Consent Decree in

United States of America v.
Maynard Steel Casting Co. (E.D. Wis.)

Appendix B

Maynard Steel Casting Company
Operation & Maintenance Plan and Malfunction Prevention & Abatement Plan

Operation & Maintenance Plan
and
Malfunction Prevention & Abatement Plan

Maynard Steel Casting Company
Milwaukee, Wisconsin

September 2015

Operation & Maintenance Plan
and
Malfunction Prevention & Abatement Plan

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Section 1
Overview

Maynard Steel Casting Company (Maynard Steel) operates a steel foundry that is located in Milwaukee County at 2856 South 27th Street in Milwaukee, Wisconsin. The Wisconsin Department of Natural Resources (WDNR) facility identification number for this facility is 241005710. A facility-wide air operating permit was issued to the facility on November 26, 2004, under WDNR Permit No. 241005710-P01, which was renewed on November 24, 2014, as WDNR Permit No. 241005710-P20.

This document has been prepared as a combined Operation & Maintenance (O&M) and Startup, Shutdown and Malfunction (SSM) plan, as required in accordance with conditions established under a 2015 Consent Decree (CD). Due to the overlapping nature of similar state-specific requirements, this plan also serves to consolidate into this plan, Malfunction, Prevention and Abatement Plant (MPAP) requirements codified under s. NR 439.11, Wis. Adm. Code. An overview of the pollution prevention management practices required under the Consent Decree are discussed in Section 1.1, while discussion of the MPAP requirements is presented in Section 1.2. The functional organization of this consolidated plan is summarized in Section 1.3.

1.1 Pollution Prevention Management Practices

The primay pollution prevention management practices required to be implemented in accordance with the CD and associated schedules specified therein, include the following:

1. Operate and maintain for each electric arc furnace (EAF) a capture and fume collection system (*i.e.*, air pollution control equipment) that meets accepted engineering standards (*e.g.*, American Conference of Governmental Industrial Hygienists [ACGIH]);
2. Install and operate continuous parametric monitoring systems (CPMS) on each operating EAF to measure the pressure drop across each baghouse, and the hood static pressure for the local exhaust hood;
3. For each operating EAF, install, maintain and operate a bag leak detection system (BLDS) in accordance with a BLDS Monitoring Plan, which senses and records relative particulate loading, and is equipped with an audible alarm;
4. Prepare and operate all EAF particulate control devices in accordance with an O&M Plan that includes, in part, monthly inspection of equipment (*e.g.*, pressure sensors, dampers, etc.) related to performance of the total capture system, which is also referred to as the fume collection system (FCS); and

5. Prepare and operate according to a Startup, Shutdown and Malfunction (SSM) plan [See Section 3].

1.2 Malfunction Prevention & Abatement Plan Requirement

Pursuant to s. NR 439.11(1), Wis. Adm. Code, a source that may emit hazardous substances, or that emits more than 15 pounds in any day or 3 pounds in any hour of any air contaminant for which emission limits have been adopted is required to prepare a written MPAP. The purpose of a MPAP is to detail actions and procedures that are intended to prevent, detect and correct malfunctions or equipment failures that may cause any applicable emission limitation to be violated or which may cause air pollution. This requirement is specifically included in Maynard Steel's air operating permit under Condition I.ZZZ.7. Although this requirement applies to sources in addition to the EAF, the MPAP has been incorporated in its entirety into Section 4 of this consolidated plan.

1.3 Functional Organization of Plan

This document has been developed to consolidate elements of Maynard Steel's operation, maintenance, and malfunction prevention & abatement procedures related to its EAF operations into single document to increase efficiencies and clarity, maintain consistency, and minimize redundancy. To this end, this consolidated plan is organized as follows:

- Section 2 – Process Overview: This section provides a general overview of the EAF operations, the associated emissions and the overall system intended to manage such emissions, including the capture and control thereof.

- Section 3 – Startup, Shutdown & Operating Procedures: This section presents information regarding procedures related to operating and maintaining the EAFs, including during periods of SSM. Information regarding the controls and operating practices employed to manage emissions (*e.g.*, capture, control, reduce) is discussed along with corresponding parameters that are monitored to ensure that such controls and operating practices are effectively implemented. Response actions are also detailed for instances where an operating condition or monitored parameter may be outside of appropriate ranges or set points.

- Section 4 – Malfunction Prevention & Abatement Plan: The MPAP contained herein is intended to serve as a stand-alone document that addresses applicable requirements under s. NR 439.11 for all covered sources; however, it has been incorporated into this consolidated document for the reasons noted above.

The combination of elements under Sections 3 and 4 are intended to address operation and maintenance, as well as startup and shutdown procedures particularly related to the EAF operations, while also presenting Maynard's program that is targeted to preventing malfunctions and, where necessary, implementing appropriate response actions.

1.4 Plan Modification

This plan may be modified via operating permit revision procedures codified under ss. NR 407.11 through 407.13, Wis. Adm. Code, and/or in accordance with applicable construction permitting requirements codified under chapters NR 405, 406, or 408, Wis. Adm. Code.

Section 2
Process Overview

2.1 Process Description

Maynard Steel uses four EAFs designated as EAF Nos. 4, 5, 6, and 7 to produce its castings. These EAFs were installed between 1940 and 1982. In general, an EAF is a refractory-lined steel pot, fitted with a refractory-lined cover through which three vertical graphite electrodes are inserted, as shown in Figure 2-1.

The interface between the sidewalls of the pot and the cover is comprised of layer of sand that is used to reduce gaps that may otherwise allow fugitive emissions to escape or excess air to enter. The metal charge is melted with static electrical arcs generated by electrical current flowing among the electrodes and through the charge.

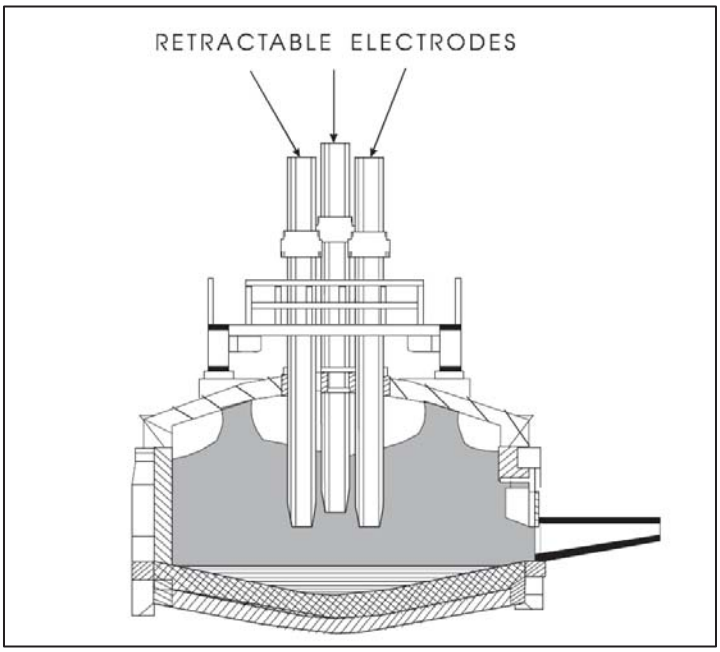

Figure 2-1. Electric Arc Furnace
[Source: USEPA, AP-42, 5th ed., Section 12.13, page 12.13-3]

An EAF heat cycle (a.k.a. "heat") generally commences with charging of an EAF, and concludes with tapping into a pouring ladle. Interim stages can include melting, oxygen lancing, back-charging, refining, testing and slagging. The EAF is vertically oriented when charging and when melting commences, but it may be necessary to tilt the EAFs at different stages of the heat (*e.g.*, for oxygen lancing, refining, slagging and tapping). The frequency and degree of tilting during a heat is variable depending on a variety of production requirements and operating needs. For example, if scrap adheres to a side of the EAF or forms a bridge such that it cannot be adequately accessed by lancing through the slag door with the EAF in the fully vertical

position, then it may be necessary to tilt the EAF to achieve the necessary access and/or position to release the scrap.

2.2 Discussion of Emissions

In brief, the points of emission from the EAF operations prior to tapping include the following after the EAF is powered on:

1. Vertical discharge of hot gases while melting, which emanate from the annular spaces in the furnace cover around the three electrodes which penetrate the cover.

2. Emissions out of the interface between the furnace and furnace cover.

3. Buildup of hot gases inside the EAF can result in puffing out the slag door, especially when the air lance is used to clear scrap from the slag door and when the EAF is tilted forward during refining activities.

4. As slag is poured and dragged out of the slag door, it collects in the slag hopper outside of the EAF, from which emissions may continue as the slag cools.

The vast majority of emissions (on a total mass basis) are anticipated to be attributed to the first of these points, with the balance contributing significantly less emissions. Tapping, including the associated additions of de-oxidants, generates additional emissions. Brief discussions of these sources are presented in the following subsections.

2.2.1 Primary Capture

EAFs 5, 6, and 7 are each equipped with a sidedraft hood that is connected to a telescoping duct to direct emissions to a dedicated shaker baghouse that is, in turn, exhausted to the ambient atmosphere. The sidedraft hood is configured to capture the majority of the emissions from the annular spaces in the EAF cover around the electrodes, while the telescoping duct allows for continuous draw at these points even when the EAF is tilted.

As the scrap melts down, back-charging may be necessary to add more scrap to the EAF, in which case the EAF roof (cover) is temporarily opened (along with the electrodes) so that additional charge can be loaded into the EAF. At such times, the EAF roof is temporarily removed, thereby disengaging the sidedraft hood, to allow the charge bucket to introduce additional scrap into the EAF. Once added, the EAF roof is returned to position and melting can continue as the electrodes are re-inserted into the EAF.

The ventilation configuration for EAF 4 currently differs from that which is employed on EAF's 5, 6, and 7, and includes a combination: 1) local capture via an enclosing hood; 2)

room exhaust ventilation via an overhead hood; and 3) the use of an engineered air curtain to contain emissions in the west end of the melt shop.

An enclosing hood is capable of directly capturing the majority of emissions when a furnace is vertically oriented and the EAF cover is in place; however, its capture efficiency when so oriented can be challenged due to changes in furnace pressure (*e.g.*, due to melt reactions, refining, and oxygen lancing) that can cause fumes to escape through the annular spaces around the electrodes. Consequently, the enclosing hood is the first component of an integrated ventilation system that relies on other established ventilation techniques to assist in the containment and secondary capture of emissions that are not initially captured by the enclosing hood.

Containment of the emissions in the west end of the melt department – where EAFs 4, 5, and 6 are located in line, respectively, from west to east - is effected by the use of an engineered air curtain (based on ACGIH engineering design calculations) that is located immediately east of EAF 6. This air curtain was designed to span the melt bay from north to south, and restrict emissions from migrating beyond (*i.e.*, to the east) of the air curtain. Significant openings in the roof (*e.g.*, windows, seams) are sealed or otherwise closed to reduce the potential for emissions restrained in this area to leave the building by means other than by powered exhaust ventilation systems serving the west end – in particular, including: 1) a roof canopy exhaust hood situated between EAFs 4 & 5; 2) the enclosing hood on EAF 4; and 3) the sidedraft hoods on EAFs 5 & 6. The roof canopy exhaust is strategically positioned to capture a significant portion of the emissions (not otherwise captured by the enclosing hood) that thermally rise from EAF 4. The canopy hood, enclosing hood on EAF 4, and operating sidedraft hoods on EAFs 5 and/or 6 further assist in providing secondary capture of emissions that are retained in the west end by the air curtain (*e.g.*, emissions occurring when the EAF roof is removed for back-charging, or when EAF 4 is otherwise not vertically oriented). With the building being reasonably sealed and under negative pressure, the only means for emissions to evacuate the building are via powered ventilation systems in this area.

2.2.2 Secondary Capture

Although the sidedraft hoods are not explicitly designed to capture emissions from the interface between the EAF and the EAF roof (cover), or emissions that may emanate from the slag door or slag pit, there is a zone of influence established by the sidedraft hood whereby emissions in the vicinity of the EAF are drawn to the inlet of the sidedraft hood due to relative negative pressurization. This effect is one example of *secondary capture*, whereby emissions that are not directly vented via a dedicated local exhaust system are secondarily drawn into such systems along with inplant air. Secondary capture of at least part of the emissions that are not directly captured by the sidedraft hoods on EAFs 5, 6, and 7, and the enclosing hood on EAF 4 is expected as a result of the

negative pressurization of the melt department, which is predominantly attributed to the effect of the local exhaust systems that serve these EAFs.

