be understood and "shall guide the cabinet in the issuance, modification, and revocation of permits." The regulation specifies that in the absence of a specified standard, all major air contaminant sources shall, at a minimum, apply control procedures that are reasonable, available, and practical (RAP). Braidy examined the possible RAP controls for VOCs at the proposed facility. This led to the inclusion of an absorption system and post scrubber mist eliminators in the cold rolling mills section of the plant. It was also determined that work practices targeting VOC emissions minimization were appropriate RAP requirements.

401 KAR 59:010, *New process operations*, applicable to affected facilities or sources, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR Chapter 59, commenced on or after July 2, 1975.

401 KAR 63:020, *Potentially hazardous matter or toxic substances*, applicable to each affected facility which emits or may emit potentially hazardous matter or toxic substances, provided such emissions are not elsewhere subject to the provisions of the administrative regulations of the Division for Air Quality. For

Emission Group D: Process Operations (EU #040, 049-054, & 061-065)

this project, this KAR is applicable with regard to both haps and toxics, mostly metals, which may become airborne particulate due to the use of band saws and scalpers in the Hot Rolling Plant area of the facility.

Precluded Regulation:

401 KAR 51:017, *Prevention of significant deterioration of air quality*. This KAR provides for the prevention of significant deterioration (PSD) of ambient air quality. This regulation has been precluded by the source taking voluntary limits on emissions of PM, PM₁₀, PM_{2.5}, NO_x, VOC, to stay below total emissions of 250 tpy for each pollutant and become a synthetic minor source with regard to PSD.

Comments: Braily has taken a voluntary operational limit for most of this equipment in order to ensure emissions remain below the major source thresholds for 401 KAR 51:017. The permit is written such that these limits may become more stringent pending the results of performance testing to verify emission factors used in calculating emissions. Should actual emission factors be higher than those in the application, the operational limits could be changed to ensure emissions of each criteria pollutant will be kept below 250 tons per year per pollutant, including emissions from insignificant activities (See Permit V-18-001, Section C – Insignificant Activities).

Emission Group E: Direct Heat Exchangers w/ Captured Emissions (EU #041-046 & 056-060)

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	2.34 lb/hr	401 KAR 59:010, Section 3(2)	Refer to process descriptions, below, for each type of equipment for PM emission factors and bases	Performance Testing, Emission Calculations
PM	20% opacity	401 KAR 59:010, Section 3(1)(a)	----	Weekly qualitative visual observation from each stack. U.S. EPA Method 9 if visible emissions are present
NO _x	2.37 tpy, each, on a 12-month rolling basis for the Homogenizing Batch Furnaces #1-6 (EUs 041-046)	To Preclude 401 KAR 51:017	185.796 lb/MMscf burned (Captured/No Control) (Vendor Supplied Emission Factor)	Performance Testing, Emission Calculations
NO _x	9.06 tpy, each, on a 12-month rolling basis for the Pusher Furnaces #1-5 (EUs 056-060)	To Preclude 401 KAR 51:017	185.796 lb/MMscf burned (Captured/No Control) (Vendor Supplied Emission Factor)	Performance Testing, Emission Calculations

Emission Group E: Direct Heat Exchangers w/ Captured Emissions (EU #041-046 & 056-060)

Initial Construction Date: May 2018

Process Description:

Process Area: 02: Hot Rolling Plant

Emission Unit #041 through 046: Homogenizing Batch Furnaces #1-6

Maximum Capacity: 5.51 tons/hr, each

Maximum Heat Input: 23.8 MMBtu/hr, each

Fuel: Natural Gas

Control Device: None

After being processed by the scalpers (EUs 051-052), ingots can then be transferred to one of six natural gas-fired homogenizing batch furnaces if the specific product type requires a “homogenization” cycle. These furnaces will be arranged in a parallel configuration, such that either scalper will have the capability to feed any of the homogenizing batch furnaces. The purpose of these preheating furnaces is to improve uniformity in the ingot composition prior to rolling operations.

Each homogenizing batch furnace will have two zones, each with six low-NO_x burners, a shared central recuperator used to preheat the combustion air and improve fuel efficiency, and stack gas admixing to reduce NO_x emissions. Each set of three homogenizing batch furnaces will share a common forced draft exhaust stack. All emissions from the Homogenizing Batch Furnaces are from combustions of natural gas with a PM emission factor of 1.9 lbs/MMscf burned, based on AP-42, Table 1.4-2.

Emission Units # 056 through 060: Pusher Furnaces #1-5

Maximum Capacity: 75.25 tons/hr, each

Maximum Heat Input: 79.4 MMBtu/hr, each

Fuel: Natural Gas

Control Device: None

After being processed by the homogenizing batch furnace, ingots can then be transferred to one of five natural gas-fired pusher furnaces. Ingots from the scalpers can also be fed directly to the pusher furnaces without first being processed in the homogenizing batch furnaces. These furnaces will be arranged in parallel configuration, such that the scalpers or homogenizing batch furnaces can feed any of the subsequent pusher furnaces. The temperature in each pusher furnace will follow a controlled cycle, which will vary depending on the type of alloy and intended metallurgical properties.

Each pusher furnace consists of five furnace zones, where each zone will contain eight two-stage low-NO_x burners and a shared central recuperator for a total of five central recuperators per furnace. The recuperators will use exhaust gas to preheat combustion air and improve fuel efficiency. Furthermore, stack gas admixing will be implemented to reduce NO_x emissions. Each pusher furnace will exhaust through a dedicated natural draft stack. All emissions from the pusher furnaces are from combustions of natural gas with a PM emission factor of 1.9 lbs/MMscf burned, based on AP-42, Table 1.4-2.

Applicable Regulations:

401 KAR 59:010, *New process operations*, applicable to affected facilities or sources, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR

Emission Group E: Direct Heat Exchangers w/ Captured Emissions (EU #041-046 & 056-060)

Chapter 59, commenced on or after July 2, 1975.

401 KAR 63:020, *Potentially hazardous matter or toxic substances*, applicable to each affected facility which emits or may emit potentially hazardous matter or toxic substances, provided such emissions are not elsewhere subject to the provisions of the administrative regulations of the Division for Air Quality.

Precluded Regulation:

401 KAR 51:017, *Prevention of significant deterioration of air quality*. This KAR provides for the prevention of significant deterioration (PSD) of ambient air quality. This regulation has been precluded by the source taking voluntary limits on emissions of PM, PM₁₀, PM_{2.5}, NO_x, VOC, to stay below total emissions of 250 tpy for each pollutant and become a synthetic minor source with regard to PSD.

