# Malfunction Abatement Plan (S-ENV-4443, Rev. A)

Malfunction Abatement Plan for:
East Jordan Foundry, LLC (EJF)
2675 N. US 131
Elmira, Michigan

As required by:
Michigan Rule 336.1911 and
40 CFR, Part 63, Subpart ZZZZZ, National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources

May 2019

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## Revisions to the Malfunction Abatement Plan

| Date | Section(s) | Description |
|---|---|---|
| May 2019 | All | Initial issuance of document |

## 1.0 INTRODUCTION

East Jordan Foundry, LLC (EJF) is subject to Michigan's Rule 336.1911 (also known as Rule 911) and 40 CFR, Part 63, Subpart ZZZZZ, National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources (also known as Area Source Foundry MACT), for Malfunction Abatement Plan and Operation and Maintenance Plan requirements, respectively. Because the facility is subject to both regulations, this Malfunction Abatement Plan (MAP) will incorporate the requirements of Operation and Maintenance Plan, as allowed in §63.10896(b).

The MAP must be submitted to MDEQ, implemented and maintained within 60 days of achieving the maximum production rate but not later than 180 days after initial startup of the facility. Per §63.10880 (b)(2), EJF is a "new affected source" as construction was started after September 17, 2007. Per §63.10881(c) as a "new" affected source, the East Jordan Foundry has achieved compliance with the applicable provisions of Subpart ZZZZZ including implemented the requirements of the O&M Plan upon startup.

This MAP will include the following:

a) A complete operation and preventative maintenance program, including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.
d) A site-specific monitoring plan for each bag leak detection system.

### 1.1 Purpose

The purpose of MAP is to:

- Ensure that each affected source, including associated air pollution control and monitoring equipment, is operated in a manner that satisfies the general duty to minimize emissions;
- Ensure preparations have been made to correct malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of hazardous air pollutants.

## 2.0 OPERATION AND PREVENTIVE MAINTENANCE (OPM) PROGRAM REQUIREMENTS

The complete operation and preventative maintenance (OPM) program includes the following:

- Facility Information and Contacts
- Equipment Descriptions
- Preventive Maintenance and Inspection Schedules
- Major Replacement Parts Cost
- Work Order System
- Preventive Maintenance System

### 2.1 Facility Information and Contacts [R 336.1911(2)(a) and §63.10896(a)(1)]

Table 1 details facility information and contacts for EJF.

**Table 1 – Facility Information and Contacts**

| | |
|---|---|
| Site Name and Address: | East Jordan Foundry, LLC<br>2675 N. US 131<br>Elmira, MI 49730 |
| Corporate Mailing Address: | EJ USA, Inc.<br>301 Spring St.<br>East Jordan, MI 49727 |
| Facility Manager: | Scott Nachazel<br>231-536-4531<br>scott.nachazel@ejco.com |
| Manufacturing Manager | Ted Rundblad<br>231-536-4553<br>ted.rundblad@ejco.com |
| Engineering and Maintenance Manager* | Darin Spearman<br>231-536-4866<br>darin.spearman@ejco.com |
| Environmental and Safety Manager | Tom Lenartowicz<br>231-536-4823<br>tom.lenartowicz@ejco.com |
| Environmental Services Manager | Tony Pitts<br>231-536-4663<br>tony.pitts@ejco.com |

***The Maintenance Department, under direction of the Facility Manager and Engineering and Maintenance Manager, is ultimately responsible for inspecting, maintaining, and repairing emissions control devices and their associated production processes. [R 336.1911(2)(a) and §63.10896(a)(2)]**

### 2.2 Equipment Descriptions [R 336.1911(2)(b) and §63.10896(a)(3)]

East Jordan Foundry, LLC (EJF) operates a gray and ductile iron foundry. The foundry operation includes four (4) electric induction furnaces, providing molten iron to two (2) molding lines, and auxiliary equipment and processes.