Understanding that the supply air that enters the local exhaust system is inplant air that is drawn from the vicinity of the EAF, if emissions that are not directly captured by a local exhaust system are retained within the area or zone from which the supply air is drawn, then there is an increased possibility to expedite the secondary capture such emissions while reducing effective age of air. To this end, Maynard Steel uses an air curtain, as discussed in Section 2.2.1 to retain emissions within vicinity of the EAF's to promote the more expeditious secondary capture of emissions by the powered exhaust systems and associated exhaust hoods (*e.g.*, sidedraft hoods, enclosing hood, canopy hood).

2.2.3 Furnace Cover & Furnace Interface

In general, in cases involving an EAF with a continuous and uninterrupted sand layer, the majority of the air emissions over the course of a heat are expected to emanate from the annular electrode holes, while lesser amounts of emissions are anticipated from the slag door. The interface between the sidewalls of the pot and the cover is comprised of layer of sand that is used to reduce gaps that may otherwise allow fugitive emissions to escape or excess air to enter.

2.2.4 Slag Door Deflectors

To enhance the secondary capture of emissions from the slag door (*e.g.*, when slag is dragged out and deposited in a slag hopper beside the EAF, or when the EAF it tilted as for oxygen lancing), deflectors are employed on EAFs 5, 6, and 7 to assist in directing such emissions toward the sidedraft hoods. Such deflectors include fabricated plates that are installed above the slag door, and in some instances the equipment (*e.g.*, existing ductwork - as is the case on EAF 5) itself coincidentally is configured to effectively act as a deflector.

The deflectors improve indoor air quality by reducing slag door emissions and the potential for such emissions to migrate from the building. The deflectors enhance and expedite (*i.e.*, reduce the age of air) the secondary capture of slag door emissions. However, given the relatively small amounts of emissions from the slag door, operation of the EAFs does not mandate the deflectors are used. Absent the deflector plates, such emissions are generally expected to migrate with prevailing in plant air flows to areas of relative negative pressurization, which are predominantly established by the EAF baghouses within the melt department that, in turn, assist with secondary capture of such emissions via by the powered exhaust systems and associated exhaust hoods (*e.g.*, sidedraft hoods, enclosing hood, canopy hood).

2.2.5 Slag Pit

In addition to slagging activities, some off-gassing from materials in the slag pit is expected. As with the puffs from the slag door, some of the off-gassing of materials in the slag pit are reasonably anticipated to be drawn into the local exhaust hoods. The total mass of emissions from materials in the slag pit can be limited by controlling the amounts of combustible materials that enter the pit (*e.g.*, samplers used to collect molten metal samples for spectroscopic analysis are comprised of consumable materials). To avoid undue combustion thereof and associated fugitive emissions from the slag pit, the remaining portion of the samplers will either be cooled via dipping in water and placed into dedicated containers for appropriate disposal, or placed directly into an EAF to complete the consumption thereof so that associated emissions may be directly captured and vented to the corresponding baghouse.

Section 3
Startup, Shutdown & Operating Procedures

3.1 Purpose

The purpose of this section of the plan is to describe procedures for operating and maintaining the emission sources discussed in Section 2 during periods of startup, shutdown and normal operations to:

1. Ensure that, at all times, each affected source (as described in Section 2), including associated air pollution control and monitoring equipment, is operated and maintained in a manner which satisfies the general duty to minimize emissions established by 40 CFR 63.6(e); and

2. Reduce the reporting burden associated with periods of startup and shutdown.

3. Achieve the Pollution Prevention Management Practices described in Section 1.1 of this plan.

3.2 Startup Procedures

The startup procedure includes checking various conditions associated with the systems described in Section 2 to ensure that they are in proper condition before initiating a heat. The conditions that are checked are detailed on two checklists that are provided in Appendix E:

1. EAF EMISSIONS CONTROL CHECKLIST – MAINTENANCE PRE-OPERATION: This checklist details items that are normally checked during first or second shift, or otherwise in advance of commencing melting. Metal melting is not performed during these daytime/afternoon shifts due to increased electrical costs. *NOTE: Metal melting is primarily conducted during non-peak hours from from 8:00 p.m. to 8:00 a.m.*

2. EAF EMISSIONS CONTROL CHECKLIST – MELT DEPARTMENT OPERATION: This checklist details items that are checked for each heat before melting commences. Also included on this checklist are operating conditions that are checked, which are further discussed in Section 3.4.

3.3 Shutdown Procedures

Certain shutdown activities need to be performed in a sequential manner. Specifically, after tapping is completed for the final heat for a given period (*i.e.*, 8:00 p.m. to 8:00 a.m.), the EAF is first powered down before proceding with the shutdown of the balance of the emissions control related systems.

3.3.1 EAF

EAF shutdown is to occur before the baghouse shutdown practices are initiated. This practice is intended to prevent excess emissions from being released from the EAFs as part of the normal shutdown procedure. The EAFs will be shutdown as described by standard operating procedures (SOP) internal to Maynard Steel.

3.3.2 EAF Ventilation Systems

The shutdown procedure for the EAF ventilation systems can be initiated after an EAF has been tapped, powered off, and fugitive indoor emissions from the EAF operations have substantially cleared. After the conclusion of the scheduled heats for a melt shift for a particular EAF, the appropriate shutdown procedure for each baghouse is to be followed using corresponding SOPs, which generally entail allowing one-complete shake-down cycle to proceed after shutting off the fan. This action is to be completed prior to the next scheduled heat.

Each baghouse is designed to allow isolation of individual cells for bag replacement or repair. Routine maintenance of filter bags in the baghouse system is not classified as a reportable event for purposes of this plan.

In addition to shutting down a baghouse, the blower for the air curtain (to the immediate east of EAF 6) may be turned off after all of the west end EAFs (*i.e.*, EAF Nos. 4, 5 or 6) have been powered down, and fugitive indoor emissions from the west end EAF operations have substantially cleared.

3.4 Operating Parameters and Response Actions

Table 3-1 delineates the operating practices and parameters that are monitored to ensure that the overall EAF emissions control system is functioning properly while a heat is being performed. These elements are also incorporated into the 'EAF EMISSIONS CONTROL CHECKLIST – MELT DEPARTMENT OPERATION' contained in Appendix E. Operating limits for each operating parameter, as established during testing or as otherwise specified in the NR 407 operating permit are summarized in Appendix E. Maynard uses a continuous parametric monitoring systems (CPMS)[1] that includes the hood static pressure for the sidedraft hood system, the pressure drop across the baghouse, and BLDS implemented in accordance with the CD.

[1] A CPMS, also called parametric monitoring, measures a parameter (or multiple parameters) that is a key indicator of system performance. The parameter is generally an operational parameter of the process or the air pollution control device (APCD) that is known to affect the emissions levels from the process or the control efficiency of the APCD. Examples of parametric monitoring include temperature, pressure, or flow rate monitoring.

- CPMS – Hood Static Pressure: The hood static pressure is used to ensure that the sidedraft hood is providing sufficient draw throughout the heat. Operating setpoints are EAF-specific and are generally based on empirical information related to various factors (*e.g.*, hood, duct, baghouse configuration, etc.). Changes in such factors that reduce the draw can be manifested in a decrease in the hood static pressure. For example, an increase in the pressure drop across the baghouse will tend to result in a reduction in the hood static pressure. Similarily, damage to ductwork can cause an increased pressure drop across the system that contributes to a decreased hood static pressure. A Hi-Low setpoint is established as an alert that the hood static pressure is approaching its minimum or Low-Low setpoint; thereby allowing time for actions to be implemented, where appropriate, to increase the hood static pressure before actually exceeding the Low-Low setpoint. If the hood static pressure drops below the Low-Low point, a the draw is deemed to be inadequate to provide effective capture.

- CPMS – Baghouse Pressure Drop: In general, the pressure drop is used as an indicator of the relative performance of the baghouse, and includes both a lower and upper bound. A low pressure drop can be indicative of air bypassing or otherwise unacceptably passing through a bag (*e.g.*, bag break, improperly seated bags, etc.). Conversely, an elevated pressure drop can translate into a reduction in exhaust flow and also result in excess strain on the fibers of the bags, which can stretch the fibers and expand the pathways through which dust can pass. The proper operating range for the pressure drop is based on manufacturer recommendations, ventilation studies, baghouse maintenance contractor recommendations, or other appropriate methods. Internally, a Hi-Low and a Hi-Hi point are established within the proper operating range to provide setpoints that serve as an alert that the parameter is approaching an endpoint of the range; thereby allowing time for actions to be implemented, where appropriate, to reduce the potential for the monitored parameter to actually exceed the proper operating range. It is important to note that the proper range may change under certain circumstances (*e.g.*, change in bag supplier, etc.).

- CPMS – BLDS: Light scattering BLDS will be installed, operated and maintained on each EAF-baghouse in accordance with the terms and conditions established under the CD, which include operation in accordance with a BLDS Monitoring Plan.

In the event of a deviation from an established operating limits, the corrective action procedure in Section 4.7 is implemented. To facilitate the implementation thereof, reasonably anticipated deviations and the corresponding response actions are identified by a unique identifier (*e.g.*, "R-01") in right-most column of Table 3-1, which are cross-referenced to detailed response actions that are presented in Table 3-2. In the event of a verified malfunction that necessitates the implementation of the procedure presented in Section 4.7, a Malfunction Occurrence Log provided in Appendix F will be completed. This log includes information regarding completion of appropriate corrective actions to address the malfunction.

3.5 Recordkeeping & Reporting

The checklists discussed in Section 3.2, as well as any Malfunction Occurrence Logs are to be signed by the **on duty Maintenance Supervisor, the on duty Melt Supervisor, and the Maintenance Superintendent/Manager**. Ultimately, these documents should be routed to the Safety/Environmental Manager or his/her designee for centralized recordkeeping and will be retained for at least five (5) years. In the event of a malfunction condition that is not identified in Table 3-2, this plan will be modified and updated to include the newly identified malfunction condition within 6-months of the identification thereof.

Situations under which Maynard Steel is required to report to the WDNR are discussed in Section 5.1. In brief, such reporting includes notifications in the event of the following: 1) a hazardous substance air spill; 2) a malfunction or other unscheduled event that causes or may cause any emission limitation to be exceeded; 3) schedules for the planned shutdown and startup of air pollution control equipment and the measures to be taken to minimize the down time of the control equipment while the source is operating; and 4) any deviations from the terms and conditions of the operating permit.

Section 4
Malfunction Prevention & Abatement Plan

4.1 Purpose

As discussed in Section 1.2, this Malfunction Prevention and Abatement Plan (MPAP) is written in accordance with s. NR 439.11, Wis. Adm. Code. Pursuant to this requirement, the purpose of this MPAP is to detail actions and procedures that are intended to prevent, detect and correct malfunctions or equipment failures that may cause any applicable emission limitation to be violated or which may cause air pollution. To this end, the MPAP

1. Identifies positions responsible for inspecting, maintaining and repairing emission control devices;

2. Describes items, equipment, and conditions that will be checked, and the maximum intervals for such checks and routine maintenance;

3. Presents the calibration schedule for any device that monitors either a source or air pollution control operational variables;

4. Provides a listing of materials and spare parts that will be maintained in inventory to facilitate the expeditious repair of control device systems; and

5. Describes corrective action procedures that will be taken in the event of a malfunction or failure that results in the exceedance of an applicable emission limitation.

Pursuant to s. NR 439.11(1), Wis. Adm. Code, a source that may emit hazardous substances, or that emits more than 15 pounds in any day or 3 pounds in any hour of any air contaminant for which emission limits have been adopted is required to prepare a written malfunction MPAP. This requirement is specifically included in Maynard Steel's air operating permit under Condition I.ZZZ.7.

In light of the overlapping nature of select O&M and SSM requirements established under the CD, and those of the state-specific MPAP requirements, Maynard Steel has incorporated SSM Plan elements related to malfunctions into this MPAP, as well as O&M Plan elements related to maintenance. In both cases, such elements are exclusively related to the the entire melt shop including the ventilation systems. These specific elements are not intended to be addressed herein in relation to sources other than the EAFs, which are only subject to the above-

noted MPAP requirement. Rather than maintain a separate document for sources other than the EAFs, they are also addressed in this section.