Comments: Braidy has taken voluntary operational limits for most of this equipment in order to ensure emissions remain below the major source thresholds for 401 KAR 51:017. This includes natural gas combustion limits for both homogenizing batch furnaces and the pusher furnaces, and the inclusion of a Good Combustion Optimization Plan requirement for all the units. In addition, there is a voluntary NO_x emission limit for both types of furnaces. The permit is written such that these limits may become more stringent pending the results of performance testing to verify emission factors used in calculating emissions. Should actual emission factors be higher than those in the application, the operational limits could be changed to ensure emissions of each criteria pollutant will be kept below 250 tons per year per pollutant, including emissions from insignificant activities (See Permit V-18-001, Section C – Insignificant Activities).

Emission Group F: Annealing Furnaces (EU #066-085)

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
SO ₂	1.1 lb/MMBtu	401 KAR 59:015, Section 5(1)(c)2	0.6 lb/MMscf (AP-42 Table 1.4-2)	Assumed to be in compliance while combusting natural gas
PM	0.32 lb/MMBtu	401 KAR 59:015, Section 4(1)(c)	1.9 lb/MMscf (AP-42 Table 1.4-2)	Performance Testing, Emission Calculations
PM	20% opacity	401 KAR 59:015, Section 4(2)	----	Assumed to be in compliance while combusting natural gas
NO _x	1.41 tpy, each, on a 12-month rolling total basis	To Preclude 401 KAR 51:017	232.245 lb/MMscf burned (Captured/No Control) (Vendor Supplied Emission Factor)	Performance Testing, Emission Calculations

Emission Group F: Annealing Furnaces (EU #066-085)

Initial Construction Date: May 2018

Process Description:

Process Area 03: Cold Rolling Plant

Emission Unit # 066 through 085: Annealing Furnaces #1-20

Maximum Aluminum Processing Capacity: 4.59 tons/hr, each

Maximum Heat Input: 9.6 MMBtu/hr, each

Fuel: Natural Gas

Control Device: None

Prior to and between passes at the cold rolling mills, coils will be transferred to one of 20 natural gas-fired annealing furnaces. These furnaces will be arranged in parallel configuration, such that any of the cold rolling mills will have the capability to feed any of the annealing furnaces.

Each annealing furnace will be equipped with approximately 16 natural gas-fired radiant tube burners. Each furnace will have a recuperator that is used to preheat the combustion air and improve fuel efficiency. Each set of five annealing furnaces will share a common forced draft exhaust stack.

Applicable Regulations:

401 KAR 63:002, Section 2(4)(iii), 40 C.F.R. 63.7480 to 63.7575, Tables 1 to 13 (Subpart DDDDD), *National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters*, applicable to an industrial, commercial, or institutional boiler or process heater as defined in 40 CFR 63.7575 that is located at, or is part of, a major source of HAP, except as specified in 40 CFR 63.7491. The annealing furnaces are considered new process heaters in the “metal process furnaces” subcategory, and will also be categorized as “units designed to burn gas 1 fuels”.

401 KAR 59:015, *New indirect heat exchangers*, applicable to indirect heat exchangers having a heat input capacity greater than 1 million BTU per hour (MMBtu/hr) and commenced on or after April 9, 1972.

Precluded Regulation:

401 KAR 51:017, *Prevention of significant deterioration of air quality*. This KAR provides for the prevention of significant deterioration (PSD) of ambient air quality. This regulation has been precluded by the source taking voluntary limits on emissions of PM, PM₁₀, PM_{2.5}, NO_x, VOC, to stay below total emissions of 250 tpy for each pollutant and become a synthetic minor source with regard to PSD.

Comments: Braidy has taken voluntary operational limits for this equipment in order to ensure emissions remain below the major source thresholds for 401 KAR 51:017. This includes natural gas combustion limits and the inclusion of a Good Combustion Optimization Plan requirement for the annealing furnaces. In addition, there is a voluntary NO_x emission limit for the furnaces. The permit is written such that these limits may become more stringent pending the results of performance testing to verify emission factors used in calculating emissions. Should actual emission factors be higher than those in the application, the operational limits could be changed to ensure emissions of each criteria pollutant will be kept below 250 tons per year per pollutant, including emissions from insignificant activities (See Permit V-18-001, Section

Emission Group F: Annealing Furnaces (EU #066-085)

C – Insignificant Activities).

**Emission Group G: Strip Processing Plant Process Operations
 (EU #092, 094-098, 100-102, 104-108, 110-112, 114-118, 120, & 121)**

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	<ul style="list-style-type: none"> • $P \leq 0.5$ ton/hr = 2.34 lb/hr • $0.5 < P \leq 30$ ton/hr = $3.59 \times P^{0.62}$ lb/hr • $P > 30$ ton/hr = $17.31 \times P^{0.16}$ 	401 KAR 59:010, Section 3(2)	Refer to process descriptions, below, for each type of equipment for PM emission factors and bases	Performance Testing, Emission Calculations. See permit V-18-001 for specific testing, monitoring and reporting requirements for each type of equipment **
PM	20% opacity	401 KAR 59:010, Section 3(1)(a)	----	Weekly qualitative visual observation from each stack. U.S. EPA Method 9 if visible emissions if present
NOx	9.08 tons on a 12-month rolling basis for each Heat Treat Furnace in the Heat Treat Section (EUs 094, 104, 114)	To Preclude 401 KAR 51:017	131.605 lbs/MMscf natural gas burned each Heat Treat Section Furnace (Captured/No Control) (Vendor Supplied Emission Factor)	Performance Testing, Emission Calculations
NOx	1.91 tons on a 12-month rolling basis for each Heat Treat Furnace in the Spiking Section (EUs 095, 105, 115)	To Preclude 401 KAR 51:017	77.415 lbs/MMscf natural gas burned each Spiking Section Furnace (Captured/No Control) (Vendor Supplied Emission Factor)	Performance Testing, Emission Calculations

**Emission Group G: Strip Processing Plant Process Operations
 (EU #092, 094-098, 100-102, 104-108, 110-112, 114-118, 120, & 121)**

NOx	1.14 tons on a 12-month rolling basis for each Reheater Furnace (EUs 100, 110, 120)	To Preclude 401 KAR 51:017	77.415 lbs/MMscf natural gas burned each Reheater Furnace (Captured/No Control) (Vendor Supplied Emission Factor)	Performance Testing, Emission Calculations
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**** Note:** Although the application states that the Tension Levelers (EUs 096, 106, and 116) emit only VOCs due to lubricants, the emissions from these units exit a stack mixed with emissions from other units in the CASH line and cannot be separated. Therefore, it is assumed that these units are subject to 401 KAR 59:010, as are all the other units in the line.