Table 2 describes the affected emission units and Table 3 shows which baghouse services which emission unit, along with its continuous parameter monitoring system (CPMS).

**Table 2 – Emission Units and Descriptions**

| Emission Unit ID | Emission Unit Description |
|---|---|
| EUCHRGHAND | Charge Handling - The handling and storage of furnace charge material include internal returns (e.g. sprue, scrap), incoming scrap metal, alloy materials, inoculants, fluxes, etc. |
| EUDUCTINOC | Ductile Inoculation - An addition of magnesium-based material to strengthen the metal when cast. |
| EUMLTXFER | Hot Metal Transfer - The transfer of hot metal in a ladle (transfer ladle) from the electric induction furnaces to the pouring operations. |
| EUSHMM | Sand Handling and Moldmaking – Includes Moldmaking and application of mold release. |
| EUEIF1, EUEIF2, EUEIF3, EUEIF4 | Electric Induction Furnace Melting – Electric Induction Furnaces (EIF) to melt and process charge material. Design holding capacity 11 tons each. |
| EULMLPC | Large Mold Line Pouring and Cooling - The pouring and subsequent cooling of molten metal cast in a sand mold on the Large Mold Line. The mold and casting is subsequently transferred to the LML Shakeout. |
| EU1230PC | 1230 Line Pouring and Cooling -The pouring and subsequent cooling of molten metal cast in a sand mold on the 1230 Line. The mold and casting is subsequently transferred to 1230 Line Shakeout. |
| EULMLSO | Large Mold Line Shakeout - The separation of mold and core sand from the casting. Sprue is subsequently transferred to Charge Handling, while mold and core sand is discharged to conveyors that are part of Sand Handling and Moldmaking. |
| EU1230SO | 1230 Line Shakeout - The separation of mold and core sand from the casting. Sprue is subsequently transferred to Charge Handling, while mold and core sand is discharged to conveyors that are part of Sand Handling and MoldMaking. |
| EUWASTESAND | Waste Sand Dust Handling - The removal and disposition of spent sand from the system. |
| EUBLAST | Shotblasting - Enclosed process for the removal of excess sand and metal from casting surface. |
| EUGRIND | Grinding - Remove of unwanted metal at the mold parting lines and elsewhere. |
| EULDLREPAIR | Ladle Repair - The removal and replacement of ladle refractory used to protect the ladle from the heat of the molten metal. |
| EUPUNBCM | Phenolic Urethane No Bake (PUNB) Coremaking - After sand is heated to promote the reaction, a two-part resin system and a single liquid catalyst is mixed with the sand. After mixing the sand is distributed to the pattern. A release agent to promote core removal may be applied to the pattern prior to forming the core. |
| EUSHELLCM | Shell Coremaking - Resin coated sand is fed to a pattern that is preheated and coated with a release agent. Heat from the pattern cures the sand mix into the desired shape. |

**Table 3 – Baghouses and Associated Emission Units**

| Baghouse ID | Continuous Parameter Monitoring System (CPMS) | Emission Unit ID |
|---|---|---|
| SVAB-BH | Differential pressure gauge, baghouse leak detection system (BLDS) | EUCHRGHAND, EUDUCTINOC, EUMLTXFER, EUSHMM, EUEIF1, EUEIF2, EUEIF3, EUEIF4, EULMLPC, EU1230PC |
| SVC-BH | Differential pressure gauge | EULMLSO, EU1230SO |
| SVD-BH | Differential pressure gauge | EULMLPC, EU1230PC, EULMLSO, EU1230SO |

| Baghouse ID | Continuous Parameter Monitoring System (CPMS) | Emission Unit ID |
|---|---|---|
| SVE-BH | Differential pressure gauge | EUCHRGHAND, EUSHMM, EULMLSO, EU1230SO |
| SVF-BH | Differential pressure gauge | EUSHMM |
| SVG-BH | Differential pressure gauge | EUSHMM |
| SVHJ-BH | Differential pressure gauge | EUWASTESAND, EUBLAST, EUGRIND, EUCHRGHAND |
| SVK-BH | Differential pressure gauge | EUCHRGHAND, EULDLREPAIR |
| SVL-BH | Differential pressure gauge | EUPUNBCM, EUSHELLCM |