4.2 Scope

Maynard Steel has a corporate goal of maintaining compliance with all applicable environmental regulations. It is incumbent on all employees to follow and enforce the best management practices outlined in this MPAP. All pollution control equipment shall be operated and maintained in conformance with good engineering practices to minimize the possibility for exceedance of any emission limitation.

4.3 Individuals Responsible for Inspection, Maintenance, and Repair

Personnel responsible for inspecting, maintaining, and repairing the control equipment covered under this MPAP are listed below according to s. NR 439.11(1)(a).

Location: 2856 S. 27th Street Milwaukee, WI 53215
Main phone: 414-385-6575 (security desk) - cell during non-business hours 414-940-3894

A. **Plant Manager (top executive manager in charge of operations and maintenance)**
Ray Sabin ***414-385-6593, radio page through security, or cell 414-940-4638***
Responsible for the overall administration and financial funding of the MPAP, and any decisions to discontinue or continue operation of a source that has a malfunction. In the absence of the Plant Manager, such decisions are to be made by the Night Manager / Superintendent who shall, in turn, notify the Plant Manager as soon as possible.

B. **Night Manager / Superintendent**
John Wasikowski ***Radio page through security***
In the absence of the Plant Manager, the Night Manager / Superintendent is responsible for any decisions to discontinue or continue operation of a source that has a malfunction. This individual will notify the Plant Manager as soon as possible after making such a decision. This responsibility lies with the designated or acting Night Manager / Superintendent, if other than the individual named above.

C. **Maintenance Superintendent / Manager**
Ron Dosch ***414-385-6588, radio through security, or cell 550-7940***
Responsible for the day to day implementation of the plan, preventive maintenance schedules, allocating manpower (including the assignment of routine inspections and repairs to maintenance personnel, as described under Item E below), work orders, reviewing inspections (see also Section 4.4), maintaining records, calibration of test equipment, ordering spare parts, etc. Responsible for the prompt notification of the Plant Manager and the Safety/Environmental Manager when there is a malfunction or shutdown of pollution control equipment.

D. **Safety / Environmental Manager**
Gene O'Kelly 414-385-6570 or cell 414-526-2719
[Alternate: Jason Krueger 414-385-6572]
Responsible to revise and maintain this MPAP as needed, advise and assist Plant Manager in decisions to continue operation or discontinue operation in the event of a malfunction, audit monthly for compliance to the plan and it's record keeping requirements, notify top management of deficiencies in compliance, notify Department of Natural Resources as needed according to the plan.

E. **Departmental Supervisors and Superintendents / Managers**
Responsible for the proper operation of the equipment in their department (*e.g.*, Melt, Maintenance, etc.), turning on/off, coordinate timely emptying of hoppers if needed, assisting maintenance of any monitoring or data recording necessary, notifying maintenance when malfunctions or problems are noted, and reviewing completed maintenance activities and repairs.

F. **Maintenance Personnel**
Various as specified by the Maintenance Superintendent / Manager
Maintenance personnel identified by the Maintenance Superintendent / Manager as having an appropriate working knowledge of control devices and monitoring equipment will be responsible for conducting the routine inspections described under Section 4.4.1, and for performing select repairs, as necessary and as directed by the Maintenance Supervisor.

4.4 Inspections

Inspections conducted as part of routine maintenance to identify potential issues that, if left uncorrected, could lead to a malfunction. For the purpose of this MPAP, the inspections relate to each air pollution control device that satisfies the criteria under s. NR 439.11(1), as summarized in Section 4.1, and to each associated parametric monitoring device. The control device is inspected to ensure that functions properly to control emissions, while the associated monitoring device is inspected to ensure that it functions properly to provide accurate parametric information regarding the operation of the control device – *e.g.*, pressure drop across a baghouse is within the permitted range that is indicative of normal performance.

The inspections required under s. NR 439 are routine inspections that are primarily performed by Maynard Steel personnel, as discussed in Section 4.4.1. In addition to these routine inspections, periodic inspections are to be performed of the overall systems associated with the EAF's, as discussed in Section 4.4.2.

4.4.1 Routine Inspections

Completion of the routine inspections discussed under this section is the responsibility of the *Maintenance Superintendent / Manager*. The intent of routine inspection and

maintenance of pollution control equipment is to keep the equipment in efficient operating condition, and prevent malfunctions that may cause an applicable emission limitation to be violated or which may cause air pollution. The air pollution control equipment that is subject to routine inspections and the maximum intervals thereof are summarized in Table 4-1. Associated parametric monitoring devices (*e.g.*, pressure drop gauges) are inspected and calibrated at least quarterly to ensure that they are operating properly. Items to be checked during the routine inspections are summarized in Table 4-2.

The maximum intervals for routine control device inspections include daily and weekly inspections which take in account operating conditions as well as manufacturer's recommendations. The intervals for inspection and maintenance shall never be less than the manufacturer's recommendations.

In addition to the daily and weekly inspections, each control device listed in Table 4-1 (to the extent it operates) receives monthly preventative maintenance, which includes an inspection of the total capture system, including observation of the physical appearance of the equipment (presence of holes in the ductwork or hoods, flow constrictions caused by dents or accumulated dusts in the ductwork, and fan erosion).

All inspections must be completed and documented by personnel with the appropriate working knowledge of the control device and monitoring equipment to be inspected. The resulting inspection reports are to be reviewed by maintenance shift supervisors. Repairs and any maintenance performed must likewise be performed by Maynard Steel maintenance personnel with appropriate skills and/or training to make such repairs and/or outside contractors when necessary. All work completed is to be reviewed by maintenance shift supervisors. Copies of the associated inspection forms are available in Appendix B.

The *Maintenance Superintendent / Manager* is responsible for ensuring that the daily, weekly, and monthly inspections are being properly performed, and for reviewing the inspection reports to verify that noted potential issues and repairs are addressed.

4.4.2 Periodic Inspection of Overall System

In addition to the required routine inspections (see Section 4.4.1) that are conducted on all control devices subject to s. NR 439.11, Maynard Steel conservatively utilizes a third-party to conduct periodic inspections to review the condition and performance of the EAF local ventilation system – including the sidedraft hood, telescoping duct, duct and baghouse, as well as ancillary systems to increase the capture of emissions from EAF tapping (*e.g.*, air curtains). A guide outlining the conditions that should be checked during these inspections are presented in Appendix C. Such inspections will be

performed **at least once every 12 months of operation** and the results documented in an inspection report, which will be reviewed by appropriate facility personnel including, but not limited to, the Maintenance Supervisor, Safety/Environmental Manager, and Plant Manager.

4.4.3 Periodic Inspection of Bags

To assess the effectiveness of the bags and to provide a relative indication as to when a baghouse should be rebagged, two bags from opposite ends of each baghouse will be removed (and replaced with spare bags), properly packaged and shipped to a third party for analysis. The analysis to which the bags will be subjected are intended to:

- Determine the condition of the bag (*e.g.*, acceptable for continued use, etc.)
- Estimate the approximate useful life remaining
- Determine if replacement is required
- Present recommendations for enhanced performance (*e.g.*, run shaker longer / more frequently, die test, etc.)

Such analyses are to be performed in accordancd with manufacturer recommendations, but **at least once every 12-months of operation** of the baghouse. Subsequent testing prior to replacement will be considered as recommended by the third party conducting the analyses.

4.5 Calibration Schedule

Completion of the required calibrations discussed under this section is the responsibility of the *Maintenance Superintendent / Manager*. All flow meters and pressure drop monitoring gauges for the devices covered under this MPAP must be calibrated according to manufacturers' directions at least annually. In the case of the pressure drop gauges for each EAF FCS, the calibration frequency is at least quarterly. Records of the calibrations are required to be maintained, as part of the required records discussed under Section 4.8. Copies of such calibration records will be retained in Appendix A for at least three years, starting with available records for the 2015 calendar year.

4.6 Spare Parts Inventory

At least one of each of the materials and spare parts listed in Appendix G are maintained in inventory, normally in the stock room. In the event that the spare parts needed to complete repairs on an EAF FCS are not among those normally maintained in the onsite inventory, then depending on the nature of the parts and the type of repairs needed, Maynard Steel will secure such parts either by: 1) directly obtaining the required parts from local vendors and/or ordering the required parts necessary to complete the repairs in a timely manner; or 2) retaining a ventilation repair firm to supply the necessary parts and to complete the required repairs.

4.7 Corrective Action Procedure

In the event of a malfunction or failure that results in the exceedance of an applicable emission limitation (*e.g.*, parametric monitoring variable outside of a permitted range, etc.), the actions outlined below will be taken. In the event of a malfunction with an EAF and associated pollution control equipement, please refer to Tables 3-1 and 3-2.

1. Verification of the Value of the Operating Parameter: Operating personnel check gauges as required. If a monitored parameter is determined to be outside the specified ranges, Maintenance is contacted. In turn, the *Maintenance Supervisor* in charge, or his/her designee, should take a new reading to ensure the validity of the reading.
2. Initial Correction Attempt: After verifying that the monitored parameter is outside the operating range, the *Maintenance Supervisor* in charge, or his/her designee, should make adjustment(s) or repairs, as necessary to return the parameter to within the required operating range.
3. Response to Unsuccessful Correction Attempts: If the *Maintenance Supervisor* in charge, or his/her designee, determines, through trial and error that the operating parameter cannot be returned to the stated range, then the operating *Department Supervisor* should make a complete assessment of the situation and notify the *Plant Manager* and the *Safety/Environmental Manager*.
4. Secondary Correction Attempt: After notification of the situation, the *Plant Manager*, along with the *Maintenance Superintendent / Manager* should take the following actions:
   - Assist the *Maintenance Supervisor* in charge, or his/her designee, in determining the cause of the malfunction.
   - Solicit the resources necessary to verify that the readings are valid and not attributable to instrument error.
   - Assist the *Maintenance Supervisor* in charge, or his/her designee, in making the necessary adjustments or repairs.
   - Solicit the resources necessary to make the required repairs.
   - If the above efforts are unsuccessful at returning the operating parameter to the acceptable operating range, solicit resources that are determined to be necessary to solve the problem.
5. The *Maintenance Superintendent / Manager* and/or the *Maintenance Supervisor* in charge will direct repairs and inspection of the malfunctioning unit to determine the extent of damage and estimate the amount of time required to repair the unit.
6. The *Maintenance Superintendent / Manager* and/or the *Maintenance Supervisor* in charge will determine the amount of time to reasonably and safely shut down the affected plant operations.
7. The *Maintenance Superintendent / Manager* and/or the *Maintenance Supervisor* in charge will report the following information to the *Plant Manager* and *Safety/Environmental Manager*:

the cause of the malfunction and the duration of the exceedance, along with the time the malfunction started and when repairs are expected to be completed.

8. The *Safety/Environmental Manager* will make an assessment as to the potential impact of the malfunction as to whether or not it has or is likely to cause a permit limitation to be exceeded, and based on this assessment and in consult with the *Plant Manager*, decide if it is appropriate to shut down the associated operation – providing such can be done safely.

   NOTE: It is possible for certain malfunctions to occur that are do not or are not likely to cause an emission limitations to be exceeded. In such a case, the operation need not be shut down, and the WDNR does not need to be notified. Repairs then need to be made as quickly as possible to restore the equipment to its normal operating condition.

9. The *Safety/Environmental Manager* will call the WDNR Bureau of Air Management contact by the next business day of any such event, and inform such person that:
   - a malfunction has occurred;
   - which unit is malfunctioning;
   - the cause of the malfunction and duration of the exceedance;
   - what time the malfunction started or was discovered; and
   - when repairs are expected to be completed and the measure(s) that will be taken to minimize emissions during that period.

10. If required, following safe shut-down of the affected equipment, the *Maintenance Superintendent / Manager* and/or *Maintenance Supervisor* in charge will proceed with the required corrective actions as directed by the *Plant Manager*.

11. The *Safety/Environmental Manager*, or his/her designee, will document the malfunction occurrence (Appendix F) and send copies of such documentation to the appropriate WDNR personnel, as necessary.

