SECONDARY ALUMINUM NESHAP

OPERATION, MAINTENANCE, AND MONITORING PLAN

INCLUDING

START-UP, SHUTDOWN, AND MALFUNCTION PLAN

REAL ALLOY RECYCLING, INC.
COLDWATER, MICHIGAN

ISSUED: MARCH 2003
FIRST REVISION: OCTOBER 2003
SECOND REVISION: SEPTEMBER 2004
THIRD REVISION: FEBRUARY 2005
FOURTH REVISION: JULY 2005
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TWELFTH REVISION: MARCH 2014
THIRTEENTH REVISION: MARCH 2016

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1 Process and Regulatory Overview

On March 23, 2000 the United States Environmental Protection Agency (EPA) promulgated the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Secondary Aluminum Production (40 CFR 63 Subpart RRR). Aleris Recycling, Inc. (Aleris) is subject to the provisions of the Secondary Aluminum Production NESHAP standard at its facility located at in Coldwater, Michigan.

Aleris is a secondary aluminum production facility (SIC 3341) that produces molten aluminum and recycled scrap ingots (RSI) from the melting and recovery of aluminum from aluminum scrap and aluminum dross. The recovery of aluminum from scrap aluminum and aluminum dross and the subsequent production of molten aluminum and aluminum ingot have been defined by EPA as secondary aluminum production processes.

Aleris operates one reverberatory and two rotary furnaces, which are used to melt aluminum scrap and process aluminum dross. The reverberatory furnace is designed as a sidewell melter/holder unit and operated as a batch process. The purchased and preprocessed scrap is charged to the sidewell of the furnace along with solid flux material and any alloying agents that are required for the production order. Once the materials are molten, the metal flows through a submerged opening to the hearth. Once properly alloyed, the furnace is tapped and the molten aluminum is transferred to refractory lined crucibles for delivery or is cast into sows. The furnace operation is defined as a group 1 furnace per 40 CFR 63, Subpart RRR and is subject to emission limitations as specified by the standard. Only clean charge materials are fed to the main hearth and no reactive flux materials are used in this section of the furnace.

Two rotary furnaces are used to melt aluminum scrap and dross that is directly charged into the furnaces. The rotary furnaces operate on melt cycles that consist of charging, melting, fluxing, alloying (if necessary), molten transfer and salt cake removal (if necessary). On occasion, alloying agents are added to the trough as the furnace is tapped. The aluminum scrap and/or dross is charged directly into the front opening of the furnace along with solid flux material and any alloying agents that are required for the production order. Once the materials are molten, the furnace is tapped by tilting the furnace and pouring the molten metal into a trough where it is transferred to the reverberatory furnace or to refractory lined crucibles for delivery or transferred to sow molds and cast into RSI.

The regulated pollutants for a major source that operates a group 1 furnace are dioxins and furans (D/F), hydrogen chloride (HCl) and particulate (PM). In the reverberatory furnace process, the regulated pollutants are emitted from the sidewell on the melting furnace, which are captured by a hood over the sidewell. The opening of the rotary furnace is enclosed in a hood or vestibule to capture the emissions. To control these process emissions, the exhausts from the capture hoods are ducted to a lime-injected baghouse system. The operation of the furnaces and the associated control devices as described within this document are currently subject to the NESHAP for Secondary Aluminum Production (40 CFR 63 Subpart RRR).

The scrap dryer operated at the facility is also subject to the NESHAP standard. The regulated pollutants for a scrap dryer are D/F, PM, HCl, and total hydrocarbons (THC). Emissions from the dryer are controlled using an afterburner and a baghouse.

The Affected Sources covered by this plan can be found in Appendix C.

The NESHAP for Secondary Aluminum Production requires that an Operation, Maintenance, and Monitoring Plan (OM&M Plan) be developed for all affected sources. A general provision of 40 CFR 63 requires the development and implementation of a Startup, Shutdown, and Malfunction (SSM) Plan for processes subject to a relevant rule. To accommodate these two requirements the following document is a combined OM&M and SSM Plan. This document has been designed to satisfy the requirements found in 40 CFR 63.1510(b), as well as those found in 40 CFR 63.6(e), 40 CFR 63.8(c) and 40 CFR 63.10(c).

2 Operation, Maintenance & Monitoring Plan

2.1. Scope of the Plan

This plan covers the reverberatory furnace, two rotary furnaces and their associated alkaline reagent/carbon injected baghouses, and the scrap dryer and its associated afterburner and baghouse system. The first part of this plan contains the procedures that are followed to meet the requirements of the standard. The last portion identifies the reporting requirements associated with this plan. The following listed issues are addressed as part of the OM&M / SSM plans as specified by 40 CFR 63.