Initial Construction Date: May 2018

Process Description:

Process Area 04: Strip Processing Plant

Emission Unit # 92, 94 through 98, 100 through 102, 104 through 108, 110 through 112, 114 through 118, 120 & 121: Strip Processing Plant Process Operations (CASH Lines #1-3)

Control Device: Wet Scrubbers

The continuous anneal and solution heat treatment lines (CASH Lines) are combined heat treatment and chemical treatment lines for the production of finished coils targeted for automotive industry end users. The raw material input to the CASH Lines will be cold-rolled aluminum coil from any of the three cold rolling mills. The CASH lines consist of three sections.

1. *Entry Section:* The entry section converts the coils to a continuous strip and prepares the strip surface for subsequent annealing and chemical treatment. This section begins with the strip uncoiling equipment group containing coil cars, double pay-off reels, flatteners, cropping shears, stitcher, notcher, side trimmer, and scrap chopper. The continuous strip then enters a mild alkaline cleaning section for removal of residual material on the strip. PM emission factors for each alkaline cleaning operation (EUs 092, 102, and 112) are 0.021 lbs/1000 square feet of aluminum processed based on an engineering estimate.
2. *Process Section:* The process section contains the heat treat furnace, tension leveler, pickling, and post-treatment chemical section and the associated steering rolls, bridle rolls, deflector rolls. In the floater-type heat treat furnace, cold-rolled coils of heat-treatable aluminum alloy (6xxx series) are solution heat treated in a continuous process. Recrystallization anneals can also be carried out on non-heat-treatable alloys (e.g., 5xxx series). Once the strip leaves the furnace section, it passes through a combined air/water quench. After these cooling/drying/holding zones, a spiking section is included to raise the temperature of the strip for a brief period. Finally, after the spiking section, air cooling sections cool the strip back down. The heat treat furnaces in the heat treat section (EUs 94, 104, 114) and the spiking section (EUs 95, 105 and 115) as well as the reheater furnaces (EUs 100, 110, and 120) each has a PM emission factor of 1.9 lbs/MMscf natural gas burned based on AP-41, table 1.4-2. Each of the pickling operation units (EUs 097, 107, and 117) and post-treatment operation units (EUs 098, 108, and 118) has a vendor supplied PM emission factor of 0.0325 lb/1000 square feet of aluminum treated. The alkaline cleaning operations of each CASH line (EUs

**Emission Group G: Strip Processing Plant Process Operations
(EU #092, 094-098, 100-102, 104-108, 110-112, 114-118, 120, & 121)**

092, 102, 112) has a vendor supplied PM emission factor of 0.021 lb/1000 square feet of aluminum processed. There are no PM emissions from the tension levelers (EUs 096, 106, 116).

Additionally, each of the pickling operation units (EUs 097, 107, and 117) and post-treatment operation units (EUs 098, 108, and 118) emits hydrofluoric acid and sulfuric acid. Vendor supplied emission factors for these are 0.013 lbs/1000 square feet of aluminum processed for hydrofluoric acid and 0.0325 lbs/1000 square feet of aluminum processed for sulfuric acid.

3. *Exit Section:* The aluminum strip exiting the reheater furnaces will next pass through an electrostatic lubing section (EUs 101, 111, 121). Depending on customer requirements, prior to being rewound into coils, this final unit operation may optionally be used to electrostatically apply a thin, uniform film of lubricant onto the surface of the coil strip. Strip that does not require lubricant to be applied via the electrostatic lubing process will simply pass through this section while the spray application is disengaged. The final recoiling equipment group for generating finished product coils includes steering rolls, bridle rolls, rotary shear, double tension reel with belt wrapper, coil cars, coil strapping machines, and long sample conveyor. The electrostatic lubing (EUs 101, 111, 121) of each line has an emission factor for PM of 0.0049 lb/1000 square feet of aluminum treated based on an engineering estimate. Testing to verify these engineering estimates and establish actual emission factors used has been added to the permit for both PM and VOCs.

Applicable Regulations:

401 KAR 59:010, *New process operations*, applicable to affected facilities or sources, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR Chapter 59, commenced on or after July 2, 1975.

401 KAR 63:020, *Potentially hazardous matter or toxic substances*, applicable to each affected facility which emits or may emit potentially hazardous matter or toxic substances, provided such emissions are not elsewhere subject to the provisions of the administrative regulations of the Division for Air Quality

Non-applicable Regulations:

40 CFR 60, Subpart TT, *Standards of Performance for Metal Coil Surface Coating*, applicable to each prime coat operation, each finish coat operation, and each prime and finish coat operation combined when the finish coat is applied wet on wet over the prime coat and both coatings are cured simultaneously and that commenced after January 5, 1981. This NSPS regulation does not apply to the Braidy project because all of the coatings applied to the surface of the aluminum metal strip processed in the CASH Lines are either protective lubricants, acids, or bases. This exempts each CASH line from applicability of the requirements of Subpart TT.

40 CFR 63, Subpart SSSS, *National Emission Standards for Hazardous Air Pollutants: Surface Coating of Metal Coil*. This regulation establishes standards to reduce HAP emissions at major sources of HAPs where metal coil is coated and cured. The Braidy project is not subject to this rule because all of the coating applied to the aluminum strips processed through the CASH Lines of the Strip Processing Plant are protective lubricants, acids, or bases rather than permanent primer or finish coatings. This exempts each CASH line from applicability of this rule.

**Emission Group G: Strip Processing Plant Process Operations
 (EU #092, 094-098, 100-102, 104-108, 110-112, 114-118, 120, & 121)**

40 CFR 63, Subpart XXXXXX, *National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories*. This MACT regulates various metal product industries requiring certain operational practices that would reduce metal HAP emissions. The rule is not applicable to the Braidy facility because it is not classified under any of the SIC codes regulated by this Subpart.

Precluded Regulation:

401 KAR 51:017, *Prevention of significant deterioration of air quality*. This KAR provides for the prevention of significant deterioration (PSD) of ambient air quality. This regulation has been precluded by the source taking voluntary limits on emissions of PM, PM₁₀, PM_{2.5}, NO_x, VOC, to stay below total emissions of 250 tpy for each pollutant and become a synthetic minor source with regard to PSD.

Comments: Braidy has taken voluntary operational limits for this equipment in order to ensure emissions remain below the major source thresholds for 401 KAR 51:017. This includes limits on square feet of product processed, limits on cubic feet of natural gas burned in the combustion units, and limits on gallons of lubricant used. There is also a requirement for the inclusion of a Good Combustion Optimization Plan for the units that use fossil fuel and a requirement that the permittee maintains a capture efficiency of 100 percent for hooding and enclosures for EUs 096-098, 106-108, and 116-118. In addition, there are voluntary NO_x emission limits for furnaces. The permit is written such that these limits may become more stringent pending the results of performance testing to verify emission factors used in calculating emissions. Should actual emission factors be higher than those in the application, the operational limits could be changed to ensure emissions of each criteria pollutant will be kept below 250 tons per year per pollutant, including emissions from insignificant activities (See Permit V-18-001, Section C – Insignificant Activities).