4.8 Records Retention & Periodic Review

Documented records and forms of the inspections are to be retained in the Environmental Department for a minimum period of five (5) years (see Appendix B & C), or in another area as specified by the *Plant Manager* or the *Safety/Environmental Manager*. This MPAP will be reviewed and updated, if necessary, **at least every 5 years**. A form to facilitate the document that such a review has been completed is provided in Appendix D.

4.9 Reporting

In relation to this MPAP, situations under which Maynard Steel is required to report to the WDNR include: 1) a hazardous substance air spill; and 2) a malfunction or other unscheduled event that causes or may cause any emission limitation to be exceeded. Details regarding such reporting are presented in Section 5.1.

4.10 Conformance with MPAP

This MPAP is an enforceable document under Maynard Steel air operating permit (Condition I.ZZZ.7); therefore, adherence to the elements of this MPAP is required. Maynard Steel must document conformance with this plan as part of required semiannual compliance monitoring reports, and in a required annual compliance certification. Consequently, the *Maintenance Superintendent / Manager* and the *Plant Manager* shall certify every six months, by signature, that:

1. The facility has operated according to this MPAP;
2. There were no deviations from the MPAP;
3. No deviations were reported to the *Safety/Environmental Manager*;
4. There were no known exceedances of applicable PM, HAP or fugitive emissions limits; and
5. There were no malfunctions that were not properly and promptly notified to the WDNR.

A form is provided in Appendix D to document this review and certification, which includes a certification by the *Safety/Environmental Manager* as to whether or not he/she was informed of any deviations.

Section 5
Reporting Requirements

5.1 Reporting Requirements

In accordance with Condition II.D of the air operating permit, the WDNR will be notified as follows:

1. Hazardous Substance Air Spill: In the event of any hazardous emission not in conformity with a permit or allowed by the WDNR under chapters NR 400 to 499, the WDNR will be notified immediately by calling **1-800-943-0003**. Notice shall be given as required by s. 292.11, Wis. Stats., and ch. NR 706, Wis. Adm. Code.

2. Malfunctions & Unscheduled Events: In the event of a malfunction or other unscheduled event that causes or may cause any emission limitation to be exceeded, the WDNR must be notified **by the next business day**, unless Maynard has otherwise reported the event to the WDNR in advance. The information to be reported includes: 1) the cause and duration of the exceedence; 2) the period of time considered necessary for correction; and 3) measures taken to minimize emissions during the period.

3. Deviations from Other Permit Conditions: In addition to the requirements noted above, the WDNR is required to be notified by the next business day of deviations from any other conditions specified in the permit. The information to be reported includes identification of the deviation, the cause, duration, and steps taken to prevent recurrence.

4. Planned Shutdown & Startup of Air Pollution Control Equipoment: Maynard will report to the Department, in advance, schedules for the planned shutdown and startup of air pollution control equipment and the measures to be taken to minimize the down time of the control equipment while the source is operating. Scheduled maintenance or any other scheduled event, including startup, shutdown or soot blowing procedures that have been approved by the WDNR under s. NR 436.03(2)(b), which causes an emission limit to be exceeded shall also be reported in advance. Advance reporting pursuant to this permit condition does not relieve any Maynard Steel from the duty to comply with any applicable emission limitations. Emissions in excess of the limits set in chs. NR 400-499, Wis. Adm. Code, may be allowed when the emissions are temporary and due to scheduled

maintenance, startup or shutdown of operations carried out in accord with a plan and schedule approved by the WDNR.

5.2 Compliance Monitoring & Certification

Semiannual compliance status reports will be provided to the WDNR within 45 days of the end of each 6 month reporting period. Annual compliance certifications will be submitted to the WDNR and USEPA-Region 5 within 45 days of the end of each calendar year. Compliance certifications, excess emissions, monitoring parameter excursions and the results of any performance test conducted during the reporting period shall be included in these reports to satisfy the requirements associated with this plan.

Tables

Table 3-1. Operating Practices & Monitored Parameters for EAF Operations

Step	Heat Operating Activity	Emissions	Capture[1]	Control	Operating Practice / Parameter Monitored[2]	Response Actions[3] [See Table 3-2]
1	Pre-heat Ventilation Systems check	None expected.	N/A	EAF Baghouse (pre-heat)	a. Check for open / broken windows. b. Verification of operating status: - EAF Baghouse fan ON - Air curtain blower ON (west end only) c. CPMS operating. d. EAF BH ΔP w/in within permitted range. E. EAF Hood Static w/in Low-High range.	R-08 R-09 R-05 R-02 R-01 R-04.1
2	Charge bucket loading	Dust entrained on scrap may contribute to emissions as scrap is loaded into the charge bucket	a. Secondary capture b. Uncaptured emissions	EAF Baghouse (during heat) Air curtain (west end only)	a. BH Pressure drop & bag leak detection Air curtain blower ON (west end only) b. Indoor visible emissions	R-01 R-05 R-08
3	Sand is added/leveled around the circumference of the pot before initially charging.	None expected.	N/A	N/A	N/A	N/A
4	Charging the EAF	Dust entrained on scrap may contribute to emissions as scrap is loaded into the EAF	a. Secondary capture b. Uncaptured emissions	a. EAF Baghouse (during heat) b. None	a. BH Pressure drop & bag leak detection b. Indoor visible emissions c. Align bucket over EAF to reduce scrap on sand layer	R-01 R-08
5	Sand interface layer is managed to remove scrap that may have fallen onto the interface layer while charging. This generally includes removal of the scrap and adding to & leveling the sand.	None expected.	N/A	N/A	Scrap is removed from sand layer. Sand is added/leveled, as appropriate.	N/A
6	Furnace cover is preliminarily set onto the furnace to check for proper alignment and fit with the sand interface layer, and is adjusted as necessary (e.g., re-aligned, sand added/leveled).	None expected.	N/A	N/A	Sand is added/leveled, as appropriate.	N/A
7	Connection between the hood and the duct is checked for proper alignment.	None expected.	N/A	N/A	Connection between hood and duct is visually checked.	R-03

Table 3-1. Operating Practices & Monitored Parameters for EAF Operations

Step	Heat Operating Activity	Emissions	Capture[1]	Control	Operating Practice / Parameter Monitored[2]	Response Actions[3] [See Table 3-2]
8	EAF is powered on as electrodes are lowered into the pot through ports in the cover.	Fumes (notably particulate matter), primarily emanating from the annular spaces in the cover through which the electrodes pass.	a. Primary Capture - exhaust hood(s) b. Secondary Capture c. Uncaptured	a1. Exhaust hood(s) a2. EAF Baghouse b1. EAF Baghouse (during heat) b2. Air curtain c. None	a1. Hood Static Pressure a2. BH Pressure drop & bag leak detection b1. BH Pressure drop & bag leak detection b2. Powered on c. Indoor visible emissions	R-04 R-01 R-01 R-05 R-08
9	Oxygen Lancing, Refining, and Slagging (performed via the slag door)	Same as Step 8, plus occasional puffs from the slag door.	a. Primary Capture - exhaust hood(s) b. Secondary Capture	a1. Deflector Plate a2. Exhaust hood(s) a3. EAF Baghouse b1. EAF Baghouse (during heat) b2. Air curtain c. None	a1. In place, where necessary a2. Hood Static Pressure a3. BH Pressure drop & bag leak detection b1. BH Pressure drop & bag leak detection b2. Powered on c. Indoor visible emissions	R-06 R-04 R-01 R-01 R-05 R-08
10	Testing / Analysis Samplers contain combustible materials; therefore, to avoid undue combustion thereof and associated emissions, the samplers are placed into a dedicated container for appropriate disposal.	Minimal additional fumes as probe is withdrawn from the EAF via the slag door.	a. Primary Capture - exhaust hood(s) b. Secondary Capture	a1. Deflector Plate a2. Exhaust hood(s) a3. EAF Baghouse b1. EAF Baghouse (during heat) b2. Air curtain c. None	Same as Step 9, plus Place used samplers into dedicated bin.	Same as Step 9 R-10
11	Tapping / Ladle Inoculation / Carbon Adjustment	Fumes (notably particulate matter)	a. Primary Capture - exhaust hood(s) b. Secondary Capture	a1. Push nozzles (EAF 6 only) a2. Exhaust hood(s) a3. EAF Baghouse b1. EAF Baghouse (during heat) b2. Air curtain c. None	a1. Powered on (prior to tap) a2. Hood Static Pressure a3. BH Pressure drop & bag leak detection b1. BH Pressure drop & bag leak detection b2. Powered on c. Indoor visible emissions	R-07 R-04 R-01 R-01 R-05 R-08

Notes

1. Primary capture relates to the direct capture of emissions upon release from a source as by the drawing thereof into a local exhaust hood.
   Secondary capture relates to the capture of emissions released inside the building that are induced to flow toward and be drawn into powered ventilation systems inside the building.
   Uncaptured relates to emissions that are neither primarily or secondarily captured by a powered exhaust ventilation system, which may settle-out inside the building and/or may otherwise leave the building.
2. Parameters are generally specific to each EAF dust collection system. If outside of specified ranges, then initiate 'Response Actions'.
   The bag leak detection system (BLDS) be installed on each EAF baghouse in accordance with the schedule specified in the Consent Decree.
3. Response actions are to be initiated if parameter / condition is outside of specified ranges. Refer to Table 3-2 for response action details.

Table 3-2. Response Actions

No.	Operating Practice / Parameter	Condition	Action
CAT-RA	Catastrophic Response Action	**As noted in the actions descibed below.**	**In the event of a castrophic failure - i.e., one that has a reasonable potential to result in the exceedance of an applcable emissions limitation (e.g., hourly mass emission limit, opacity limit) - a heat will be ended as soon as is safely possible without damage to the equipment. If the charge is not yet melted in, then shutdown shall proceed in accordance with the SSM procedure. Alternatively, if the carge is melted in (molten), then the heat will be dumped as follows:** **1. EAFs 4-6: Tap the contents of the EAF into a ladle and remake the heat in another EAF.** **2. EAF 7: Tap contents into multiple ladles for remake in other EAFs, pour emergency ingot(s) or pig mold(s), or retain in EAF 7 and shutdown the EAF 7 in accordance with the SSM procedure.**
R-01	BH Pressure Drop Pressure drop is checked at least once every 8-hours of operation.	Outside of range	1. Verify gauge is working properly. 2. If not, check for & clean any obstruction in leads to gauge. 3. If ΔP returns to acceptable range, then continue normal operation. Otherwise proceed to Step 4. 4. If ΔP does not return to acceptable range, then (prior to tapping) hold operation & complete full BH shakeout cycle. 5. If ΔP returns to acceptable range, then continue normal operations. Otherwise initiate the catastrophic failure response action (CAT-RA).
	Bag Leak Detection System (BLDS) Continuous monitoring - may entail cycling of monitoring equipment common to multiple collectors.	Above setpoint	1. Verify equipment is working properly. 2. If not, investigate & correct apparent cause in accordance with manufacturer's instructions. 3. If reading returns to level at or below setpoint, then continue normal operation. Otherwise proceed to Step 4. 4. Otherwise initiate the catastrophic failure response action (CAT-RA).
R-02	Continuous Parametric Monitoring System (CPMS) Must be operating whenever the respective EAF is operating.	CPMS not operating	1. Turn ON the CPMS. 2. If unable to activate, then with appropriate support (Supervisor), investigate the cause and attempt to correct. 3. If corrective actions are not successful in turning on the CPMS, then alert the Mt. Supervisor and/or Mt. Superintendent to coordinate appropriate repairs. 4. Do not proceed with the heat until the CPMS is operating.
R-03	Hood Connection The sidedraft hood and duct need to be properly aligned and joined to ensure proper draw.	Connection is appreciably offset or there is a significant gap between the hood and duct	1. Investigate the cause or conditions contributing the misalignment or excessive gap. 2. Make any necessary repairs or adjustments to ensure proper alignment & to resolve the gap before powering the EAF.
R-04.1	Pre-heat Hood Static Pressure (HSP) Verify that starting hood static pressure is within the target range (Low-High set point range).	At or below the Low-High set point range, as determined for each EAF	1. Verify gauge is working properly. 2. If not, check for & clean any obstruction in leads to gauge, if possible. 3. If HSP returns to acceptable range, then continue normal operation. Otherwise, proceed to Step 4. 4. If HSP does not return to acceptable range, then (prior to starting heat) complete a full BH shakedown cycle. 5. If HSP returns to levels above the Low-High set point, then continue normal operation. Otherwise repeat Step 4. If after two shakedown cycles, the HSP is within 20% of the minimum Low-High set point, then initiate heat and implement appropriate corrective actions if HSP trips the High-Low alarm set point. Otherwise, do not proceed with heat.
R-04.2	HSP During Heat Must be maintained above the Low-Low set point at all times. Appropriate corrective measures are to be implemented upon hitting the High-Low set point.	At or below the High-Low set point, as determined for each EAF	1. Verify gauge is working properly, to the extent such can safely be done while the heat is underway. 2. If not, check for & clean any obstruction in leads to gauge, if possible. 3. If HSP returns to acceptable range, then continue normal operation. Otherwise, proceed to Step 4. 4. If HSP does not return to acceptable range, then (prior to tapping) hold operation & complete full BH shakedown cycle. 5. If HSP returns to levels above the High-Low set point, then continue normal operation. Otherwise initiate the catastrophic failure response action (CAT-RA).