### 2.3 Preventive Maintenance and Inspection Schedules [R 336.1911(2)(a-b) and §63.10896(a)(3)]

Table 4 details the inspection and preventive maintenance schedule for all the baghouses listed in Table 3. The Manufacturers Specifications for the baghouses are attached in Appendix A. Any defect or deficiency in the capture system must be repaired as soon as practicable, but no later than 30 calendar days. The date and results of each inspection and the date of repair of any defect or deficiency will be recorded in the Computerized Maintenance Management System (CMMS) and by using the Malfunction Report, located in Appendix B.

**Table 4 – Baghouse - Inspection and Preventative Maintenance Schedule (Revised**

| Frequency | Task |
|---|---|
| Every Calendar Month | Ductwork<br>• Visual inspections of the system ductwork for leaks, holes, flow constrictions, and accumulated dust<br>Fan<br>• Visual inspection of fan for signs of erosion or fatigue |
| Every 6 months | Interior of Baghouse<br>• Visual inspections of the interior of the baghouse for structural integrity and to determine the condition of the fabric filter |
| Every 3 Months | Filter bag<br>• Visual inspection of the cleaned process gas chamber for dust discharge on the slotted wall<br>• Replace defective filter bags |
| Every 3 Months | Cleaning nozzle connection<br>• Check for ease of motion and, if necessary, replace ball bearings<br>• When cleaning air radial fan in operation: Check for leaks at the cleaning nozzle connection and, if necessary, replace seals |
| Every 3 Months | Cleaning nozzle sliding lining<br>• Check for abrasion and damage, if possible, in the end position of the cleaning car, and, if necessary, replace<br>• Check distance between slotted wall and cleaning nozzle sliding lining and, if necessary, re-adjust |
| Every 3 Months | Cleaning car<br>• Check rollers for ease of motion and abrasion and, if necessary, replace<br>• Re-adjust rollers in case of too large clearance |
| Every 3 Months | Drive station<br>• Check chain wheel for abrasion and, if necessary, replace |

| Frequency | Task |
|---|---|
| Every 3 Months | Deflecting station<br>• Check indexing disc for proper functioning |
| Every 3 Months | Link chain<br>• Check for abrasion and damage and, if necessary, replace<br>• Check chain tension and, if necessary, retighten |
| Every 3 Months | Traction rope<br>• Check for abrasion and damage and, if necessary, replace |

Table 5 details the inspection and maintenance schedule for each emergency generator. The Manufacturers Specifications for the emergency generators are attached in Appendix A.

**Table 5 – Emergency Generators - Inspection and Preventative Maintenance Schedule**

| Frequency | Task |
|---|---|
| Annually | PM Level 1 Annual Inspection<br>• Sample oil<br>• 72-point inspection<br>To be completed by Michigan CAT or other authorized service provider. |
| Annually | PM Level 2 Annual Inspection<br>• Sample oil<br>• 72-point inspection<br>• Oil change and oil filter change<br>To be completed by Michigan CAT or other authorized service provider. |
| Annually | 4 Hour Annual Load Bank Test<br>• Load Bank test will apply a load to the generator that will test its overall condition; testing the fuel system, power output, voltage regulation, leaks and overheat condition. Load bank test also removes any wet stacking conditions present.<br>To be completed by Michigan CAT or other authorized service provider, in conjunction with the PM Level 1 or 2 Annual Inspection. |

Table 6 details the inspection schedule for each differential pressure gauge listed in Table 3. The Manufacturers Specifications for the differential pressure gauges are attached in Appendix A.

