PC MACT Startup, Shutdown, and Malfunction Plan
Raw Grind System
Sources: FG: RAW MAT, RAW MILL SYS

1.0 Source Description

The Raw Grind System is used to grind and combine raw materials prior to feeding them into the pyroprocessing systems. Its three main system components are:

- A raw material roller press system that prepares individual raw materials and delivers them to the raw mill. The system includes silos, the hammermills, and conveyors used to deliver material to the raw mill.
- Raw mill number 14 that prepares raw materials for combination. The system includes a limestone bin, an iron ore bin, a roll press, and conveyor systems.
- Raw mill number 15 that prepares raw materials for combination. The system includes a limestone bin, a roll press, and conveyor systems.

2.0 System Emission Points and Air Pollution Control Equipment

During Raw Grind System operations, particulate matter is emitted at several emission points. The system includes hammer mills, roller presses, and a number of fabric filers to control particulate matter emissions. The following table summarizes system emission points and applicable air pollution control devices (APCDs).

Emission Point #	Description	Air Pollution Control Device	Equipment #
17-325	Dust collector, raw material transfer	Fabric filter	17-325
17-425	Dust collector, raw material transfer	Fabric filter	17-425
20-274	Dust collector, 2 stone, 1 shale bins	Fabric filter	20-274
20-271	Dust collector, raw grind 14 transfer pts	Fabric filter	20-271
21-271	Dust collector, raw grind 15 transfer pts	Fabric filter	21-271
20-268	Raw mill 14 aux baghouse	Fabric filter	20-268
20-269	Raw mill 14 baghouse	Fabric filter	20-269
20-270	Main baghouse for twin cyclones 20-080	Fabric filter	20-270
20-275	Dust collector, air slide conveyor, raw grind 14	Fabric filter	20-275
21-268	Raw mill 15 aux baghouse	Fabric filter	21-268
21-269	Raw mill 15 baghouse	Fabric filter	21-269

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Emission Point #	Description	Air Pollution Control Device	Equipment #
21-270	Main baghouse for twin cyclones 21-080	Fabric filter	21-270
21-275	Dust collector, air slide conveyor, raw grind 15	Fabric filter	21-275
25-275	Dust collector, 5 group raw feed silo	Fabric filter	25-275
26-263	Dust collector, 6 group raw feed silo	Fabric filter	26-263

3.0 Applicable Emission Limit

The emission limit applicable to the Raw Grind System is the following:

- Visible emissions must not exceed 10 percent opacity (40 CFR 63.1348).

4.0 Procedures to be followed during Raw Grind Operation

4.1 Startup

Raw Grind System startup occurrences and durations are defined as follows: Startup begins when the first item in the sequential start procedure is initiated. Startup ends when the sequential start procedure is complete and, where applicable, when the system maintains production.

Raw Grind System startup procedures are provided in the Lafarge Standard Operating Procedure (SOP) documents for Raw Material to roller press, and Raw Mills 14 and 15. Applicable SOPs include the following:

- 20-040 Roll Press System
- 21-040 Roll Press System

These procedures are kept in the Environmental Department, where they are maintained. The SOPs discuss how the plant shall be operated, and are used for job-specific training.

4.2 Shutdown

Raw Grind System shutdown occurrences and durations begin when the first item in the sequential stop procedure is initiated, and end when the sequential stop procedure is complete.

Raw Grind System shutdown procedures are provided in the Lafarge SOPs for Raw Material to roller press, and Raw Mills 14 and 15. Applicable SOPs include the following:

- 20-040 Roll Press System
- 20-040 Roll Press System

As with the startup procedures, the shutdown procedures are maintained in the Environmental Department. The SOPs include these procedures and are used for job-specific training.

4.3 Malfunction

Operator procedures for responding to malfunctions are detailed in the Lafarge SOP titled Malfunctions Affecting Environmental Systems (AIR). These procedures include the prompt elimination of any excess emissions and proper maintenance of all records.

Potential malfunction event scenarios that could result in excess emissions include the following types of malfunctions:

1. Bag failure (e.g., due to rips/tears, bag blinding due to moisture in gas, timer failure, magnahelic failure, manometer failure)
2. Power failure
3. Plugging of airslide screw

5.0 Recordkeeping

5.1 Startups and Shutdowns

The occurrence and duration of startups and shutdowns of the Raw Grind System are recorded manually in the logbook in the Shift Coordinator's office and electronically in the Plant Production Database. In the event that startups or shutdowns are not conducted in accordance with this plan, the Environmental Manager (or a designated representative) will be notified within 24 hours to ensure required reporting deadlines are met.

5.2 Malfunctions

For purposes of this plan, malfunctions are defined as sudden, infrequent, and not reasonably preventable failures of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner and that result in excess emissions. The occurrence and duration of each malfunction of the Raw Grind System and its air pollution control devices are recorded manually and electronically.

To certify that any malfunction events occurring during the shift were responded to in accordance with this plan, the logbook located in the Shift Coordinator's office is reviewed regularly. In the event that malfunctions are not responded to in accordance with this plan, the Shift Coordinator will record all actions inconsistent with the malfunction response procedures specified here, and the Environmental Manager (or a designated representative) will be notified within 24 hours to ensure required reporting deadlines are met.

6.0 Notifications and Reports to Regulators

The Environmental Manager (or a designated representative) will provide verbal notification to the Michigan Department of Environmental Quality (MDEQ) Regional Office within two working days following the occurrence of actions inconsistent with this Raw Grind System SSM Plan, followed by written letter within seven working days.

The Environmental Manager (or a designated representative) will document the occurrences of operator actions consistent with this Raw Grind System SSM Plan in the Semiannual Compliance Reports submitted to MDEQ.

7.0 Periodic Review and Update of this Startup, Shutdown, and Malfunction Plan

The Environmental Manager (or a designated representative) will review this Raw Grind System SSM Plan once per year for adequacy and currency. Documentation of the annual review or update will be retained in Environmental Department files for five years. In addition, the Environmental Manager (or a designated representative) will update this plan upon the occurrence of a malfunction event scenario that is not included in this plan. Superseded versions of this plan will also be retained on file in the Environmental Department for a period of five years.

8.0 Startup, Shutdown, and Malfunction Plan Revision History

Revision	Date	Purpose
1.0	February 2004	Initial plan generation
2.0	June 2008	Production Increase
3.0	October 2011	ROP Renewal