Emission Group H: Diesel-fired Emergency Generating Engines (EU #128 – 130)

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
NO _x	9.2 g/kW-hr	40 CFR 898.112, Table 1	267.515 lbs/1000 gal diesel burned (Vendor Supplied Emission Factor)	Purchase an engine certified to the standard. See permit V-18-001 for alternative compliance
CO	3.5 g/kW-hr	40 CFR 898.112, Table 1	9.06 lbs/1000 gal diesel burned (Vendor Supplied Emission Factor)	Purchase an engine certified to the standard. See permit V-18-001 for alternative compliance
PM	0.20 g/kW-hr	40 CFR 898.112, Table 1	0.86 lb/1000 gal diesel burned (Vendor Supplied Emission Factor)	Purchase an engine certified to the standard. See permit V-18-001 for alternative compliance

Emission Group H: Diesel-fired Emergency Generating Engines (EU #128 – 130)

Initial Construction Date: May 2018

Process Description:

Emission Unit #128-130: Emergency Generator Engines #1-3

Maximum Capacity: 1,711 HP, each

Fuel: Diesel

Control Device: None

Three 1,250 kW emergency generators installed to provide backup power to various critical equipment. The engines will only be operated when needed for emergency purposes and during periodic maintenance and readiness testing.

Applicable Regulations:

401 KAR 60:005, Section 2(2)(dddd), 40 C.F.R. 60.4200 to 60.4219, Tables 1 to 8 (Subpart IIII), *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, applicable to owners and operators of stationary compression ignition (CI) internal combustion engines (ICE) that commence construction after July 11, 2005, where the stationary CI ICE are:

- Manufactured After April 1, 2006, and are not fire pump engines, or
- Manufactured as a certified National Fire Protection Association fire pump engine after July 1, 2006.

Applicable to owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005.

Note: D.C. Circuit Court [*Delaware v. EPA*, 785 F. 3d 1 (D.C. Cir. 2015)] has vacated the provisions in 40 CFR 60, Subpart IIII that contain the 100-hour exemption for operation of emergency engines for purposes of emergency demand response under 40 CFR 60.4211(f)(2)(ii)-(iii). The D.C. Circuit Court issued the mandate for the vacatur on May 4, 2016.

401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, applicable to stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand. A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

Precluded Regulation:

401 KAR 51:017, *Prevention of significant deterioration of air quality*. This KAR provides for the prevention of significant deterioration (PSD) of ambient air quality. This regulation has been precluded by the source taking voluntary limits on emissions of PM, PM₁₀, PM_{2.5}, NO_x, VOC, to stay below total emissions of 250 tpy for each pollutant and become a synthetic minor source with regard to PSD.

Comments: Additionally, operational and maintenance requirements apply to emergency generators under the applicable federal MACT (40 CFR 63, Subpart ZZZZ) and NSPS (40 CFR 60, Subpart IIII).

Emission Unit #123: Auxiliary Boiler #1				
Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
SO ₂	1.1 lb/MMBtu	401 KAR 59:015, Section 5(1)(c)2	0.6 lb/MMscf (AP-42 Table 1.4-2)	Assumed to be in compliance while combusting natural gas
PM	0.32 lb/MMBtu	401 KAR 59:015, Section 4(1)(c)	1.9 lb/MMscf (AP-42 Table 1.4-2)	Performance Testing, Emission Calculations
PM	20% opacity	401 KAR 59:015, Section 4(2)	----	Assumed to be in compliance while combusting natural gas
NO _x	0.8 tpy on a 12-month rolling total basis	To Preclude 401 KAR 51:017	12.378 lb/MMscf (No Control) (Vendor Supplied Emission Factor)	Performance Testing, Emission Calculations
<p>Initial Construction Date: May 2018</p> <p>Process Description: <u>Emission Unit #123: Auxiliary Boiler #1</u> Maximum Heat Input: 16.8 MMBtu/hr Fuel: Natural Gas Control Device: None</p> <p>A natural gas-fired auxiliary boiler installed to provide process steam and hot water to various users within the plant. This unit provides non-contact heat exchange with process fluids.</p> <p>Applicable Regulations:</p> <p>40 CFR 60, Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, applicable to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 100 MMBtu/hr or less, but greater than or equal to 10 MMBtu/hr. This applies to EU 123, Auxiliary Boiler #1, a natural gas-fired boiler that provides process steam and hot water to various units in the proposed facility. Since the unit uses natural gas, only recordkeeping and reporting requirements apply from this standard.</p> <p>40 CFR 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, applicable to an industrial, commercial, or institutional boiler or process heater as defined in 40 CFR 63.7575 that is located at, or is part of, a major source of HAP, except as specified in 40 CFR 63.7491. Under this regulation, industrial, commercial, and institutional boilers and process heaters are subjected to emission limitations and work practice standards to limit the emission of HAPs.</p> <p>401 KAR 59:015, New indirect heat exchangers, applicable to indirect heat exchangers having a heat input capacity greater than 1 million BTU per hour (MMBtu/hr) and commenced on or after April 9, 1972.</p>				

Emission Unit #123: Auxiliary Boiler #1

Precluded Regulation:

401 KAR 51:017, *Prevention of significant deterioration of air quality*. This KAR provides for the prevention of significant deterioration (PSD) of ambient air quality. This regulation has been precluded by the source taking voluntary limits on emissions of PM, PM₁₀, PM_{2.5}, NO_x, VOC, to stay below total emissions of 250 tpy for each pollutant and become a synthetic minor source with regard to PSD.

Comments: Braidy has taken voluntary operational limits for the Auxiliary Boiler #1 in order to ensure emissions remain below the major source thresholds for 401 KAR 51:017. This includes a natural gas combustion limit and a requirement to prepare a good combustion and operations practices plan (GCOP) for the boiler designed to minimize NO_x emissions. The permit is written such that this limit may become more stringent pending the results of performance testing to verify emission factors used in calculating emissions. Should actual emission factors be higher than those in the application, the operational limits could be changed to ensure emissions of each criteria pollutant will be kept below 250 tons per year per pollutant, including emissions from insignificant activities (See Permit V-18-001, Section C – Insignificant Activities).