**Table 6 – Differential Pressure Gauge - Inspection and Preventative Maintenance Schedule**

| Frequency | Task |
|---|---|
| Monthly | Visual inspection of the gauge and pressure lines. Repair any defect or deficiency in the system as soon as practicable. |
| Annually | Disconnect pressure lines to vent both sides of gauge to atmosphere and re-zero. Recalibration per OEM Manual. |

Table 7 details the inspection and preventative maintenance schedule for the baghouse leak detection system (BLDS) on SVAB-BH. The Manufacturers Specifications for the BLDS are attached in Appendix A. [R 336.1911(2)(b) and §63.10896(a)(5)]

**Table 7 – BLDS - Inspection and Preventative Maintenance Schedule**

| Frequency | Task |
|---|---|
| Monthly | Internal Self Check |

| Frequency | Task |
|---|---|
| | • Built-in self-check circuitry is enabled every time the unit is powered up, ensuring the units integrity.<br>• The procedure for this test is to remove the sensing head from the stack, disconnect the probe shaft, power down for a period of 30sec to enable the built-in self-check. While the device is conducting the internal self-check the mA output will be at 5mA, this will last about 30sec.<br>• If the result of the internal self-check fails, then the instrument will fail to 3.8mA and hold this value until rectified (please see fault-finding for possible remedies). |
| Monthly | Inspection<br>• Visual inspection to ensure that the system is good working order.<br>• As these devices are typically mounted outdoors inspection of cabling, moisture ingress and general condition of the monitor is vital.<br>• Things to look for are:<br>o Moisture ingress into the body of the monitor.<br>o Warn of frayed cabling.<br>o Any burn marks on termination.<br>o Tightening of all screws (terminals, lid, probe shaft etc.)<br>o Particulate build-up on the sensor front end and probe shaft. |

### 2.4 Major Replacement Parts Cost [R 336.1911(2)(a) and §63.10896(a)(4)]

EJF maintains a spare parts inventory for routine and critical equipment and instrumentation. Spare parts and replacement instruments are kept in the EJF maintenance crib. The details the major replacement parts for the proper operation of the baghouses and CPMS, estimated cost of the parts, and quantity to be kept on-hand are kept in the Computerized Maintenance Management System (CMMS). Parts identified as critical to operation of the baghouse or CPMS are stocked in inventory. Minimum quantities will be maintained on-hand.

### 2.5 Work Order System

Work order requests, concerning repairs to air pollution control equipment or process equipment that can affect air pollution control, can be generated by anyone familiar with the operation of the air pollution control equipment. Irregularities in operations, as evident from routine inspections and preventive maintenance tasks, as presented in Tables 4 through 7, will result in a work order request being generated. The Maintenance Superintendent or Maintenance Supervisors or their designee will assign a level of priority to the work order request.

The Maintenance Superintendent or Maintenance Supervisor or designee then decides on a course of action and assigns resources to resolve the work order in a manner consistent with the requirements this MAP.

### 2.6 Preventive Maintenance System

To assist in ensuring necessary repairs are addressed as soon as practicable, EJF utilizes a Computerized Maintenance Management System (CMMS) to administer and schedule preventive and corrective maintenance for APC equipment. The CMMS work order system provides:

- Systematic screening and authorization of requested work
- Necessary information for planning and coordinating future work
- Cost information for future planning
- Instructions for management and maintenance personnel in the performance of repairs
- Identification of the equipment that needs to be maintained

- Records of maintenance work performed

The CMMS organizes and manages the frequency based on past operating experience and performance history. EJF updates the information in CMMS based on new operating experience and equipment history. For example, the frequency and scope of specific maintenance task may be modified, in accordance with applicable regulation, if EJF determines that these changes will maintain proper equipment operation in the future.

Tables 4 through 6 present the inspection and preventive maintenance schedule for the APC devices and monitoring equipment that is consistent with any applicable manufacturer's instructions. This schedule is subject to change, following obtaining any necessary approval, if EJF determines that less frequent maintenance is warranted.

