

United States Steel Corporation

Great Lakes Works

State of Michigan CSR Part 9 R336.1911

MDEQ Emissions Limitations and Prohibitions - Miscellaneous

- **Malfunction Abatement Plans**

Applicable to the following:

- **Processes:**
 - Blast Furnace Casting
- **Capture Systems:**
 - B-2 Blast Furnace Casthouse Emissions Control System
 - D-4 Blast Furnace Casthouse Emissions Control System
- **Control Equipment:**
 - B-2 Blast Furnace Casthouse Baghouse
 - D-4 Blast Furnace Casthouse Baghouse
- **Continuous Parametric Monitoring Systems:**
 - Process Damper Position
 - Baghouses
 - Bag Leak Detection (Negative Pressure Baghouses Only)
 - Fan Amps

Table of Contents

	<u>Section</u>	<u>Page</u>
1.0	Introduction	3
	1.1 Background	
	1.2 Purpose	
	1.3 Applicability	
2.0	Malfunction Abatement Plans	5
	2.1 Scope	
	2.2 Plan Elements	
3.0	Plan Maintenance, Recordkeeping and Reporting	11
	3.1 Initial Plan Requirements	
	3.2 Plan Revisions	
	3.3 Recordkeeping	
	3.4 Special Startup, Shutdown and Malfunction Reporting Requirement	

1.0 INTRODUCTION

1.1 Background

1.1.1 State of Michigan CSR Part 9 R336.1911

The State of Michigan environmental regulations and the facility Title V Renewable Operating Permit (ROP) requires the owner / operator responsible for the operation of a source of an air contaminant to prepare a malfunction abatement plan.

1.2 Purpose

1.2.1 State of Michigan CSR Part 9 R336.1911

This standard requires the owner / operator of a permitted source of an air contaminant to develop and implement a malfunction abatement plan to prevent, detect, and correct malfunctions or equipment failures that result in emissions limit violations.

1.3 Applicability

1.3.1 NESHAP - 40 CFR 63 Subpart FFFFF

1.3.1(a) Operation and Maintenance Plan

The Operation and Maintenance Plans are not included in this document. They are included in a separate document.

1.3.1(b) Site-Specific Monitoring Plan

The Site-Specific Monitoring Plans are not included in this document. They are included in a separate document.

1.3.1(c) Startup, Shutdown and Malfunction Plans

40 CFR 63.7810(c) requires that a written Startup, Shutdown and Malfunction Plan be developed and implemented according to the requirements of 40 CFR 63.6(e)(3), which states in part:

"...The owner or operator of an affected source must develop and implement a written startup, shutdown and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown and malfunction, and a program of corrective action for malfunctioning process and air pollution control and monitoring equipment used to comply with the relevant standard."

The Startup, Shutdown and Malfunction Plans are included in a separate document. Applicable information and procedures common to both the Start-up Shutdown, and Malfunction Plan and Malfunction Abatement Plan are cross referenced.

1.3.2 State of Michigan CSR Part 9 R336.1911

The development of the NESHAP - 40 CFR 63 Subpart FFFFF Startup, Shutdown and Malfunction Plan will address and incorporate the requirements for the Malfunction Abatement Plan (MAP) specified in Rule 911 (2) for all permitted sources of an air contaminant.

2.0 MALFUNCTION ABATEMENT PLAN

2.1 SCOPE

The following process, particulate emission control and monitoring equipment are subject to State of Michigan CSR Part 9 R336.1911 requirement for malfunction abatement plan development and used to comply with the NESHAP 40 CFR 63 Subpart FFFFF standard are covered by this plan:

2.1.1 Process Equipment

- i) B-2 Blast Furnace Casthouse Emissions Control System
- ii) D-4 Blast Furnace Casthouse Emissions Control System

2.1.2 Particulate Emission control devices

- i) B-2 Blast Furnace Casthouse Baghouse
- ii) D-4 Blast Furnace Casthouse Baghouse

2.1.3 Monitoring Equipment

- i) Bag Leak Detectors (Negative Pressure baghouses only)
- ii) Fan Motor Current Sensors
- iii) Pressure / Differential Pressure Sensors
- iv) Damper Position Limit Switches

2.2 PLAN ELEMENTS

2.2.1 Blast Furnace Operation Start-up

2.2.1.1 During the start-up of a blast furnace, the following situations that impact air emissions discharges may occur:

Issue	Operation	Corrective Action
Blast Furnace Blow-in (Extended outage)	Monitoring	Ensure the Blast Furnace system is in normal operation

