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REVISED
COMPLIANCE ASSURANCE MONITORING RULE SUPPLEMENT

TO

MELT SHOP BAGHOUSE INTEGRATED PLAN

BREMBO NORTH AMERICA FOUNDRY
HOMER, MICHIGAN

RPS PROJECT NO. 211727

FORWARD

The information presented in this document is intended to be used a supplement to that which is provided in the Melt Shop Integrated Plan, and to fulfill applicable "submittal requirements" of Compliance Assurance Monitoring Rule (CAM Rule) requirements (40 CFR 64.4).

The integrated plan addresses both Michigan's Malfunction Abatement Plan (R 336.1911) requirements; and USEPA's National Emission Standards for Hazardous Air Pollutants (NESHAP) for Iron and Steel Foundries [40 CFR Part 63, Subpart EEEEE (5E NESHAP)]. State and federal requirements addressed in the integrated plan include those relating to operation & maintenance; inspection; preventative maintenance; site-specific monitoring for bag leak detection; correction action plan; malfunction abatement; and startup, shutdown and malfunction.

This supplemental provides incremental additions to augment CAM Rule-relevant information presented in the integrated plan, so as to ensure all required, currently-availably information to address CAM Rule applicable submittal requirements.

I. BACKGROUND

A. Emission Units

EUINDUCTION1 (electric induction melting furnace - 13.2 ton charge capacity)
EUINDUCTION2 (electric induction melting furnace - 13.2 ton charge capacity)
EUINDUCTION3 (electric induction melting furnace - 13.2 ton charge capacity)
EUINDUCTION4 (electric induction melting furnace - 13.2 ton charge capacity)

B. Applicable Requirements Summary

Permit Number:	PTI No. 199-14C
Pre-Control Emissions:	622 tpy PM (estimated) 31 tpy PM10 (estimated) 16 tpy PM2.5 (estimated)
CAM Rule Applicability:	Other Pollutant-Specific Emission Unit for PM
Emission Limits Subject to CAM:	2.20 pph PM 5.60 tpy PM
Monitoring Requirements:	5E NESHAP-required monitoring for PM: Bag Leak Detection System (BLDS)

C. Control Technology

The Melt Shop Baghouse is comprised of two pulse-jet "cells" (modules), each with an inline spark arrestor and a dedicated 250 HP fan rated at 61,000 acfm each (nominal). Each cell exhausts via a common stack, the outlet of which is equipped with a 5E NESHAP-required BLDS (i.e., a CMP 750).

II. MONITORING APPROACH

<table>
<tr><th></th><th>Pressure Drop (in H2O)</th><th>Optical Scintillation (%)</th></tr>
<tr><td>A. Indicator:</td><td>Pressure drop across the baghouse is continuously measured with a differential pressure gauge, and communicated to a Distributed Control System (DCS) and recorded on a Supervisory Control and Data Acquisition (SCADA) system.</td><td>Variations in visible light beam intensity caused by the movement of particles in the exhaust stack are continuously measured with a CPM 750, a parametric monitoring system (CPMS) for PM emissions. Monitor readings are communicated to a Distributed Control System (DCS) and recorded on a Supervisory Control and Data Acquisition (SCADA) system.</td></tr>
<tr><td rowspan="3">B. Indicator Range</td><td colspan="2">A potential excursion investigation will be conducted and documented for any 1-hour period during which the recorded indicator value is:</td></tr>
<tr><td>< 3.5 in H2O, or
> 8.5 in H2O</td><td>> 65%</td></tr>
<tr><td colspan="2">If an applicable emission limit is found to have been surpassed during any such period, excess emissions reporting will be conducted in accordance with the procedures in Section 7.4.1 in the Melt Shop Integrated Plan.</td></tr>
<tr><td>C. QIP Threshold</td><td>Optional (none selected).</td><td>Optional (none selected).</td></tr>
</table>

III. PERFORMANCE CRITERIA

<table>
<tr><th></th><th>Pressure Drop (in H2O)</th><th>Optical Scintillation (%)</th></tr>
<tr><td>A. Measurement Approach:</td><td>Pressured is measured at across the baghouse, at the inlet and outlet of each module. The gauge has an accuracy of 0.1 in H2O.</td><td>Optical scintillation (% baseline) is measured in the baghouse exhaust stack. The device has an accuracy of +/- 1%.</td></tr>
<tr><td>B. Verification of Operational Status</td><td colspan="2">NA – monitoring equipment is not new or modified.</td></tr>
<tr><td>C. QA/QC Practices and Criteria</td><td colspan="2">Consistent with manufacturer's recommendations.</td></tr>
<tr><td>D. Monitoring Frequency</td><td>Continuous</td><td>Continuous</td></tr>
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E. Data Collection Procedure	See II.A above.	See II.A above.
F. Averaging Period	10 minutes	10 minutes

IV. JUSITIFCATION

A. Rational for Selection of Performance Indicators

Pressure Drop

In general, baghouses are designed to operate at a relatively constant pressure drop. Monitoring pressure drop provides a means of detecting a change in operation that could lead to an increase in emissions. An increase in pressure drop can indicate that the cleaning cycle is not frequent enough, cleaning equipment is damaged; the bags are becoming inefficient; or the airflow has increased. A decrease in pressure drop may indicate broken or loose bags, which could possibly to contribute to increased particulate matter emissions. A pressure drop across the baghouse also serves to indicate that there is airflow through the control device.

Optical Scintillation

Optical scintillation is a generally recognized surrogate parameter for particulate matter emissions. Continuously monitoring variations in a transmitted light beam across the exhaust stack diameter provide real-time indications of changes in particulate matter concentrations in the baghouse outlet gas stream.

B. Rational for Selection of Indicator Ranges

Pressure Drop

The baghouse manufacturer initially suggested a pressure drop range of 3.5 to 8.5 in H2O as an optimal range.

Optical Scintillation

The value is based on the manufacturer recommendations, which Brembo has also adopted (as interim value), pending completion of the next emissions testing campaign (in mid-2021), and development of updated indicator ranges.

Brembo reserves the right to further evaluate and adjust these indicator ranges, primarily in the context of the next required emissions testing, which is tentatively scheduled for the mid-2021 timeframe.

C. Performance Test

The next required emissions testing is tentatively scheduled for the mid-2021 timeframe. Selected indicator parameter ranges will be further evaluated in conjunction with that testing campaign.

Data obtained during the two prior testing campaigns did not appear to provide an appropriate for developing representative, coherent correlations between concurrent emissions measurements, process parameters, and indicator readings.