Emission Unit #131: Diesel-fired Fire Pump Engine #1

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
NMHC + NO _x	4.0 g/kW-hr	40 CFR 60.4205(c) referencing 40 CFR 60, Subpart III, Table 4	126.525 lbs per 1000 gallons diesel burned for NO _x **	Purchase an engine certified to the standard. See permit V-18-001 for alternative compliance
CO	3.5 g/kW-hr	40 CFR 60.4205(c) referencing 40 CFR 60, Subpart III, Table 4	32.1 lb/1000 gal (Vendor Supplied Emission Factor)	Purchase an engine certified to the standard. See permit V-18-001 for alternative compliance
PM	0.20 g/kW-hr	40 CFR 60.4205(c) referencing 40 CFR 60, Subpart III, Table 4	4.79 lb/1000 gal (Vendor Supplied Emission Factor)	Purchase an engine certified to the standard. See permit V-18-001 for alternative compliance

** Non-Methane Hydrocarbons (NMHC) are not currently calculated and tracked as a separate pollutant. The permittee will purchase an engine certified to the standard or follow the alternative as required by the federal regulation 40 CFR, Subpart III.

Initial Construction Date: May 2018

Process Description:

Emission Unit #131: Diesel-fired Fire Pump Engine #1

Maximum Capacity: 350 HP

Fuel: Diesel

Control Device: None

Emission Unit #131: Diesel-fired Fire Pump Engine #1

One emergency use firewater pump engine installed to provide fire suppression. The engine will only be operated when needed for emergency purposes and during periodic maintenance and readiness testing.

Applicable Regulations:

401 KAR 60:005, Section 2(2)(dddd), 40 C.F.R. 60.4200 to 60.4219, Tables 1 to 8 (Subpart IIII), *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, applicable to owners and operators of stationary compression ignition (CI) internal combustion engines (ICE) that commence construction after July 11, 2005, where the stationary CI ICE are manufactured After April 1, 2006, and are not fire pump engines, or manufactured as a certified National Fire Protection Association fire pump engine after July 1, 2006.

Note: D.C. Circuit Court [*Delaware v. EPA*, 785 F. 3d 1 (D.C. Cir. 2015)] has vacated the provisions in 40 CFR 60, Subpart IIII that contain the 100-hour exemption for operation of emergency engines for purposes of emergency demand response under 40 CFR 60.4211(f)(2)(ii)-(iii). The D.C. Circuit Court issued the mandate for the vacatur on May 4, 2016.

401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, applicable to stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand. A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

Precluded Regulation:

401 KAR 51:017, *Prevention of significant deterioration of air quality*. This KAR provides for the prevention of significant deterioration (PSD) of ambient air quality. This regulation has been precluded by the source taking voluntary limits on emissions of PM, PM₁₀, PM_{2.5}, NO_x, VOC, to stay below total emissions of 250 tpy for each pollutant and become a synthetic minor source with regard to PSD.

Comments: In order to satisfy the emission limits, as listed in the table above, the permittee shall purchase an engine certified to the standard or follow the alternative as required by the federal regulation 40 CFR, Subpart IIII.

Emission Unit # 139: Roads

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	No visible dust emissions beyond lot line of the property on which emissions originate	401 KAR 63:010, Section 3(2)	0.204 lbs/vehicle mile traveled based on AP-42, Section 13.2.1	Reasonable precautions. See Permit V-18-001 for specific housekeeping and maintenance techniques required

Emission Unit # 139: Roads

Initial Construction Date: May 2018

Process Description:

Emission Unit # 139: Paved Haul Roads

Maximum Distance: 5.5 miles

When a vehicle travels on a haul road, the vehicle's tires agitate silt on the roadway while the air currents created by the turbulent vehicle wake can further entrain silt on the road surface, thereby generating particulate matter emissions. Various paved haul roads will be constructed at the Braidy plant to allow transport of raw materials, products, and customer returns by truck. To minimize emissions of uncaptured dust associated with the operation of the trucks, the roads will be paved and good housekeeping practices such as sweeping will be used.

Applicable Regulation:

401 KAR 63:010, *Fugitive emissions*, applicable to an apparatus, operation, or road which emits or may emit fugitive emissions provided that the fugitive emissions from such facility are not elsewhere subject to an opacity standard within the administrative regulations of the Division for Air Quality. This regulation establishes administrative controls and practical application precautions for preventing particulate matter, fumes, gases, mist, odorous matter, or vapors from becoming airborne and prohibits visible emissions from crossing the lot line of properties on which emissions originate. It also establishes some requirements for trucks and earth moving equipment.

Comments: Particulate emission calculations are based on 407.5 vehicle miles traveled per day on the paved haul roads. The truck routes anticipated include the CASH line delivery and loadout, melting and casting delivery/loadout, dross loadout and cold rolling delivery/loadout.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)

Testing Requirements/Results

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Throughput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
001-003	Lime-Injected Filter House #1-3	PM	40 CFR 63.1511(b), 40 CFR 63.1511(e)	Initial & Every 5 years	U.S. EPA Reference Method 5	0.40 lb/ton of feed / charge	----	----	----	TBD
001-003	Lime-Injected Filter House #1-3	D/F TEQ	40 CFR 63.1511(b), 40 CFR 63.1511(e)	Initial & Every 5 years	U.S. EPA Reference Method 23	2.1x10 ⁻⁴ gr/ton of feed / charge	----	----	----	TBD
001-003	Lime-Injected Filter House #1-3	HCl	40 CFR 63.1511(b), 40 CFR 63.1511(e)	Initial & Every 5 years	U.S. EPA Reference Method 26A	0.40 lb/ton of feed / charge	----	----	----	TBD
007-009	Lime-Injected Filter House #1-3	PM	40 CFR 63.1511(b), 40 CFR 63.1511(e)	Initial & Every 5 years	U.S. EPA Reference Method 5	0.40 lb/ton of feed / charge	----	----	----	TBD
007-009	Lime-Injected Filter House #1-3	D/F TEQ	40 CFR 63.1511(b), 40 CFR 63.1511(e)	Initial & Every 5 years	U.S. EPA Reference Method 23	2.1x10 ⁻⁴ gr/ton of feed / charge	----	----	----	TBD
007-009	Lime-Injected Filter House #1-3	HCl	40 CFR 63.1511(b), 40 CFR 63.1511(e)	Initial & Every 5 years	U.S. EPA Reference Method 26A	0.40 lb/ton of feed / charge	----	----	----	TBD
001-003, 007-009, & 013-015	Lime-Injected Filter House #1-3	PM	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 5	N/A	----	Emission Factor, Control Efficiency, & Evaluate Throughput Limits	----	TBD

