

Metal Technologies Inc. - Ravenna Ductile Iron

RDI Air Pollution Control Plan Supporting Information

DCN: WI-EN-004

Revision Date: 3/4/2021

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1. General

- 1.1. The following contains information required to be maintained by one or more regulations. This information is maintained separately from the Air Pollution Control Plan as it contains foundational information that is required to be maintained, yet is not necessarily required for the day-to-day operations of the facility.
- 1.2. Contains specifics related to the development of the Compliance Assurance Monitoring (CAM) Plan (contained in RDI's Air Pollution Control Plan).
- 1.3. Additional information can be found in the facility's air permit and Air Pollution Control Plan.

2. Compliance Assurance Monitoring Plan

2.1. Plan for Pollutant-Specific Emission Units ("PSEU") Utilizing a Baghouse to Control Particulate Matter Emissions

2.1.1. Background

2.1.1.1. Emissions Units:

2.1.1.1.1. Descriptions (Identification): EU-MELTING, EU-POURING, EU-COOLING, EU-SHAKEOUT, EU-SANDSYSTEM, & EU-CLEAN

2.1.1.2. Applicable Regulation, Emission Limits, and Monitoring Requirements

2.1.1.2.1. Regulations: 40 CFR 64; R 336.1213(3), R 336.2001, R 336.2003, R 336.2004

2.1.1.2.2. Emissions Limits:

Emission Unit	APCE	Limits			
		Lbs/1000lbs exhaust gas, dry	Lbs/Hr	T/Yr	% Opacity
EU-MELTING (limits include preheater & inoculation as well)	East & West Melt Baghouses	.01	2.5	10.95	5
EU-POURING	East & West Sand Baghouses	.01	6.0	26.3	5
EU-COOLING					
EU-SHAKEOUT					
EU-SANDSYSTEM					
EU-CLEAN	West Blast Baghouse	.01	2.2	9.6	5

2.1.1.2.3. Monitoring Requirements:

2.1.1.2.3.1. Differential Pressure, Visible Emissions Readings

2.1.1.3. Control Technologies:

2.1.1.3.1. Fabric Filters:

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APCE	Type	Nominal Volume
East/West Melt	Pulse Jet	70,000 cfm
East/West Sand	Pulse Jet	141,000 cfm
West Blast	Pulse Jet	70,000 cfm

2.1.2. Monitoring Approach

2.1.2.1. Indicators, Measurement Approach, and Allowable Ranges:

Emission Unit	APCE	Indicator	Method	Range
EU-MELTING	East & West Melt Baghouses	Diff Pressure	DP Gauge	East: 1-10" water West: 2-10" water
		Visible Emissions	Reading	Normal / Abnormal
		Particulate	BBD	See BBD Plan
EU-POURING EU-COOLING EU-SHAKEOUT EU-SANDSYSTEM	East & West Sand Baghouses	Diff Pressure	DP Gauge	East: 2-10" water West: 2-10" water
		Visible Emissions	Reading	Normal / Abnormal
		Particulate	BBD	See BBD Plan
EU-CLEAN	West Blast Baghouse	Diff Pressure	DP Gauge	2-10" water
		Visible Emissions	Reading	Normal / Abnormal

2.1.2.2. Data Representativeness:

2.1.2.2.1. Measurements are taken at the source:

2.1.2.2.1.1. Differential Pressures – one port in the clean side and one port in the dirty side of the baghouse. Each gauge has a minimum sensitivity of +/- 20% of full scale.

2.1.2.2.1.2. BLDS – probes located in the downcomer or stack of the baghouse. The BLDS is certified by the manufacturer to be capable of detecting emissions of PM at a concentration of .10 mg/m³ or less.

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- 2.1.2.3. Verification of Operational Status:
 - 2.1.2.3.1. Differential pressure is measured continuously and recorded once per day to verify systems are operating as designed.
 - 2.1.2.3.2. Particulate loading is measured continuously and recorded at least every 10 seconds to verify systems are operating as designed.
- 2.1.2.4. QA/QC Practices and Criteria:
 - 2.1.2.4.1. Pressure gauges are checked/calibrated at least semiannually. If they cannot be reset to operate within the above sensitivity requirements, they are replaced.
 - 2.1.2.4.2. BLDS is cleaned and tested monthly and a zero check is performed annually.
- 2.1.2.5. Monitoring Frequency
 - 2.1.2.5.1. Differential pressure is measured continuously and recorded once per day to verify systems are operating as designed.
 - 2.1.2.5.2. Particulate loading is measured continuously and recorded at least every 10 seconds to verify systems are operating as designed.
 - 2.1.2.5.3. Data is maintained in the facility's datalogging system and Preventive Maintenance records.
- 2.1.3. Monitoring Approach Justification
 - 2.1.3.1. Foundry processes subject to CAM at the facility primarily emit particulate matter ("PM") as the primary pollutant. This includes PM, PM10, and PM2.5.
 - 2.1.3.2. RDI utilizes baghouses as the primary means of controlling the amount of PM emitted.
 - 2.1.3.3. Baghouses are generally recognized as the most appropriate method of controlling PM emissions by industry and regulators alike. For example, EPA has set (and retained through the 2018 RTR) an emission limit of .005 gr/dscf for existing electric induction furnaces (40 CFR 63.7690(a)(1)(i)). Well designed and maintained baghouses routinely achieve levels down to .003 gr/dscf and below. Also, baghouses have been determined as Best Available Control Technology (BACT) during many Prevention of Significant Deterioration (PSD) determinations, further verifying their appropriateness for PM control.
 - 2.1.3.4. Pressure drop, visible emissions, and particulate loading were chosen as the appropriate indicators during the facility's initial and/or subsequent air permitting actions. An increase in any of these indicators can indicate a control system that is not operating properly, typically due to blockages, improper pulse frequency, or plugged filters. A decrease in the differential

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pressure indicator can indicate that the system has lost some resistance to air flow, possibly due to holes in the equipment or filters. The parameters also serve to verify sufficient airflow through the system, ensuring enough volume is present to collect emissions.

2.1.3.5. The indicator levels have been verified during performance testing as being protective of emission limits.

3. Associated documents/resources

- 3.1. Environmental SharePoint Site
- 3.2. Environmental SharePoint Library
- 3.3. WI-EN-003 RDI Air Pollution Control Plan
- 3.4. RDI Air Permit MI-ROP-N5866-2019

Revision Date	Description of Changes
3/4/2021	Document Creation

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