## 3.0 AIR POLLUTION CONTROL DEVICE (APCD) OPERATING VARIABLES [R 336.1911(2)(B)]

Table 9 details the source and air pollution control device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.

**Table 8 – Pressure Gauge Operating Variables**

| Equipment | Normal Operating Range | Alarm to Sound | Monitoring Frequency | Averaging Periods |
|---|---|---|---|---|
| Differential pressure gauge on baghouses | < 10.0 inches of water column | > 10.0 inches of water column | Continuous (recorded value is logged once per shift) | N/A |

## 4.0 CORRECTIVE ACTIONS PROGRAM REQUIREMENTS [R 336.1911(2)(C)]

Corrective actions are actions to correct a malfunction.

A malfunction is defined as a sudden or infrequent failure, or failure that is not reasonably preventable, or an event that causes the process to not operate in a normal or usual manner which is not caused in part by poor maintenance or careless operation.

When a malfunction occurs, a Malfunction Report located in Appendix B (or a similar electronic format) will be completed.

### 4.1 Corrective Action Procedures

When the CPMS or process equipment has a malfunction, the equipment or instrumentation must be repaired or replaced as soon as practicable. If able to do so in a safe manner, the processes equipment must also be shut down until the repairs have been made. The below corrective action procedures must be initiated when visible emissions are observed or a process malfunctions or an operating parameter deviates from the value or range listed in Table 8.

**If Visible Emission are Detected - Corrective Action Procedure**

1. During the daily visible emission checks, the Environmental and Safety Manager or their designee will conduct a non-certified visual emission reading to determine the baghouse(s) that is (are) malfunctioning, and if visible emissions are observed, they will notify the Maintenance Department and initiate a Malfunction Report.
2. Maintenance will notify the appropriate department to stop the associated process. If Maintenance believes that the malfunction cannot be stopped immediately, consult with the Facility Manager, Environmental and Safety Manager, and FES Environmental to consider immediate shutdown. If it is decided that shutdown is the best option, safety of facility personnel and the protection of assets will take precedence over any air release.
3. If the process is able to be shut down, Maintenance will close/lockout the baghouse(s) that appear to be malfunctioning.
4. Maintenance or their designee will conduct another non-certified visual emission reading to determine if the visible emissions have stopped.
    a. If visible emissions have stopped, Maintenance will initiate corrective actions to fix the malfunction.
    b. If the visible emissions have NOT stopped, Maintenance will conduct a Method 9 visual emission reading (must at least conduct the Method 9 visual emission reading a minimum of ½ hour).
5. Maintenance will conduct the necessary repairs/replacements.
6. Maintenance will notify the appropriate department that the affected process(es) can go back into operation.
7. Maintenance will check to make sure the corrective action was effective and will finish filling out the Malfunction Report for the malfunction.

**CPMS Alarm due to a Process Malfunction - Corrective Action Procedure**

1. If a CPMS alarms, Maintenance will initiate a Malfunction Report.
2. Maintenance will determine if the alarm is contributed to malfunctioning process equipment or due to malfunctioning CPMS.
3. If due to malfunctioning process equipment; then
    a. Maintenance will notify the appropriate department to stop the associated process. If Maintenance believes that the malfunction cannot be stopped immediately, consult with

the Facility Manager, Environmental and Safety Manager, and FES Environmental to consider immediate shutdown. If it is decided that shutdown is the best option, safety of facility personnel and the protection of assets will take precedence over any air release.

b. Once the process is able to be shut down, Maintenance will close/lockout the baghouse(s) that appear to be malfunctioning.

4. Maintenance will conduct the necessary repairs/replacements.
5. Maintenance will notify the appropriate department that the affected process(es) can go back into operation.
6. Maintenance will check to make sure the corrective action was effective and will finish filling out the Malfunction Report for the malfunction.