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Throughput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
001-003, 007-009, & 013-015	Lime-Injected Filter House #1-3	PM ₁₀ /PM _{2.5}	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 201A/202	N/A	----	Emission Factor, Control Efficiency, & Evaluate Throughput Limits	----	TBD
001-003 & 007-009	Lime-Injected Filter House #1-3	NO _x	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 7	24.38 tpy each melting furnace / holding furnace pair	----	Emission Factor	----	TBD
001-003 & 007-009	Lime-Injected Filter House #1-3	CO	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 10	N/A	----	Emission Factor	----	TBD
013-015	Lime-Injected Filter House #1-3	HCl	40 CFR 63.1511(b), 40 CFR 63.1511(e)	Initial & Every 5 years	U.S. EPA Reference Method 26A	0.40 lb/ton of feed / charge	----	----	----	TBD
013-015	Lime-Injected Filter House #1-3	PM	40 CFR 63.1511(b), 40 CFR 63.1511(e)	Initial & Every 5 years	U.S. EPA Reference Method 5	0.01 lb/ton of feed / charge	----	----	----	TBD
040	Baghouse	PM	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 5	N/A	----	Emission Factor, Control Efficiency, & Evaluate Throughput Limits	----	TBD
040	Baghouse	PM ₁₀ /PM _{2.5}	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 201A/202	N/A	----	Emission Factor, Control Efficiency, & Evaluate Throughput Limits	----	TBD
051 & 052	Cyclone/Wet Scrubber #1-2	PM	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 5	N/A	----	Emission Factor, Control Efficiency, & Evaluate Throughput Limits	----	TBD

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Throughput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
051 & 052	Cyclone/Wet Scrubber #1-2	PM ₁₀ /PM _{2.5}	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 201A/202	N/A	----	Emission Factor, Control Efficiency, & Evaluate Throughput Limits	----	TBD
061 & 062	Mist Eliminators #1-2	PM	To preclude 401 KAR 51:017	Initial & Every 5 years	Methods approved by the Division	N/A	----	Emission Factor, Capture Efficiency, Control Efficiency, & Evaluate Throughput Limits	----	TBD
061 & 062	Mist Eliminators #1-2	PM ₁₀ /PM _{2.5}	To preclude 401 KAR 51:017	Initial & Every 5 years	Methods approved by the Division	N/A	----	Emission Factor, Capture Efficiency, Control Efficiency, & Evaluate Throughput Limits	----	TBD
061 & 062	-----	VOC	To preclude 401 KAR 51:017	Initial & Every 5 years	Methods approved by the Division	EP #061: 10.76 tpy EP #062: 27.14 tpy	----	Emission Factor, Capture Efficiency	----	TBD
063 & 064	Heavy Oil Scrubber	PM / PM ₁₀ / PM _{2.5}	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 17/202	N/A	----	Emission Factor, Capture Efficiency, Control Efficiency, & Evaluate Throughput Limits	----	TBD
063 & 064	Heavy Oil Scrubber	VOC	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 25A	80.67 tpy	----	Emission Factor, Capture Efficiency, Control Efficiency, & Evaluate Throughput Limits	----	TBD
065	Heavy Oil Scrubber	PM / PM ₁₀ / PM _{2.5}	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 17/202	N/A	----	Emission Factor, Capture Efficiency, Control Efficiency, & Evaluate Throughput Limits	----	TBD

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Throughput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
065	Heavy Oil Scrubber	VOC	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 25A	48.28 tpy	----	Emission Factor, Capture Efficiency, Control Efficiency, & Evaluate Throughput Limits	----	TBD
041-046	----	PM	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 5	N/A	----	Emission Factor & Evaluate Throughput Limits	----	TBD
041-046	----	PM ₁₀ / PM _{2.5}	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 201A/202	N/A	----	Emission Factor & Evaluate Throughput Limits	----	TBD
041-046	----	NO _x	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 7	2.37 tpy (each)	----	Emission Factor	----	TBD
056-060	----	PM	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 5	N/A	----	Emission Factor & Evaluate Throughput Limits	----	TBD
056-060	----	PM ₁₀ / PM _{2.5}	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 201A/202	N/A	----	Emission Factor & Evaluate Throughput Limits	----	TBD
056-060	----	NO _x	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 7	9.06 tpy (each)	----	Emission Factor	----	TBD
066-085	----	PM	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 5	N/A	----	Emission Factor	----	TBD
066-085	----	PM ₁₀ / PM _{2.5}	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 201A/202	N/A	----	Emission Factor	----	TBD

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Throughput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
066-070	----	NO _x	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 7	1.41 tpy (each)	----	Emission Factor	----	TBD
071-075	----	NO _x	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 7	1.41 tpy (each)	----	Emission Factor	----	TBD
076-080	----	NO _x	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 7	1.41 tpy (each)	----	Emission Factor	----	TBD
081-085	----	NO _x	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 7	1.41 tpy (each)	----	Emission Factor	----	TBD
092, 102, & 112	Wet Scrubber	PM	To preclude 401 KAR 51:017	Initial & Every 5 years	Methods approved by the Division	N/A	----	Emission Factor, Control Efficiency, & Evaluate Throughput Limits	----	TBD
092, 102, & 112	Wet Scrubber	PM ₁₀ / PM _{2.5}	To preclude 401 KAR 51:017	Initial & Every 5 years	Methods approved by the Division	N/A	----	Emission Factor, Control Efficiency & Evaluate Throughput Limits	----	TBD
092, 102, & 112	----	VOC	To preclude 401 KAR 51:017	Initial & Every 5 years	Methods approved by the Division	N/A	----	Emission Factor & Evaluate Throughput Limits	----	TBD
094, 104, & 114	----	NO _x	To preclude 401 KAR 51:017	Initial & Every 5 years	Methods approved by the Division	9.08 tpy (each)	----	Emission Factor	----	TBD
095, 105, & 115	----	NO _x	To preclude 401 KAR 51:017	Initial & Every 5 years	Methods approved by the Division	1.91 tpy (each)	----	Emission Factor	----	TBD
100, 110, & 120	----	NO _x	To preclude 401 KAR 51:017	Initial & Every 5 years	Methods approved by the Division	1.14 tpy (each)	----	Emission Factor	----	TBD

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Throughput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
096-098, 106-108, & 116-118	Wet Scrubber	PM	To preclude 401 KAR 51:017	Initial & Every 5 years	Methods approved by the Division	N/A	----	Emission Factor, Capture Efficiency, Control Efficiency, & Evaluate Throughput Limits	----	TBD
096-098, 106-108, & 116-118	Wet Scrubber	PM ₁₀ / PM _{2.5}	To preclude 401 KAR 51:017	Initial & Every 5 years	Methods approved by the Division	N/A	----	Emission Factor, Capture Efficiency, Control Efficiency, & Evaluate Throughput Limits	----	TBD
096-098, 106-108, & 116-118	----	VOC	To preclude 401 KAR 51:017	Initial & Every 5 years	Methods approved by the Division	N/A	----	Emission Factor, Capture Efficiency, Control Efficiency, & Evaluate Throughput Limits	----	TBD
096-098, 106-108, & 116-118	Wet Scrubber	HF	To preclude 401 KAR 51:017	Initial & Every 5 years	Methods approved by the Division	N/A	----	Emission Factor, Capture Efficiency, & Control Efficiency	----	TBD
096-098, 106-108, & 116-118	Wet Scrubber	H ₂ SO ₄	To preclude 401 KAR 51:017	Initial & Every 5 years	Methods approved by the Division	N/A	----	Emission Factor, Capture Efficiency, & Control Efficiency	----	TBD
101, 111, & 121	----	Transfer Efficiency	To preclude 401 KAR 51:017	Initial & Every 5 years	Methods approved by the Division	N/A	----	Transfer Efficiency	----	TBD
123	----	PM	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 5	N/A	----	Emission Factor	----	TBD
123	----	PM ₁₀ / PM _{2.5}	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 201A/202	N/A	----	Emission Factor	----	TBD
123	----	NO _x	To preclude 401 KAR 51:017	Initial & Every 5 years	U.S. EPA Reference Method 7	0.80 tpy	----	Emission Factor	----	TBD