Table 3-2. Response Actions

No.	Operating Practice / Parameter	Condition	Action
R-05	Air Curtain Blower (West End Only) Air curtain blower needs to be turned on prior to charging of EAF Nos. 4, 5 and 6. Leave powered exhaust on to allow visibles to clear.	Not turned ON	1. Turn ON the blower. 2. If unable to activate, then with appropriate support (Supervisor), investigate the cause and attempt to correct. 3. If corrective actions are not successful in turning on the blower, then alert the Mt. Supervisor and/or Mt. Superintendent to coordinate appropriate repairs. 4. Proceed with the heat and implement the opacity monitoring protocol. 5. Allow operating powered exhaust ventilation systems to remain on until the visible emissions substantially clear.
R-06	Deflector Plates Where present, should be securely mounted so as to assist in directing occasional puffs from the slag door towards the inlet of the sidedraft hood.	Deflector plates, where intended to be present, are not securely in place.	1. Attempt to secure the deflector plate in place. 2. If not successful in securing the deflector plate, then alert the Mt. Supervisor and/or Mt. Superintendent to coordinate appropriate repairs. 3. Proceed with the heat.
R-07	Push Nozzels (EAF 6 only) Must be turned on prior to tapping.	Not turned ON	1. Turn ON the blower if such can safety be done while tapping is underway. 2. If unable to activate, then with appropriate support (Supervisor), investigate the cause and attempt to safely correct. 3. If corrective actions are not successful in turning on the blower, then alert the Mt. Supervisor and/or Mt. Superintendent to coordinate appriate repairs. 4. Complete the heat, refer also to R-08.
R-08	Building Openings Windows along the upper reaches of the melt bay are to be closed prior to charging. Broken windows should be covered/repaired. Leave powered exhaust on to allow	Windows open Broken windows found	1. Close any open windows prior to the night's first heat. 2. Repair or temporarily cover with appropriate materials, any broken windows. If unable to repair in a timely manner, then employ the opacity monitoring protocol. 3. Allow operating powered exhaust ventilation systems to remain on until the visible emissions substantially clear.
R-09	EAF Baghouse Fan Ensure that the baghouse fan is on prior to charging.	Not turned ON	1. Turn ON the fan. 2. If unable to activate, then with appropriate support (Supervisor), investigate the cause and attempt to correct. 3. If corrective actions are not successful in turning on the blower, then alert the Mt. Supervisor and/or Mt. Superintendent to coordinate appropriate repairs. 4. Only after the baghouse fan has been successfully turned on can a heat proceed. 5. If the fan fails during a heat, then initiate the catastrophic failure response action (CAT-RA).
R-10	Sampler Media To avoid undue combustion of consumable media in a slag pit, the samplers are either placed into a dedicated container for appropriate disposal or into the EAF.	Media placed into slag pit	1. All personnel are to be instructed as to the appropriate operating practice - See 'Operating Practice / Parameter' column. 2. Upon discovery, the Shift Supervisor must remind the person who placed the media into the pit of the appropriate operating practice. 3. Shift Supervisor should continue to monitor the process to ensure that appropriate operating practice is consistently implemented.

Table 4-1. Maximum Intervals for Routine Inspections

Control Device	Equipment ID	Max. Interval (if operating)[1, 2]		
		Daily	Weekly	Monthly
#4 Furnace baghouse	4296	1x on 3rd shift		1x on shift 1 or 2
#5 Furnace baghouse	2158	1x on 3rd shift		1x on shift 1 or 2
#6 Furnace baghouse	0170	1x on 3rd shift		1x on shift 1 or 2
#7 Furnace baghouse	3174	1x on 3rd shift		1x on shift 1 or 2
#4 Wheelabrator & Swing Grind baghouse	2502	1x on any shift		1x on any shift
#6 Wheelabrator baghouse	2504	1x on any shift		1x on any shift
Slinger Large Mills wet rotoclone	0121	1x on 1st shift		1x on any shift
Slinger Shakeout wet rotoclone	1222	1x on 1st shift		1x on any shift
West Room Blast dust collector	2503	1x on any shift		1x on any shift
Slinger muller wet rotoclone	1217		1x on 1st shift	1x on any shift
Lg Mills Bentonite Silo dust collector	3412		1x on 1st shift	1x on any shift
Lg Mills Cereal Silo dust collector	3414		1x on 1st shift	1x on any shift
Large mills Sand system reclaim dust collector*	2747		1x on 1st shift	1x on any shift
Large core room hopper dust collector*	2894		1x on 1st shift	1x on any shift
Small core room (Oil Core) hopper dust collector	1818		1x on 1st shift	1x on any shift
100 ton silo dust collector dust collector	2655		1x on 1st shift	1x on any shift
East End sand Reclaim dust collector	4156		1x on any shift	1x on any shift
East End Rotoblast & Vibramill dust collector	4142		1x on any shift	1x on any shift
Rotoblast dust collector (2015)	TBD-1		1x on any shift	1x on any shift
#5 Wheelabrator baghouse	2717		1x on any shift	1x on any shift
Fox Line Stand Grinding & Robot / Lip Cell dust collector	2522-2328		1x on shift 1 or 2	1x on any shift
Main Bay Welding & Scarfing Torit collector	4299		1x on shift 1 or 2	1x on any shift
Weld/Grinding dust collectors ("New")	TBD-2		1x on shift 1 or 2	1x on any shift
East Qualify Room cartridge collector	3106		1x on shift 1 or 2	1x on any shift
West Qualify Room cartridge collector	3107		1x on shift 1 or 2	1x on any shift
East shakeout rotoclone	0009		1x on 1st shift	1x on any shift
West shakeout rotoclone	1998		1x on 1st shift	1x on any shift
Pattern Shop*	4073		1x on 1st shift	
Bentonite dust collector-Slinger*	2950		1x on 1st shift	
Cereal dust collector-Slinger*	2951		1x on 1st shift	

** Vents inside the building. Though maintenance is performed, this source is only listed but is not part of this MPAP.*

Notes

1. As necessary, alternative shifts may be substituted for the daily & weekly inspections.
2. All operating dust collectors receive monthly preventative maintenance.

Table 4-2. Items or Conditions Checked During Routine Inspections

Control Devices - Daily & Weekly Inspections[1]
1. Visually inspect the stack outlet for opacity and evidence of emissions.
2. Monitor the cleaning cycle – check damper valves for synchronization and operation. Note any unusual noises. Visually check rotating equipment and drives for obvious signs of jamming or leakage, broken parts, wear, etc. Make sure all valves are seating properly, and check fan belt tension.
3. Check all moving parts on discharge system and screw conveyor bearings.
4. Wet Systems (Rotoclones): a. Open the upper compartment, and inspect rinse pumps, cones, and nozzles. Replace as needed. b. Empty and rinse settling tank, and transport sludge to yard for disposal. c. Monitor water additives.
Control Devices - Monthly Inspections
1. Open baghouse and access it (confined space entry permit required) a. Check for bag signs of excessive wear or damage, leaks, and for proper bag tension. b. Check bag cages, valves and seals for leaks. c. Replace worn parts, as needed.
2. Inspect all bearings, bushings, chains, shafts, and shaker parts. Replace as needed.
3. Oil & grease all moving parts and bearings.
4. Observe motors in operation and note unusual noises or vibrations.
5. Check ducts for dust build up, and observe damper valves for proper seating.
6. Visually inspect features such as gasket seals on doors, welds, bolts. Check for evidence of corrosion and, where necessary, prepare surface and coat with paint primer.
Monitoring Gauges - Annual Inspections & Calibration[1]
1. Gauges are checked to ensure that they are not fouled in such a manner as to negatively affect the accuracy thereof (*e.g.* , lines leading to/from pressure drop gauges are free of residues, obstructions, kinks, holes).
2. All instruments used for measuring air pollution control device operating parameters shall be calibrated yearly or at a frequency based on good engineering practices as established by operational history, whichever is more frequent, pursuant to s. NR 439.055(4), Wisconsin Administrative Code. EAF FCS pressure gauges shall be calibrated quarterly.

Note

1. In addition to routine inspections, parametric monitoring of control devices is conducted in accordance with applicable air permit requirements, which generally includes monitoring and recording the following once every 8-hours of operation:, and in the case of wet collectors monitoring the flow meters
   a. Pressure drop across the control device via a manometer, mangehelic or photohelic gauge.
   b. For wet systems, the liquor flow rate via a flow meter.

Appendix A
Calibration Records

Appendix B
Routine Inspection Checklists

- Maynard Steel Pollution Control Device Daily Inspection Record
- Maynard Steel Pollution Control Device Weekly Inspection Record
- Baghouse Dust Collector Monthly Prevention Maintenance Record
- Parametric Monitoring Device Measurement Logs & Calibration Record Assessment

MAYNARD STEEL CASTING COMPANY **POLLUTION CONTROL DEVICE DAILY INSPECTION RECORD**

ATTENTION: If equipment did not operate, indicate DNO ("Did Not Operate") **Week of:** _____

Include 2503 West Room Blast in the 'Notes' section for each day that it operates, if at all

Control Device	Equipment ID	Manometer or Flow-meter read	Visual Emissions	Cleaning Cycle	Discharge System			Rinse Cones & Nozzles	Empty Tank	Monitor Additives
					Overall	Duct to baghouse	Fan or Blower			
MONDAY										
#4 Electric Arc Furnace Baghouse	4296							N/A	N/A	N/A
#5 Electric Arc Furnace Baghouse	3158							N/A	N/A	N/A
#6 Electric Arc Furnace Baghouse	0170							N/A	N/A	N/A
#7 Electric Arc Furnace Baghouse	3174							N/A	N/A	N/A
South #4 wheelabrator Dust Collector	2502							N/A	N/A	N/A
North #6 wheelabrator Dust Collector	2504							N/A	N/A	N/A
Clean & PM Lg Mills Rotoclone	0121									
Clean & PM Slinger shakeout Rotoclone	1222									

Notes:

TUESDAY										
#4 Electric Arc Furnace Baghouse	4296							N/A	N/A	N/A
#5 Electric Arc Furnace Baghouse	3158							N/A	N/A	N/A
#6 Electric Arc Furnace Baghouse	0170							N/A	N/A	N/A
#7 Electric Arc Furnace Baghouse	3174							N/A	N/A	N/A
South #4 wheelabrator Dust Collector	2502							N/A	N/A	N/A
North #6 wheelabrator Dust Collector	2504							N/A	N/A	N/A
Clean & PM Lg Mills Rotoclone	0121									
Clean & PM Slinger shakeout Rotoclone	1222									

Notes:

WEDNESDAY										
#4 Electric Arc Furnace Baghouse	4296							N/A	N/A	N/A
#5 Electric Arc Furnace Baghouse	3158							N/A	N/A	N/A
#6 Electric Arc Furnace Baghouse	0170							N/A	N/A	N/A
#7 Electric Arc Furnace Baghouse	3174							N/A	N/A	N/A
South #4 wheelabrator Dust Collector	2502							N/A	N/A	N/A
North #6 wheelabrator Dust Collector	2504							N/A	N/A	N/A
Clean & PM Lg Mills Rotoclone	0121									
Clean & PM Slinger shakeout Rotoclone	1222									

Notes:

THURSDAY										
#4 Electric Arc Furnace Baghouse	4296							N/A	N/A	N/A
#5 Electric Arc Furnace Baghouse	3158							N/A	N/A	N/A
#6 Electric Arc Furnace Baghouse	0170							N/A	N/A	N/A
#7 Electric Arc Furnace Baghouse	3174							N/A	N/A	N/A
South #4 wheelabrator Dust Collector	2502							N/A	N/A	N/A
North #6 wheelabrator Dust Collector	2504							N/A	N/A	N/A
Clean & PM Lg Mills Rotoclone	0121									
Clean & PM Slinger shakeout Rotoclone	1222									

Notes:

MAYNARD STEEL CASTING COMPANY **POLLUTION CONTROL DEVICE DAILY INSPECTION RECORD**

ATTENTION: If equipment did not operate, indicate DNO ("Did Not Operate") **Week of:** _____

Include 2503 West Room Blast in the 'Notes' section for each day that it operates, if at all

Control Device	Equipment ID	Manometer or Flow-meter read	Visual Emissions	Cleaning Cycle	Discharge System			Rinse Cones & Nozzles	Empty Tank	Monitor Additives
					Overall	Duct to baghouse	Fan or Blower			
FRIDAY										
#4 Electric Arc Furnace Baghouse	4296							N/A	N/A	N/A
#5 Electric Arc Furnace Baghouse	3158							N/A	N/A	N/A
#6 Electric Arc Furnace Baghouse	0170							N/A	N/A	N/A
#7 Electric Arc Furnace Baghouse	3174							N/A	N/A	N/A
South #4 wheelabrator Dust Collector	2502							N/A	N/A	N/A
North #6 wheelabrator Dust Collector	2504							N/A	N/A	N/A
Clean & PM Lg Mills Rotoclone	0121									
Clean & PM Slinger shakeout Rotoclone	1222									

Notes:

SATURDAY										
#4 Electric Arc Furnace Baghouse	4296							N/A	N/A	N/A
#5 Electric Arc Furnace Baghouse	3158							N/A	N/A	N/A
#6 Electric Arc Furnace Baghouse	0170							N/A	N/A	N/A
#7 Electric Arc Furnace Baghouse	3174							N/A	N/A	N/A
South #4 wheelabrator Dust Collector	2502							N/A	N/A	N/A
North #6 wheelabrator Dust Collector	2504							N/A	N/A	N/A
Clean & PM Lg Mills Rotoclone	0121									
Clean & PM Slinger shakeout Rotoclone	1222									

Notes:

SUNDAY										
#4 Electric Arc Furnace Baghouse	4296							N/A	N/A	N/A
#5 Electric Arc Furnace Baghouse	3158							N/A	N/A	N/A
#6 Electric Arc Furnace Baghouse	0170							N/A	N/A	N/A
#7 Electric Arc Furnace Baghouse	3174							N/A	N/A	N/A
South #4 wheelabrator Dust Collector	2502							N/A	N/A	N/A
North #6 wheelabrator Dust Collector	2504							N/A	N/A	N/A
Clean & PM Lg Mills Rotoclone	0121									
Clean & PM Slinger shakeout Rotoclone	1222									

Notes:

SIGN-OFF WHEN COMPLETE Signature Date Signed

Inspector: _____ _____

Supervisor: _____ _____

MAYNARD STEEL CASTING COMPANY **POLLUTION CONTROL DEVICE WEEKLY INSPECTION RECORD**

ATTENTION: If equipment did not operate, indicate DNO ("Did Not Operate") **Week of:** _____

Control Device	Equipment ID	Date Inspected	Meters Working?	Visual Emissions	Cleaning Cycle	Discharge System	Rinse Cones &	Empty Tank	Monitor Additives
Bentonite dust collector-Slinger*	2950						N/A	N/A	N/A
Cereal dust collector-Slinger*	2951						N/A	N/A	N/A
Lg Mills Bentonite Silo dust collector	3412						N/A	N/A	N/A
Lg Mills Cereal Silo dust collector	3414						N/A	N/A	N/A
Large mills Sand system reclaim dust collector*	2747						N/A	N/A	N/A
Large core room hopper dust collector*	2894						N/A	N/A	N/A
Small core room (Oil Core) hopper dust collector	1818						N/A	N/A	N/A
100 ton silo dust collector dust collector	2655						N/A	N/A	N/A
Fox Line Stand Grinding & Robot / Lip Cell dust collector	2328						N/A	N/A	N/A
Main Bay Welding & Scarfing Torit collector	4299						N/A	N/A	N/A
Weld/Grinding dust collectors ("New")	TBD-2						N/A	N/A	N/A
East End sand Reclaim dust collector	12126						N/A	N/A	N/A
East End Rotoblast & Vibramill dust collector	4142						N/A	N/A	N/A
Rotoblast dust collector (2015)	TBD-1						N/A	N/A	N/A
#5 Wheelabrator baghouse	2717						N/A	N/A	N/A
East Qualify Room cartridge collector	3106						N/A	N/A	N/A
West Qualify Room cartridge collector	3107						N/A	N/A	N/A
Slinger muller wet rotoclone	1217								
East shakeout rotoclone	0009						N/A	N/A	N/A
West (Center) shakeout rotoclone	0008 & 1999						N/A	N/A	N/A
Pattern Shop*	4073						N/A	N/A	N/A

** Vents inside the building. Though maintenance is performed, this source is only listed but is not part of this MPAP.*

Notes

SIGN-OFF WHEN COMPLETE Signature

Inspector: _____ _____

Supervisor: _____ _____

MAYNARD STEEL CASTING COMPANY **BAGHOUSE DUST COLLECTOR MONTHLY PREVENTION MAINTENANCE RECORD**

ATTENTION: If equipment did not operate, indicate DNO ("Did Not Operate") **Month of:** _____

Control Device	Equipment ID	Manometer or Flow-meter read	Visual Emissions	Cleaning Cycle	Discharge System[1]			Rinse Cones & Nozzles	Empty Tank	Monitor Additives
					Overall	Duct to baghouse	Fan or Blower			
#4 Furnace baghouse	4296							N/A	N/A	N/A
#5 Furnace baghouse	3158							N/A	N/A	N/A
#6 Furnace baghouse	0170							N/A	N/A	N/A
#7 Furnace baghouse	3174							N/A	N/A	N/A
#4 Wheelabrator & Swing Grind baghouse	2502					N/A	N/A	N/A	N/A	N/A
#6 Wheelabrator baghouse	2504					N/A	N/A	N/A	N/A	N/A
Large Mills wet rotoclone	0121					N/A	N/A			
Slinger Shakeout wet rotoclone	1222					N/A	N/A			
West Room Blast dust collector	2503					N/A	N/A	N/A	N/A	N/A
Slinger muller wet rotoclone	1217					N/A	N/A			
Bentonite dust collector-Slinger*	2950					N/A	N/A	N/A	N/A	N/A
Cereal dust collector-Slinger*	2951					N/A	N/A	N/A	N/A	N/A
Lg Mills Bentonite Silo dust collector	3412					N/A	N/A	N/A	N/A	N/A
Lg Mills Cereal Silo dust collector	3414					N/A	N/A	N/A	N/A	N/A
Large mills Sand system reclaim dust collector*	2747					N/A	N/A	N/A	N/A	N/A
Large core room hopper dust collector*	2894					N/A	N/A	N/A	N/A	N/A
Small core room (Oil Core) hopper dust collector	1818					N/A	N/A	N/A	N/A	N/A
100 ton silo dust collector dust collector	2655					N/A	N/A	N/A	N/A	N/A
East End sand Reclaim dust collector	12126					N/A	N/A	N/A	N/A	N/A
East End Rotoblast & Vibramill dust collector	4142					N/A	N/A	N/A	N/A	N/A
Rotoblast dust collector (2015)	TBD-1					N/A	N/A	N/A	N/A	N/A
#5 Wheelabrator baghouse	2717					N/A	N/A	N/A	N/A	N/A
Fox Line Stand Grinding & Robot / Lip Cell dust collecto	2328					N/A	N/A	N/A	N/A	N/A
Main Bay Welding & Scarfing Torit collector	4299					N/A	N/A	N/A	N/A	N/A
Weld/Grinding dust collectors ("New")	TBD-2					N/A	N/A	N/A	N/A	N/A
East Qualify Room cartridge collector	3106					N/A	N/A	N/A	N/A	N/A
West Qualify Room cartridge collector	3107					N/A	N/A	N/A	N/A	N/A
East shakeout rotoclone	0009					N/A	N/A	N/A	N/A	N/A
West (Center) shakeout rotoclone	0008 & 1999					N/A	N/A	N/A	N/A	N/A

** Vents inside the building. Though maintenance is performed, this source is only listed but is not part of this MPAP.*

1. For each EAF baghouse, check for the presence of holes in the ductwork or hoods, flow constrictions caused by dents or accumulated dust in the ductwork, and fan erosion.

Notes:

SIGN-OFF WHEN COMPLETE	Signature	Date Signed
Inspector:		
Supervisor:		

MAYNARD STEEL CASTING COMPANY

Parametric Monitoring Device Measurement Logs & Calibration Record Assessment **Calendar Year:** _____

ATTENTION: If equipment did not operate, indicate DNO ("Did Not Operate")

Stack	Process	Process ID	Control Device	Equipment ID	Gauge	Permit Limit	Units	Provide copies of YTD Logs	Calibration Dates					Calibration record(s) available?
									Annual (non-EAF)	Quarterly (EAFs Only)				
										Q1	Q2	Q3	Q4	
S17A	P17A	#5 Wheelabrator baghouse	C17 (Baghouse)	2717	Total Pressure Drop	1 to 8	in-H2O							
S65	P65	#6 Wheelabrator baghouse	C65 (Baghouse)	2504	Total Pressure Drop	1 to 8	in-H2O							
S15	P35	#4 Furnace baghouse	C15 (Baghouse)	4296	Total Pressure Drop	1 to 8	in-H2O							
					Hood Static Pressure	FCS TBD	in-H2O							
S16	P36	#5 Furnace baghouse	C16 (Baghouse)	3158	Total Pressure Drop	1 to 8	in-H2O							
					Hood Static Pressure	FCS TBD	in-H2O							
S19	P34	#6 Furnace baghouse	C19 (Baghouse)	0170	Total Pressure Drop	1 to 8	in-H2O							
					Hood Static Pressure	FCS TBD	in-H2O							
S51	P39	#7 Furnace baghouse	C51 (Baghouse)	3174	Total Pressure Drop	1 to 8	in-H2O							
					Hood Static Pressure	FCS TBD	in-H2O							
S20	P48	Fox Line Stand Grinding & Robot / Lip Cell dust collector	C20 (Baghouse)	2328	Total Pressure Drop	1 to 8	in-H2O							
S55	P73	East End sand Reclaim dust collector	C55 (Baghouse)	12126	Total Pressure Drop	1 to 8	in-H2O							
S53	P71A&B	East End Rotoblast & Vibramill dust collector	C53 (Baghouse)	4142	Total Pressure Drop	1 to 8	in-H2O							
TBD	TBD	Rotoblast dust collector (2015)	TBD	TBD-1	Total Pressure Drop	TBD	in-H2O							
S66	P66	West Room Blast dust collector	C66 (Baghouse)	2503	Total Pressure Drop	1 to 8	in-H2O							
S67	P67A&B	#4 Wheelabrator & Swing Grind baghouse	C67 (Baghouse)	2502	Total Pressure Drop	1 to 8	in-H2O							
S27	P51A	East Qualify Room cartridge collector	C27 (Cartridge)	3106	Total Pressure Drop	1 to 8	in-H2O							
	P51A	West Qualify Room cartridge collector	C28 (Cartridge)	3107	Total Pressure Drop	1 to 8	in-H2O							
S68	P68	Main Bay Welding & Scarfing Torit collector	C68 (Torit)	4299	Total Pressure Drop	1 to 8	in-H2O							
TBD	TBD	Weld/Grinding dust collectors ("New")	TBD	TBD-2	Total Pressure Drop	TBD	in-H2O							
S34	P80	Small core room (Oil Core) hopper dust collector	C34 (Baghouse)	1818	Total Pressure Drop	1 to 8	in-H2O							
S25	P46	Slinger muller wet rotoclone	C25 (Wet rotoclone)	1217	Total Pressure Drop	≥ 2.0	in-H2O							
					Flow Rate	≥ 40	gpm							
S26	P47	Large Mills wet rotoclone	C25 (Wet rotoclone)	0121	Total Pressure Drop	≥ 2.0	in-H2O							
					Flow Rate	≥ 40	gpm							
S60	P60B	East shakeout rotoclone	C60 (Rotoclone)	0009	Total Pressure Drop	≥ 2.0	in-H2O							
S61	P60A	West (Center) shakeout rotoclone	C61 (Rotoclone)	0008 & 1999	Total Pressure Drop	≥ 2.0	in-H2O							
S62	P42	Slinger Shakeout wet rotoclone	C25 (Wet rotoclone)	1222	Total Pressure Drop	≥ 2.0	in-H2O							
					Flow Rate	N/A	gpm							

EAF = Electric Arc Furnace

SIGN-OFF WHEN COMPLETE	Signature	Date Signed
Maintenance Superintendent / Manager	_____	_____
Safety/Environmental Manager	_____	_____
Plant Manager	_____	_____

Appendix C
Periodic Inspection of EAF Systems

- Periodic Inspection Guide – EAF Shaker Baghouse
- EAF Shaker Baghouse Inspection Checklist [alt. used if performed by 3rd party]
- EAF Shaker Baghouse – Bag Condition [alt. used if performed by 3rd party]

PERIODIC INSPECTION GUIDE – EAF SHAKER BAGHOUSE

Each baghouse is to be inspected via the following protocol by a qualified outside contractor at least annually *[Defer to outside contractor protocol, if available]*

1. Start baghouse. Record readings of pressure drop gages, motor amperage, fan speed, and air volume on the *Baghouse Checklist*.
   a. Before taking pressure drop gage readings check gage calibration using separate U tube, and back flush tubing with clean, dry compressed air.
   b. Take pitot tube traverse of main duct to obtain air volume.