**CPMS Alarm due to a CPMS Malfunction - Corrective Action Procedure**

1. If a CPMS alarms, Maintenance will initiate a Malfunction Report.
2. Maintenance will determine if the alarm is contributed to malfunctioning process equipment or due to malfunctioning CPMS.
3. If due to malfunctioning CPMS; then Maintenance will conduct the necessary repairs/replacements.
4. Maintenance will check to make sure the corrective action was effective and will finish filling out the Malfunction Report for the malfunction.

Follow-up actions should be taken to return operating parameters to levels listed in the Table 8. Follow-up actions should also include measures to prevent the recurrence of deviations from operating parameter values or ranges and a system to record the actions taken to correct the malfunction. The cause of the malfunction, the actions taken during the malfunction, as well as the time the malfunction began and ended, will be recorded on the Malfunction Report provided in Appendix B or electronic submittal.

When the BLDS has a malfunction, in addition to the procedure above, the corrective action procedures must be consistent with the procedures listed in Section 5.6 of this MAP.

## 5.0 SITE SPECFIC MONITORING PLAN [§63.10896(A)(5)]

This section of the MAP will act as a site-specific monitoring plan for the bag leak detection system. EJF will always operate and maintain each bag leak detection system according to this plan . This site-specific monitoring plan must address all of the following items:

1. Installation of the bag leak detection system.
2. Initial and periodic adjustment of the bag leak detection system including how the alarm set-point will be established.
3. Operation of the bag leak detection system including quality assurance procedures.
4. Maintenance of the bag leak detection system including a routine maintenance schedule and spare parts inventory list.
5. How the bag leak detection system output will be recorded and stored.
6. Procedures for determining what corrective actions are necessary in the event of a bag leak detection alarm.

The baghouse (SVAB-BH) associated with the Electric Induction Furnaces (EIFs) is equipped with a bag leak detection system (BLDS).

### 5.1 Installation

Each BLDS has been installed according to the manufacturer's specifications included in the Appendix A. The BLDS was carefully selected to ensure that they were appropriate for the type and temperature of the emissions from the EIFs.

### 5.2 Initial and Periodic Adjustments

The alarm set-point for each BLDS was established following the procedures outlined in the Manufacturer's specifications. Each system is capable of detecting particulate matter emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains / actual cubic foot) or less. The initial adjustment of the system included establishing the baseline output and establishing alarm set points. Following the initial adjustment, do not adjust the sensitivity or range, averaging period, alarm set point, or alarm delay time. Except, once per quarter, we may adjust the sensitivity of the bag leak detection system to account for seasonable effects including temperature and humidity

### 5.3 Operation and Quality Assurance Procedures

Each BLDS is maintained, operated, and inspected according to recommendations from the manufacturer and the manufacturer's specifications. Quality assurance procedures from the manufacturer's specifications are also followed.

### 5.4 Preventive Maintenance and Spare Parts Inventory

The BLDS is included in the CMMS. This program ensures that all equipment in the facility receives inspections and maintenance at proper intervals to ensure appropriate operation. Details of inspections and PMs performed on the baghouses and the BLDS are listed in Section 2.4 of this plan.

A list of spare parts for the BLDS is kept in the CMMS. The maintenance department is responsible for keeping sufficient spare parts for the facility to minimize production downtime due to equipment failures.

### 5.5 Recording and Storing Data

The BLDS is connected to a data logger. A data point is collected every 2.5 minutes. This data is summarized into 15-minute block averages.

Data is stored on the facility's main computer system, which is backed up daily.

**Table 9 – BLDS Operating Variables**

| Equipment | Normal Operating Range | Alarm to Sound | Monitoring Frequency | Averaging Periods |
|---|---|---|---|---|
| Bag leak detection system | 0-8 | High PM alarm | 2.5 minutes | 15 minutes |

### 5.6 Corrective Actions for BLDS Alarm

Once a BLDS alarm has been triggered, the facility must initiate corrective action to determine the cause of the alarm within one hour. A corrective action to resolve the problem must be started within at least 24 hours of the alarm and completed no later than 10 calendar days from the date of the alarm. The corrective actions are listed in Section 2.0, for in response to an inspection and in 4.0, for high alarm.