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A - Group Requirements:

Emission and Operating Limit	Regulation	Emission Unit
No person shall cause or permit the discharge of visible fugitive dust emissions beyond the lot line of the property on which the emissions originate	401 KAR 63:010, <i>Fugitive emissions</i> , Section 3(2)	Source-wide
Source-wide emissions of NOx shall not exceed 234.0 tpy on a 12-month rolling total basis	Preclusion of 401 KAR 51:017, <i>Prevention of Significant Deterioration</i>	Source-wide
Source-wide emissions of PM shall not exceed 225.0 tpy on a 12-month rolling total basis	Preclusion of 401 KAR 51:017, <i>Prevention of Significant Deterioration</i>	Source-wide
Source-wide emissions of PM ₁₀ shall not exceed 225.0 tpy on a 12-month rolling total basis	Preclusion of 401 KAR 51:017, <i>Prevention of Significant Deterioration</i>	Source-wide
Source-wide emissions of PM _{2.5} shall not exceed 225.0 tpy on a 12-month rolling total basis	Preclusion of 401 KAR 51:017, <i>Prevention of Significant Deterioration</i>	Source-wide
Source-wide emissions of VOC shall not exceed 225.0 tpy on a 12-month rolling total basis	Preclusion of 401 KAR 51:017, <i>Prevention of Significant Deterioration</i>	Source-wide
Addition of reactive flux is limited to 1% or less per batch on a mass basis	Preclusion of 401 KAR 51:017, <i>Prevention of Significant Deterioration</i> ** ** <i>Limiting flux restricts how much cleaning can occur with scrap and ensures that the melting and casting equipment does not become a defined Secondary Aluminum Facility, thus making the project one of the 28 source category facilities and subject to PSD.</i>	Cumulative addition for each set of Melting Furnace, Holding Furnace and in-Line Degasser. EUs, e.g. 001, 007 & 013; 002, 008 & 014; and 003, 009 & 015

Table B - Summary of Applicable Regulations:

Regulation	Basis of Determination	Emission Unit
401 KAR 50:012	<i>General application.</i> This KAR provides guidelines by which all administrative regulations of 401 KAR Chapters 50 to 65, are to be understood and “shall guide the cabinet in the issuance, modification, and revocation of permits.” The regulation specifies that in the absence of a specified standard, all major air contaminant sources shall, at a minimum, apply control procedures that are reasonable, available, and practical (RAP). Braidy examined the possible RAP controls for VOCs at the proposed facility. This led to the inclusion of an absorption system and post scrubber mist eliminators in the cold rolling mills section of the plant. It was also determined that work practices targeting VOC emissions minimization were appropriate RAP requirements.	EUs 049 - 052 and 061 - 065
401 KAR 59:010	<i>New process operations,</i> applicable to affected facilities or sources, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR Chapter 59, commenced on or after July 2, 1975.	All but EUs 023 - 030, 034 - 036, 135, 136, 137, 138
401 KAR 59:015	<i>New indirect heat exchangers,</i> applicable with regard to equipment with a heat capacity equal to or greater than 1 MMBtu/hr, that uses fuel combustion to produce energy that is transferred to its point of use through a medium that does not come in contact with, or add to, the products of the combustion.	EUs 066 - 085, 123
401 KAR 60:005, Section 2(2)(d), 40 C.F.R. 60.40c to 60.48c (Subpart Dc)	<i>Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units,</i> applicable to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 100 MMBtu/hr or less, but greater than or equal to 10 MMBtu/hr.	EU 123
401 KAR 60:005, Section 2(2)(dddd), 40 C.F.R. 60.4200 to 60.4219, Tables 1 to 8 (Subpart III),	<i>Standards of Performance for Stationary Compression Ignition Internal Combustion Engines,</i> applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE).	EUs 128, 129, 130, 131

Regulation	Basis of Determination	Emission Unit
401 KAR 63:002, Section 2(4)(ccc), 40 C.F.R. 63.1500 to 63.1519, Tables 1 to 3, and Appendix A (Subpart RRR)	<i>National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production</i> , applicable to affected sources located at a secondary aluminum production facility that is a major source of hazardous air pollutants.	EUs 001 - 003, 007 - 009, 013 - 015
401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ)	<i>National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines</i> , applicable to stationary RICE located at a major or area source of hazardous air pollutants.	EUs 28, 129, 130, 131
401 KAR 63:002, Section 2(4)(iii), 40 C.F.R. 63.7480 to 63.7575, Tables 1 to 13 (Subpart DDDDD)	<i>National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters</i> , applicable to affected sources located at a major source of hazardous air pollutants.	EUs 066 – 085
401 KAR 63:010	<i>Fugitive emissions</i> , applicable with respect to emission of fugitive emissions. Fugitive emissions are those released into open air rather than from a stack or control exhaust.	EUs 023 - 036, 101, 110, 121
401 KAR 63:020 State-Origin Requirement	<i>Potentially hazardous matter or toxic substances.</i> This regulation is applicable to each affected facility which emits or may emit potentially hazardous matter or toxic substances, provided such emissions are not elsewhere subject to provisions of an administrative regulation of the Division for Air Quality.	EUs 040 - 046, 049 - 054, 056 - 061, 063, 065 - 085
40 CFR 64	<i>Compliance assurance monitoring (CAM).</i> This regulation requires that sources monitor and maintain their control devices to ensure continuing compliance with emissions limitations. It is applicable to pollutant specific emission units (PSEU) that are subject to an emission limitation, use control devices to achieve compliance, and have pre-control emissions that exceed a major source threshold. Units at Braidy will require a CAM plan with the first submittal of an application for a significant permit revision affecting emission from a large PSEU or upon submittal of the first Title V renewal application.	EUs 063 - 065