2.2.1.2 Great Lakes Works has established Procedures for the startup of the facility blast furnace operations.

USSC-L-P-1510-04-19 – Normal Start up of a Blast Furnace

USSC-L-P-1510-05-12 – Control of Casthouse Emissions

USSC-L-P-1510-05-26 – Furnace Start-up Checklist

USSC-L-P-1510-0901 – A-1 & D-4 Furnaces Emission Control System
Operation

USSC-L-P-1510-0902 – B-2 Furnace Emission Control System Operation

USSC-L-P-1510-09-03 – Casting With Only One Operating Casthouse
Emissions Control Plan

2.2.2 Blast Furnace Operation Shut down

2.2.2.1 During the shut down of a blast furnace, the following situations that impact air emissions discharges may occur:

Issue	Operation	Corrective Action
Blast Furnace Blow Down (Extended outage)	Monitoring	Ensure the Blast Furnace system is in normal operation

2.2.2.2 Great Lakes Works has established Procedures for the shutdown of the facility blast furnace operations.

USSC-L-P-1510-06-15 – Furnace Shutdown Procedure

2.2.3 Blast Furnace Malfunction

2.2.3.1 During the malfunction of a blast furnace, the following situations that impact air emissions discharges may occur:

Issue	Operation	Corrective Action
Slips	Monitoring	Ensure the Blast Furnace system is in normal operation

USSC-L-P-1510-06-12 – Abnormal Conditions – D-4 Furnace

USSC-L-P-1510-06-20 – Abnormal Conditions – Furnace Roll

2.2 PLAN ELEMENTS

2.2.4 Blast Furnace Casthouse Emissions System Malfunction

2.2.4.1 During the malfunction of the Blast Furnace Casthouse Emissions System and CMPS (fan amps measuring system and bag leak detection systems), the following situations may occur:

Issue	Operation	Corrective Action
Fan Failure	Preventive / Predictive Maintenance	Repair as soon as possible.
Sudden high opacity from exhaust	Bag leak detector alarms.	Replace broken bags as soon as possible. Notify Environmental per established malfunction reporting procedure.
Fan amp measuring system failure	Preventive / Predictive Maintenance	Repair as soon as possible. Notify Environmental per established malfunction reporting procedure.
Computer failure	Preventive / Predictive Maintenance	Repair as soon as possible. Notify Environmental per established malfunction reporting procedure.
Bag leak detector failure	Preventive / Predictive Maintenance	Repair as soon as possible. Notify Environmental per established malfunction reporting procedure.

2.2.4.1.1 Great Lakes Works has established the Procedures for trouble shooting of the facility Blast Furnace Casthouse Dust Collector Emissions Control System malfunctions.

2.2.4.1.2 Great Lakes Works – Ironmaking has established a facility-wide reporting procedures USSC-L-P-1510-01-05 for the reporting of upset conditions and malfunctions of process equipment and pollution control equipment.

3.0 PLAN MAINTENANCE, RECORDKEEPING AND REPORTING

3.1 NESHAP 40 CFR 63 SUBPART FFFFF

3.1.1 Initial Plan Requirements

- The Operation and Maintenance Plan, Site-Specific Monitoring Plan and Startup, Shutdown and Malfunction Plan must be developed and implemented by May 22, 2006
- The plans are not required to be submitted to or approved by U.S. EPA or MDEQ unless required the Title V operating permit.
- Failure to meet any condition in a plan is a deviation and must be reported as such in the semi-annual and annual deviation report.

3.1.2 Plan Revisions

- Plans may be revised at any time provided that notification is given to the permitting agency in the next periodic Title V compliance certification.

3.1.3 Recordkeeping

- All current plans and superceded plans must be maintained for the life of the affected source. All other information necessary to demonstrate compliance with each plan requirement must be kept on-site for a period of at least 5 years.

3.1.4 Special Startup, Shutdown and Malfunction Reporting Requirement

- If, at any time, the Startup, Shutdown and Malfunction Plan is not followed during a startup, shutdown or malfunction event, the failure must be reported by telephone, FAX or E-Mail within 2 days following the failure to the permitting agency.
- Within 7 days following the end of the startup, shutdown or malfunction event, a letter must be submitted including the following information:
 1. Name and title of Reporting Official
 2. Certifying signature of the plant Responsible Official
 3. How the startup, shutdown or malfunction event happened
 4. What the response to the event was
 5. Reasons the Startup, Shutdown and Malfunction Plan was not followed
 6. Whether any regulated HAP emissions or monitored parameters were higher or different from their allowable values during the startup, shutdown or malfunction event.
- Within 45 day of the end of the event, the Startup, Shutdown and Malfunction Plan must be revised to describe the additional or corrected response in the event that cause happens again.