#### 5.6.1 BLDS Alarm Set Point

The bag leak detector, Goyen EMP7 Triboelectric Emission Monitor, is installed according to the manufacturer's recommendations by setting the 4-20mA output to a scale range of 0-8. The alarm set point is then established at two times the maximum or peak output during normal operating conditions.

Observed BLDS readings taken during the compliance test will be included in Appendix C, once initial compliance testing is completed.

#### 5.6.2 BLDS Corrective Actions

During each period the BLDS is out of range a visual and audible electronic alarm will be triggered as well as an electronic alert will be sent to key personnel. Activities that may be enacted to return the BLDS to range include:

1. Determine if instrumentation is in working order
2. Check the baghouse stacks for visible emissions
3. Inspect the baghouse for dislodged or torn bags
4. Perform bag leak check with UV powder and a black light

#### 5.6.3 BLDS Recordkeeping

During each time the BLDS is out of range, the facility shall record the following information using the Malfunction Report in Appendix B:

1. The start date and time identifying when the BLDS was determined to be out of range
2. Determination if the exceedance is due to the BLDS being inoperative or other causes
3. Determination if the exceedance occurred during a startup, shutdown or malfunction
4. The date and time of commencement and completion of each necessary corrective action
5. The end date and time identifying when the BLDS returned to range
6. Nature of the repairs or adjustments to the BLDS.

## 6.0 PLAN UPDATES AND REVISIONS

### 6.1 Plan Updates

The MAP will be updated as required for the following reasons:

- Modification to the process or CPMS;
- As required by the permitting agency; or
- A previously unidentified malfunction is identified.

Any time a modification is planned for the EIFs or any of the control devices, instrumentation, or CPMS, an update to the MAP may be required. FES Environmental must be notified to review the proposed modification and to determine its effect on the plan.

Should the permitting agency request an update to the MAP, EJ will initiate the update procedure.

If a previously unidentified malfunction is identified, then the plan is required to be updated within 60 days. These malfunctions will be identified to the Environmental Services Manager on Malfunction Report (Appendix B) or submitted electronically. When such a report is received, FES Environmental will initiate the update procedure.

### 6.2 Update Procedures

An update to the MAP can be requested from the operating facility, the permitting agency, or the environmental department. The request to update the plan will be forwarded to the Environmental Services Manager. The specific modification requested will be reviewed, along with a justification. A decision will be made to either approve or deny the requested modification.

FES Environmental will then draft the plan modification. A copy of the draft will be distributed to the holders of controlled copies of the plan for comment. After final comments have been received on the draft modifications, FES Environmental will finalize the updates and distribute the Facility Manager and Environmental and Safety Manager to include in the Environmental Management System.

Prior to final distribution of the modified plan, the supervisors in the affected areas will be notified. Training materials will be prepared by the Environmental and Safety Department, which can be used to train operators and other affected personnel on the modifications. This training can be accomplished in several ways, including a handout, a discussion at a monthly department meeting, or a control room posting, depending on the complexity of the modification.

### 6.3 MAP Retention

The Environmental and Safety Manager will keep the original version of this document and copies will be made available to staff for the life of the foundry operations. If changes are required to this document for any reason, it is the Environmental and Safety Manager's responsibility to update the original document and redistribute accordingly. The original version and each revision will be made accessible for inspection.

When a version of the plan is updated, a copy of the previous version must be kept for a minimum of five years at the facility. This pertains to all past versions.

## Appendix A – Manufacturers Specifications

Manufacturer specifications and/or operating manuals for BLDS, Differential Pressure gauges, Baghouses, and Emergency Generators.