- To address the operating parameters that will be monitored to demonstrate compliance with 40 CFR 63 Subpart RRR.
- To describe the monitoring schedule to be followed to ensure that the necessary data is being collected.
- To establish operating and maintenance procedures to ensure that the emissions from the affected source meet the applicable emission limits or standards in 40 CFR 63.1505.
- To establish operating and maintenance procedures to ensure that the monitoring devices or systems are calibrated and certified to meet the accuracy requirements specified by the NESHAP standard.
- To identify the corrective action procedures that are to be followed to investigate deviation from the set operating values or ranges established as monitoring parameters.
- To provide preventive maintenance for each process and control device consistent with the manufacturer's instructions and recommendations.
- To describe the potential activities that may result in a malfunction and the steps to be taken to prevent the release of excess emissions.

3 General Procedures for the Operation, Maintenance & Monitoring Plan

3.1 Operating Parameters Monitored to Demonstrate Compliance

3.1.1 Reverberatory Furnace

3.1.1.1 The reverberatory furnaces will be tracked on a cycle basis (tap to tap).

3.1.1.2 The usage rate of the flux material is monitored by tracking the weight of the reactive flux charge to the furnace. The cycle chlorine pounds per ton charged shall not be charged at a rate higher than the maximum rate per Appendix C.

3.1.1.3 The lime feed rate setting is checked daily while the source is operating to ensure that the proper setting is maintained. The minimum effective lime usage setting was determined and used during the performance test to ensure compliance with the standard under all conditions. The minimum lime feed rate setting is found in Appendix C.

3.1.1.4 Lime flow is visually checked through a site glass when the source is operating a minimum of every 8 hours. If a blockage is found the sampling frequency is increased to at least once every four hours for a period of 3 days. Inspections will return to a minimum of once every 8 hours if corrective actions result in no further blockage during the 3 day period. The lime feed rate for the baghouse will be set to the pounds per hour used during the stack test as noted in Appendix C.

3.1.1.5 The operator will measure and record molten metal height once per cycle following tap (lowest point of cycle) to demonstrate the metal level is above the arch height. Flux will only be added with the metal level above the arch height. If the measurement at that time is below the arch, flux will not be added. An additional measurement will be taken and recorded demonstrating metal level above the arch before flux is added.

3.1.1.6 The broken bag detector is monitored to ensure the proper operation of the baghouse. The detector is set to alarm if the sensor detects emissions indicative of a broken bag. The detector is configured and operated as suggested by the manufacturer and in the EPA's "Fabric Filter Bag Leak Detection Guidance," September 1997 (Appendix B).

3.1.1.7 The inlet temperature of the gases to the baghouse is continuously monitored. Fifteen-minute block average temperatures are recorded and the average temperature for each 3-hour block period is determined, recorded and compared to the 3-hour block temperature that was established during the performance test as listed in Appendix C. This temperature limit is the three run average achieved during the performance test plus 25 ^{o}F. Scrap was being processed.

3.1.2 Rotary Furnace

3.1.2.1 The rotary furnaces will be tracked on a cycle basis (tap to tap).

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The regulated pollutants for a major source that operates a group 1 furnace are dioxins and furans (D/F), hydrogen chloride (HCl) and particulate (PM). In the reverberatory furnace process, the regulated pollutants are emitted from the sidewell on the melting furnace, which are captured by a hood over the sidewell. The opening of the rotary furnace is enclosed in a hood or vestibule to capture the emissions. To control these process emissions, the exhausts from the capture hoods are ducted to a lime-injected baghouse system. The operation of the furnaces and the associated control devices as described within this document are currently subject to the NESHAP for Secondary Aluminum Production (40 CFR 63 Subpart RRR).

The scrap dryer operated at the facility is also subject to the NESHAP standard. The regulated pollutants for a scrap dryer are D/F, PM, HCl, and total hydrocarbons (THC). Emissions from the dryer are controlled using an afterburner and a baghouse.

The Affected Sources covered by this plan can be found in Appendix C.

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2 Operation, Maintenance & Monitoring Plan

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- To address the operating parameters that will be monitored to demonstrate compliance with 40 CFR 63 Subpart RRR.
- To describe the monitoring schedule to be followed to ensure that the necessary data is being collected.
- To establish operating and maintenance procedures to ensure that the emissions from the affected source meet the applicable emission limits or standards in 40 CFR 63.1505.
- To establish operating and maintenance procedures to ensure that the monitoring devices or systems are calibrated and certified to meet the accuracy requirements specified by the NESHAP standard.
- To identify the corrective action procedures that are to be followed to investigate deviation from the set operating values or ranges established as monitoring parameters.
- To provide preventive maintenance for each process and control device consistent with the manufacturer's instructions and recommendations.
- To describe the potential activities that may result in a malfunction and the steps to be taken to prevent the release of excess emissions.