Regulation	Basis of Determination	Emission Unit
40 CFR 98	<i>Mandatory Greenhouse Gas (GHG) Reporting.</i> This regulation applies to owners and operators of certain facilities that directly emit GHG as well as for certain suppliers. It specifically applies to the Braidy project because it does not meet the definitions of the GHG specific source category requirements, it has an aggregate (entire source-wide) maximum rated heat input for stationary sources greater than 30 MMBtu/hr, and it will emit over 25,000 metric tons of CO ₂ e from all stationary fuel combustion sources combined.	EUs 001 - 003, 007 -009, 023 - 036, 041 - 043, 055 - 060, 066 – 085, 094, 095 100, 104, 105, 110, 114, 115, 123, 128 - 134

Table C - Summary of Precluded Regulations:

Regulation	Basis of Determination	Emission Unit
401 KAR 51:017	<p><i>Prevention of significant deterioration of air quality.</i> This KAR provides for the prevention of significant deterioration (PSD) of ambient air quality. It is applicable to each unit of the project at a major new source that emits pollutants exceeding PSD significance levels and requires that a best available control technology (BACT) analysis be performed and controls (if feasible) be applied for the pollutant(s) at each emission unit. This regulation has been precluded by the source taking voluntary limits on emissions for PM, PM₁₀, PM_{2.5}, NO_x, VOC, to stay below total emissions of 250 tpy for each pollutant and thus remain a synthetic minor source with regard to PSD.</p> <p>Although CO must also stay below site-wide emissions of 250 tpy, this pollutant will not exceed the limit as long as NO_x emissions are limited to less than 250 tpy. Both of these pollutants are tied to fossil fuel combustion with the emission factors for NO_x generally at twice or more times that of CO emission factors.</p> <p>The restrictions taken must be enforceable as a practical matter, so the permit includes recordkeeping and recording requirements, emission limitation terms, and emission factor verification, and other testing requirements that ensure the limits will not be exceeded.</p> <p>Greenhouse Gases are treated differently under PSD. A project that has an increase of more than 75,000 tpy of CO₂e, but does not have emission increases of Non-GHG pollutants that trigger PSD requirements for those pollutants, does not trigger PSD requirements for the GHGs. Before GHGs are subject to PSD requirements, the pollutant increases at the facility must trigger PSD for at least one of the criteria pollutants. Therefore, 401 KAR 51:017 is not triggered for GHG emissions for the Braidy project despite a CO₂e emission increase of greater than 231,000 tpy.</p>	All Except EU 139 (Roads)

Table D - Summary of Non Applicable Regulations:

Regulation	Basis of Determination	Emission Unit
401 KAR 60:005, Section 2(2)(zz), 40 C.F.R. 60.460 to 60.466 (Subpart TT)	<i>Standards of Performance for Metal Coil Surface Coating</i> , applicable to each prime coat operation, each finish coat operation, and each prime and finish coat operation combined when the finish coat is applied wet on wet over the prime coat and both coatings are cured simultaneously and that commenced after January 5, 1981. This NSPS regulation does not apply to the Braidy project because all of the coatings applied to the surface of the aluminum metal strip processed in the CASH Lines are either protective lubricants, acids, or bases. This exempts each CASH line from applicability of the requirements of Subpart TT.	EUS 92, 94 - 98, 100 - 102, 104 - 108, 110 - 112, 114 - 118, 120, 121
401 KAR 63:002, Section 2(4)(j), 40 C.F.R. 63.400 to 63.407, Table 1 (Subpart Q)	<i>National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers</i> . This regulation is not applicable to the Braidy project because the cooling towers will not use any chromium-based treatment chemicals. This is an exemption from applicability of this rule.	EUS 124 - 127
401 KAR 63:002, Section 2(4)(xxx), 40 C.F.R. 63.5080 to 63.5200, Tables 1 to 2 (Subpart SSSS)	<i>National Emission Standards for Hazardous Air Pollutants: Surface Coating of Metal Coil</i> . This regulation is not applicable to the Braidy project because all of the coating applied to the aluminum strips processed through the CASH Lines of the Strip Processing Plant are protective lubricants, acids, or bases rather than permanent primer or finish coatings. This exempts each CASH line from applicability of this rule.	EUS 92, 94 - 98, 100 - 102, 104 - 108, 110 - 112, 114 - 118, 120, 121
401 KAR 63:002, Section 2(4)(vvvvv), 40 C.F.R. 63.11514 to 63.11523, Tables 1 to 2 (Subpart XXXXXX)	<i>National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories</i> . The rule is not applicable to the Braidy facility because it is not classified under any of the SIC codes regulated by this Subpart.	EUS 92, 94 - 98, 100 - 102, 104 - 108, 110 - 112, 114 - 118, 120, 121

Air Toxic Analysis

The Division for Air Quality (Division) completed SCREEN View air dispersion modeling on March 16, 2018, for potentially hazardous matter or toxic substances Manganese and Manganese Compounds, Vanadium, and Sulfuric Acid (H₂SO₄) that may be emitted by the facility using the process rates, material formulations, stack heights and other pertinent information provided by the applicant. Based upon this information, the Division has determined that the conditions outlined in this permit will assure compliance with the requirements of 401 KAR 63:020, *Potentially hazardous matter or toxic substances*. Some other potentially hazardous matter or toxic substances in the emissions from this site, such as hydrogen fluorides, were examined in air dispersion modeling submitted with the application and were found to comply with both 401 KAR 63:020, *Potentially hazardous matter or toxic substances*, and 401 KAR 53:010, *Ambient Air Quality Standards*.

Single Source Determination

N/A

SECTION 5 – PERMITTING HISTORY

Permit	Permit type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
V-18-001	Initial	APE20180001	3/23/2018		Initial Construction Permit	Synthetic Minor

SECTION 6 – PERMIT APPLICATION HISTORY
None

APPENDIX A – ABBREVIATIONS AND ACRONYMS

AAQS	– Ambient Air Quality Standards
BACT	– Best Available Control Technology
Btu	– British thermal unit
CAM	– Compliance Assurance Monitoring
CO	– Carbon Monoxide
Division	– Kentucky Division for Air Quality
ESP	– Electrostatic Precipitator
GHG	– Greenhouse Gas
HAP	– Hazardous Air Pollutant
HF	– Hydrogen Fluoride (Gaseous)
MSDS	– Material Safety Data Sheets
mmHg	– Millimeter of mercury column height
NAAQS	– National Ambient Air Quality Standards
NESHAP	– National Emissions Standards for Hazardous Air Pollutants
NO _x	– Nitrogen Oxides
PM	– Particulate Matter
PM ₁₀	– Particulate Matter equal to or smaller than 10 micrometers
PM _{2.5}	– Particulate Matter equal to or smaller than 2.5 micrometers
PSD	– Prevention of Significant Deterioration
PTE	– Potential to Emit
SO ₂	– Sulfur Dioxide
TF	– Total Fluoride (Particulate & Gaseous)
VOC	– Volatile Organic Compounds