2. With baghouse running, check the housing, access doors, discharge valves and main ductwork for leaks.

3. Check baghouse housing, hoppers and support legs for structural Integrity, rust and condition of paint.

4. During start up and while baghouse Is running, check for visible discharge from exhaust stack.

5. Check bag cleaning cycle.
   a. Stop exhaust fan and operate shake cycle.
   b. Observe operation of shaking mechanism noting any undue vibration, noise, binding, etc., that needs correcting.
   c. When shaking cycle Is complete, turn off main power and lock out electrical disconnect switches.
   d. Inspect shaker mechanism checking motor, "V" belts, sheaves, mounting bolts and belt alignment.
   e. Check frequency of shake cycle.

6. Check exhaust fan operation.
   a. With exhaust fan running, check the operation of the fan bearings.
   b. When bearing check Is complete turn off main power and lock out electrical disconnect switches.
   c. Check "V" belt tension, alignment, condition of sheaves, mounting bolts, vibration isolators, and flex connections.
   d. Remove fan housing inspection door and hand check fan wheel balance, gap between Inlet cone and wheel and any material build up on wheel.

7. Shut down baghouse and check the operation of discharge valve and screw conveyors. If the baghouse is equipped with screw conveyors, check bearing packing and cover connections for leaks.

8. Enter all data on *Baghouse Check List* and leave one copy with the Maintenance Superintendent / Manager, and forward one copy to the Plant Manager for review. Review all data with plant personnel before leaving Job site.

9. Leak check baghouse bags.
    a. Close access doors, lock-out shaker disconnect switches, and start exhaust fan.
    b. Introduce fluorescent tracer powder at a convenient point on suction side of baghouse. Use 1 lb. of tracing powder per 1 ,000 square feet of baghouse bag cloth area.
    c. Allow baghouse fan to run for 30-60 seconds minimum to allow tracing powder to be drawn Into bags.
    d. Stop baghouse fan, lock out disconnect switch.
    e. Using a black light, individually check each bag and bag plate for leaking fluorescent powder.
    f. Check bags for moisture.
    g. Check bag tension (shaker baghouse).
    h. Corrective Action: Replace all bags shown to be leaking.
    i. Corrective Action: When leaks are discovered, the clean side of the baghouse must be cleaned of all contamination and re-tested with a different color fluorescent powder.
    j. Note any signs of daylight showing In baghouse housing and caulk them from the outside using silicone caulking.
    k. Enter all data on *Baghouse Bag Condition* sheet, leaving one copy with the Maintenance Superintendent, and forward one copy to the Plant Manager for review.
    l. Return all valves, doors, guards, disconnect switches, etc. to ON position.

10. Check ductwork from emission source to baghouse.
    a. Check for:
        i. Holes;
        ii. Cracks;
        iii. Rust; and,
        iv. Dents.
    b. As much as practicable, examine interior to ductwork for particulate matter buildup.
    c. Corrective Actions:
        i. Repair/replace damaged ductwork;
        ii. Remove (clean) particulate matter buildup impeding flow; and/or,
        iii. Straighten, enlarge or smooth-out sections of ductwork where particulate matter collects

MAYNARD STEEL CASTING COMPANY **EAF SHAKER BAGHOUSE INSPECTION CHECKLIST**

Baghouse No. _____ Inspected By: _____

Date Inspected: _____

Item	Condition				
	Good	Service-able	Repair/ Replace	Comments & Corrective Actions (CA)	Date CA Completed
HOPPERS					
1. SIDE WALLS					
2. PAINT					
3. VIBRATORS					
4. DISCHARGE VALVES					
5. SCREW CONVEYOR					
6. BEARINGS/PACKING					
7. ROTARY LOCK					
8. HOPPER ENCLOSURE					
HOUSING					
1. SIDE WALLS					
2. AIR LEAKS/CAULKING					
3. SUPPORT STRUCTURE					
4.PAINT					
5. BAG PLATE					
ACCESS DOORS					
1. HINGES					
2. LATCHES					
3. GASKET					
4. FRAME					
5. DOOR PANEL					
6. PAINT					
EXHAUST FAN					
1. BELT TENSION					
2. BELT ALIGNMENT					
3. BELT CONDITION					
4. SHEAVE CONDITION					
5. MOTOR CONDITION					
6. INNER BEARING					
7. OUTER BEARING					
8. ISOLATORS ENGAGED					
9. MOUNTING BOLTS					
10.1NLET FLEX CONN.					
11. OUTLET FLEX CONN.					
12. FAN CONE/WHEEL GAP					
13. FAN CONE					
14. BELT GUARD					
15. BEARING SHAFT GUARD					
16. HAND FAN BALANCE					
17. WHEEL CLEANLINESS					
18. SHAFT SEAL					

SHAKER CLEANING					
1.MOTOR					
2.SHEAVES					
3. BELT TENSION					
4. BELT ALIGNMENT					
5. SHAKER LOGS					
&.BEARINGS					
7.HOOKS					

SYSTEM MEASUREMENTS

FAN SHAFT TACHOMETER READING, RPM: _____ DESIGN RPM: _____

BEARING VIBRATION READING - VELOCITY, INCHES/SECOND

- INNER BEARING _____
- OUTER BEARING _____
- MOTOR BEARING _____

MAIN DUCT VOLUME CFM _____ DESIGN CFM: _____

POINT TRAVERSE _____

MOTOR AMPERAGE

- NAMEPLATE _____ AMPS _____ HP
- ACTUAL AMPERAGE _____ L1 _____ L2 _____ L3

PRESSURE DROP GAUGE READING, IN-H2O _____

ADDITIONAL COMMENTS

INTERNAL REVIEW & CORRECTION ACTION COMPLETION STATUS

Reviewed By:	**Name**	**Initial**	**Date**
Maintenance Superintendent / Mgr.			
Safety/Environmental Manager			
Plant Manager			

Corrective Actions Completed:

Maintenance Superintendent / Mgr.			
Safety/Environmental Manager			
Plant Manager			

MAYNARD STEEL CASTING COMPANY **EAF SHAKER BAGHOUSE - BAG CONDITION**

Baghouse No. _____ Inspected By: _____

Date Inspected: _____

INSTRUCTIONS

1. Draw outline of baghouse around corresponding number of bag rows.
2. Show walkways.
3. Show inlet and outlet.
4. Show bag condition by placing appropriate letter for bag condition over corresponding bags, as follows:
   - F Fallen Bag
   - T Bag Tied Off
   - L Leaking Bag (not replaced or tied off)
   - R Replaced Bag
   - M Bag Hole Blocked

ROW

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

COMMENTS & CORRECTION ACTIONS

ROW

	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

COMMENTS & CORRECTION ACTIONS

INTERNAL REVIEW & CORRECTION ACTION COMPLETION STATUS

Reviewed By:	**Name**	**Initial**	**Date**
Maintenance Superintendent / Mgr.			
Safety/Environmental Manager			
Plant Manager			

Corrective Actions Completed:	**Date CA Completed**	**Name**	**Initial**	**Date**
Maintenance Superintendent / Mgr.				
Plant Manager				

Appendix D
MPAP Review Forms

- MPAP Semiannual Compliance Review
- MPAP 5-year Review

This MPAP is an enforceable document under Maynard Steel air operating permit (Condition I.ZZZ.7); therefore, adherence to the elements of this MPAP is required. Maynard Steel must document conformance with this plan as part of required semiannual compliance monitoring reports, and in a required annual compliance certification. Consequently, the Maintenance Superintendent and the Plant Manager shall certify every six months, by signature, that:

1. The facility has operated according to this MPAP;
2. There were no deviations from the MPAP;
3. There were no known exceedances of applicable PM, HAP or fugitive emissions limits; and
4. There were no malfunctions that were not properly and promptly notified to the DNR or accordance with Section 5.1 of the plan.

Note below whether or not each of these conditions were satisfied during the corresponding semiannual period. If not, then explain. By initialling below, you are certifying to the best of your knowlege that the information supplied after reasonable inquiry is complete, accurate and true.

Review Period		Title	Conformance with Above-Listed Criteria		Certification		
Year	Q1-2 / Q3-4		Yes / No	If No, explain	Name	Initial	Date
2015	Q1-2	Mt. Superintendent / Manager	N/A - Plan Finalized September 2015				
2015	Q1-2	Plant Manager	N/A - Plan Finalized September 2015				
2015	Q3-4	Mt. Superintendent / Manager					
2015	Q3-4	Plant Manager					
2016	Q1-2	Mt. Superintendent / Manager					
2016	Q1-2	Plant Manager					
2016	Q3-4	Mt. Superintendent / Manager					
2016	Q3-4	Plant Manager					

The MPAP is required to be reviewed at least every 5-years. The following serves to document the completion of this review and to indicate if any changes are appropriate as a result of this review. If additional reviews are conducted in the interim or if the MPAP is otherwise modified, such events can also be documented below.

Starting Date of Last Plan Review / Update: 7/31/2015
Next Required 5-year Review: 7/31/2020

Review Period		Reviewed By			Changes Needed			Next 5-yr
Year	Date	Name	Initial	Date	Yes / No	If yes, explain	Date Made	Review

Appendix E
EAF Emission Control System Checklists & Operating Parameter

- EAF Emissions Control – Parametric Operating Limits
- EAF Emissions Control Checklist – Maintenance Pre-Operation
- EAF Emissions Control Checklist – Melt Department Operation
- EAF Emissions Control Checklist – Re-Bagging

The parametric operating limits include the baghouse pressure drop, and the hood static pressure for the EAF Fume Collection Systems (FCS).

Baghouse Total Pressure Drop: In general, the pressure drop is used as an indicator of the relative performance of the baghouse, and includes both a lower and upper bound. A low pressure drop can be indicative of air bypassing or otherwise unacceptably passing through a bag (e.g., bag break, improperly seated bags, etc.). Conversely, an elevated pressure drop can translate into a reduction in exhaust flow and also result in excess strain on the fibers of the bags, which can stretch the fibers and expand the pathways through which dust can pass.

The current ***permitted operating range*** of 1 to 8 inches of water column (in-H2O) under the air operating permit is the range outside of which the operation of the EAF is deemed to be a deviation for the purpose of the air permit. The ***recommended operating range*** is established per the bag manufacturer, baghouse maintenance contractor or other similarly qualified entity, and corresponds to the range over which the baghouse is actually to be operated in practice, which is generally more restrictive than the permitted operating range. In the unlikely event that the recommended operating range is outside the permitted operating range, then a permit modification would be needed to ensure that operation of the baghouse is compliant with permit conditions. The end points of the recommended operating range are defined as the Low-Low and High-High set points and are not to be exceeded while operating, except in accordance with the O&M plan. In the event that either end point is triggered, alerts are provided both to the onsite operator (via visual and audible alarms), and remotely (via e-mail, text, or call) to designated responsible individuals. To provide onsite warning to the operator in advance of such a condition, Low-High and High-Low alarm set points are established within the recommended operating range to allow time for actions to be implemented, where appropriate, to reduce the potential for the monitored parameter to actually exceed a recommended operating range.

Hood Static Pressure: The hood static pressure is used to ensure that the sidedraft hood is providing sufficient draw throughout the heat. Operating setpoints are EAF-specific and are generally based on empirical information related to various factors (e.g., hood, duct, baghouse configuration, etc.). Changes in such factors that reduce the draw can be manifested in a decrease in the hood static pressure. For example, an increase in the pressure drop across the baghouse will tend to result in a reduction in the hood static pressure. Similarly, damage to ductwork cause an increased pressure drop across the system that contributes to a decreased hood static pressure. A Hi-Low setpoint is established as an alert that the hood static pressure is approaching its minimum or Low-Low setpoint; thereby allowing time for actions to be implemented, where appropriate, to increase the hood static pressure before actually exceeding the Low-Low setpoint. If the hood static pressure drops below the Low-Low point, a the draw is deemed to be inadequate to provide effective capture.

EAF		Baghouse Total Pressure Drop Alarm, in-H2O				Hood Static Pressure, in-H2O		
		Alert		Warning		Alert	Warning	Starting Target
No.	Equip. ID	Low-Low	High-High	Low-High	High-Low	Low-Low	High-Low	Low-High
4	4296	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - FCS	TBD - FCS	TBD - FCS
5	3158	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - FCS	TBD - FCS	TBD - FCS
6	0170	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - FCS	TBD - FCS	TBD - FCS
7	3174	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - FCS	TBD - FCS	TBD - FCS

MAYNARD STEEL CASTING COMPANY **EAF EMISSIONS CONTROL CHECKLIST - MAINTENANCE PRE-OPERATION**

EAF No. _____

Date _____

Completed By: _____

INSTRUCTION: This checklist is to be completed after the last heat of a shift is performed - not necessarily during the same shift. If a corrective action is needed, but could not be successfully implemented, then explain in the 'Additional Comments' section and complete a 'Malfunction Log' sheet.

	Completed (Y/N/NA)	Corrective Action Needed (Y/N)	Corrective Action Implemented Successfully (Y/N/NA)
1. Complete off-line shakedown of the baghouse (with fan off) and confirm that baghouse is functioning properly (e.g., shakers motors operating and actuating shaker mechanism).			
2. Confirm that off-line shakedown has returned the total pressure drop (with fan running) to a level that is within the Low-High to High-Low set point range, and that the hood static pressure (HSP) is within range of the Low-High. See 'Reference Table' at the bottom of this page for EAF-specific set points. Record Total Pressure Drop After Completing Off-Line Shakedown of Baghouse: _____ in-H2O Record HSP After Completing Off-Line Shakedown of Baghouse: _____ in-H2O			
3. Visually inspect the sidedraft hood, telescoping duct and inplant ductwork for obvious signs of damage or deterioration that may affect capture. In the case of EAF 4, visually inspect the enclosing hood and associated inplant ductwork for obvious signs of damage or deterioration that may affect capture.			
4. Check deflector plate above the slag door for obvious signs of damage or deterioration.			
5. Check air curtain (west end only - "Greensand Foundry") to verify that it is functioning properly (turn on / off).			
6. Review the 'EAF EMISSIONS CONTROL CHECKLIST - MAINTENANCE PRE-OPERATION' from the last heat on this EAF and follow-up on corrective actions that may be necessary.			
7. Check for open / broken windows (i.e., excluding cracks) along upper reaches of the west end of the melt department (i.e., "Greensand Foundry").			
8. On Occurrence: If the EAF refractory has been rebricked since the last heat, then check that it has been properly installed to the appropriate level to permit the addition of adequate sand to maintain the sand interface layer.			

ADDITIONAL COMMENTS

INTERNAL REVIEW & CORRECTION ACTION COMPLETION STATUS

Reviewed By:	**Name**	**Initial**	**Date**
Maintenance Shift Supervisor			
Maintenance Superintendent / Manager			
Melt Shop - Night Manager / Superintendent			

REFERENCE TABLE - SET POINTS

EAF		Baghouse Total Pressure Drop Alarm, in-H2O				Hood Static Pressure, in-H2O		
		Alert		Warning		Alert	Warning	Starting Target
No.	Equip. ID	Low-Low	High-High	Low-High	High-Low	Low-Low	High-Low	Low-High*
4	4296	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - FCS	TBD - FCS	TBD - FCS
5	3158	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - FCS	TBD - FCS	TBD - FCS
6	0170	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - FCS	TBD - FCS	TBD - FCS
7	3174	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - FCS	TBD - FCS	TBD - FCS

** Starting level must be within 10% of Low-High or as otherwise established via the execution of the FCS Protocol.*

MAYNARD STEEL CASTING COMPANY — **EAF EMISSIONS CONTROL CHECKLIST - MELT DEPARTMENT OPERATION**

EAF No. _____ Heat Nos. _____

Date _____ _____

Completed By: _____ _____

INSTRUCTION: This checklist is to be completed for each melt shift. If a corrective action is needed, but could not be successfully implemented, then explain in the 'Additional Comments' section and complete a 'Malfunction Log' sheet.

	Completed (Y/N/NA)	Corrective Action Needed (Y/N)	Corrective Action Implemented Successfully (Y/N/NA)
1. Startup Conditions [Prior to Charging 1st Heat]			
a. For west end operations ("Greensand Foundry"), roof-level windows are closed			
b. Baghouse (BH) fan for active EAF is turned ON - Plus, for west end operations, at least one other EAF BH is ON			
c. Total Pressure Drop across BH is within the Low-High to High-Low range [Starting ΔP: _____ in-H2O]			
d. Hood Static Pressure (HSP) within range of Low-High point - see Ref. Tab [Starting HSP: _____ in-H2O]			
e. For west end operations ("Greensand Foundry"), air curtain blower is turned ON			
f. Deflector Plate is securely mounted with proper orientation			
2. Operation Conditions [During each Heat per Melt Shift]			
a. Charging - Bucket aligned over EAF to reduce scrap on sand layer			
b. Charging - Scrap that may have fallen on sand layer is removed			
c. Charging - Sand is added and leveled, as necessary			
d. Pre-Melt - Cover alignment is checked / sand added & leveled as needed for proper fit			
e. Pre-Melt - Connection between hood and duct is visually checked as OK			
f. Melt - Hood static pressure was at or above the High-Low set point throughout heat - see Ref. Table			
If not, was hood static pressure at or above the Low-Low set point - see Ref. Table?			
g. Melt - Total Pressure Drop across BH was within the Low-High to High-Low range through heat - see Ref. Table			
If not, was Total Pressure Drop across the BH was within the Low-Low to High-High range - see Ref. Table?			
h. Melt - Sand layer maintained throughout heat			
i. Melt - Sample media deposited in EAF or a dedicated bin (slag tub maintained free of consumables)			
j. Melt - Emissions during oxygen lancing visibly captured by the fume collection system			
3. Shut-down Conditions [After last heat] - Until visible indoor emissions have substantially cleared:			
a. Each EAF baghouse that operated during the melt shift remains ON.			
b. For west end operations ("Greensand Foundry"), the air curtain remains ON.			

ADDITIONAL COMMENTS

INTERNAL REVIEW & CORRECTION ACTION COMPLETION STATUS

Reviewed By:	**Name**	**Initial**	**Date**
Melt Supervisor			
Night Manager / Superintendent			

REFERENCE TABLE - SET POINTS

EAF		Baghouse Total Pressure Drop Alarm, in-H2O				Hood Static Pressure, in-H2O		
		Alert		Warning		Alert	Warning	Starting Target
No.	Equip. ID	Low-Low	High-High	Low-High	High-Low	Low-Low	High-Low	Low-High*
4	4296	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - FCS	TBD - FCS	TBD - FCS
5	3158	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - FCS	TBD - FCS	TBD - FCS
6	0170	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - FCS	TBD - FCS	TBD - FCS
7	3174	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - FCS	TBD - FCS	TBD - FCS

** Starting level must be within 10% of Low-High or as otherwise established via the execution of the FCS Protocol*

MAYNARD STEEL CASTING COMPANY **EAF EMISSIONS CONTROL CHECKLIST - RE-BAGGING**

EAF No. _____

Date _____

Completed By: _____

INSTRUCTION: Unless comparable documentation is otherwise available (e.g., baghouse maintenance contractor service record), this checklist is to be completed after re-bagging an EAF baghouse.

	Completed (Y/N/NA)	Corrective Action Needed (Y/N)	Corrective Action Implemented Successfully (Y/N/NA)
1. New filter bags require a pre-coating before normal operation can be resumed. Confirm that precoating procedures developed by the manufacturer, baghouse maintenance contractor, or similarly qualified entity were followed to properly coat new bags. Date of Rebagging: _____			
2. After rebagging and precoating is complete, confirm that the total pressure drop (with fan running) is at a level that is within the Low-High to High-Low set point range. See 'Reference Table' at the bottom of this page for EAF-specific set points. Record Total Pressure Drop After Completing Rebagging & Precoating: _____ in-H2O			

ADDITIONAL COMMENTS

INTERNAL REVIEW & CORRECTION ACTION COMPLETION STATUS

Reviewed By:	**Name**	**Initial**	**Date**
Maintenance Superintendent / Manager			

REFERENCE TABLE - SET POINTS

EAF		Baghouse Total Pressure Drop Alarm, in-H2O				Hood Static Pressure, in-H2O		
		Alert		Warning		Alert	Warning	Starting Target
No.	Equip. ID	Low-Low	High-High	Low-High	High-Low	Low-Low	High-Low	Low-High*
4	4296	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - FCS	TBD - FCS	TBD - FCS
5	3158	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - FCS	TBD - FCS	TBD - FCS
6	0170	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - FCS	TBD - FCS	TBD - FCS
7	3174	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - Fabco	TBD - FCS	TBD - FCS	TBD - FCS

** Starting level must be within 10% of Low-High or as otherwise established via the execution of the FCS Protocol*

Appendix F
Maintenance Occurrence Log

MAYNARD STEEL CASTING COMPANY **MALFUNCTION OCCURRENCE LOG**

Facility ID No. 241005710
Permit No. 241005710-P20

Malfunction Information

Malfunctioning Device (Include WDNR Process ID No., if applicable): _____

Description of Malfunction

Time / date incident discovered: _____

Time / date incident began: _____ Time / date incident ended: _____ Total Duration: _____

Suspected Cause:

Response Actions

Actions taken to address the malfunction and to minimize emissions during this incident:

Has the deviation or malfunction been fully resolved? Yes No
If not, then explain:

Incident Review

Were there any excess emissions during the incident? Yes No
If so, describe:

Is this deviation or malfunction included in the O&M and MPAP Plan? Yes No
Were response actions consistent with the O&M and MPAP Plan? Yes No
If not, then explain:

If the actions taken were not consistent with the O&M and MPAP Plan, and excess emissions occurred, has the WDNR been notified, as required (i.e., immediately in the event of a hazardous air spill, by the next business day for other deviations)? Yes No

Reviewed By:	**Name**	**Initial**	**Date**
Mt. Supervisor / Night Shifts Super.			
Plant Manager			
Safety/Environmental Manager			

Appendix G
MPAP Spare Parts Inventory

MAYNARD STEEL CASTING COMPANY
MPAP Spare Parts Inventory

Maynard Steel currently maintains at least one of each of the following spare parts in inventory:

1) Actuator motor
2) Shaker motor and shaker arm
3) Diaphragm kit
4) Belt
5) Bearing
6) Bearing flange
7) Bearing pillow
8) Bearing wood
9) Bushing
10) Connecting shaft
11) Shaft pin
12) Solenoid valve
13) Starter parts
14) Miscellaneous mechanical parts
15) Outside disposal bag
16) Magnehelic gage
17) Baghouse filter bag

One or more of these parts may be out of stock at any given time if it has been removed from inventory for use in its designated purpose. In which case, a replacement part will be promptly ordered to re-stock the inventory, accordingly.