3 General Procedures for the Operation, Maintenance & Monitoring Plan

3.1 Operating Parameters Monitored to Demonstrate Compliance

3.1.1 Reverberatory Furnace

3.1.1.1 The reverberatory furnaces will be tracked on a cycle basis (tap to tap).

3.1.1.2 The usage rate of the flux material is monitored by tracking the weight of the reactive flux charge to the furnace. The cycle chlorine pounds per ton charged shall not be charged at a rate higher than the maximum rate per Appendix C.

3.1.1.3 The lime feed rate setting is checked daily while the source is operating to ensure that the proper setting is maintained. The minimum effective lime usage setting was determined and used during the performance test to ensure compliance with the standard under all conditions. The minimum lime feed rate setting is found in Appendix C.

3.1.1.4 Lime flow is visually checked through a site glass when the source is operating a minimum of every 8 hours. If a blockage is found the sampling frequency is increased to at least once every four hours for a period of 3 days. Inspections will return to a minimum of once every 8 hours if corrective actions result in no further blockage during the 3 day period. The lime feed rate for the baghouse will be set to the pounds per hour used during the stack test as noted in Appendix C.

3.1.1.5 The operator will measure and record molten metal height once per cycle following tap (lowest point of cycle) to demonstrate the metal level is above the arch height. Flux will only be added with the metal level above the arch height. If the measurement at that time is below the arch, flux will not be added. An additional measurement will be taken and recorded demonstrating metal level above the arch before flux is added.

3.1.1.6 The broken bag detector is monitored to ensure the proper operation of the baghouse. The detector is set to alarm if the sensor detects emissions indicative of a broken bag. The detector is configured and operated as suggested by the manufacturer and in the EPA's "Fabric Filter Bag Leak Detection Guidance," September 1997 (Appendix B).

3.1.1.7 The inlet temperature of the gases to the baghouse is continuously monitored. Fifteen-minute block average temperatures are recorded and the average temperature for each 3-hour block period is determined, recorded and compared to the 3-hour block temperature that was established during the performance test as listed in Appendix C. This temperature limit is the three run average achieved during the performance test plus 25 ^{o}F. Scrap was being processed.

3.1.2 Rotary Furnace

3.1.2.1 The rotary furnaces will be tracked on a cycle basis (tap to tap).

3.1.2.2 The usage rate of the flux material is monitored by tracking the weight of the reactive flux charge to the furnace. The cycle chlorine pounds per ton charged shall not be charged at a rate higher than the maximum rate per Appendix C.

3.1.2.3 The lime feed rate is checked daily when the source is operating to ensure that the proper setting is maintained. The minimum effective lime usage setting per Appendix C was used during the performance test to ensure compliance with the standard under all conditions. The minimum lime feed rate setting is found in Appendix C.

3.1.2.4 Lime flow is visually checked through a site glass a minimum of every 8 hours when the source is operating. If a blockage is found the sampling frequency is increased to at least once every four hours for a period of 3 days. Inspections will return to a minimum of once every 8 hours if corrective actions result in no further blockage during the 3 day period. The lime feed rate for the baghouse will be set to the pounds per hour used during the stack test as noted in Appendix C.

3.1.2.5 Trona will be injected into the ductwork of the rotary furnace when processing dross.

3.1.2.6 The trona feed rate setting is checked daily while the source is processing dross to ensure that the proper setting is maintained. The minimum effective trona usage setting was determined and used during the performance test to ensure compliance with the standard under all conditions. The minimum trona feed rate setting is found in Appendix C.

3.1.2.7 Trona flow is visually checked a minimum of every 8 hours when the source is processing dross. If a blockage is found the sampling frequency is increased to at least once every four hours for a period of 3 days. Inspections will return to a minimum of once every 8 hours if corrective actions result in no further blockage during the 3 day period. The trona feed rate for the rotary furnace will be set to the pounds per hour used during the stack test as noted in Appendix C.

3.1.2.8 The broken bag detector is monitored to ensure the proper operation of the baghouse. The detector is set to alarm if the sensor detects emissions indicative of a broken bag. The detector is configured and operated as suggested by the manufacturer and in the EPA's "Fabric Filter Bag Leak Detection Guidance," September 1997 (Appendix B). (Note: Appendix B is the complete 26 page document.)

3.1.2.9 The inlet temperature of the gases to the baghouse is continuously monitored. Fifteen-minute block average temperatures are recorded and the average temperature for each 3-hour block period is determined, recorded and compared to the 3-hour block temperature that was established during the performance test as listed in Appendix C. Temperature limits are the three run averages achieved during the performance test plus 25 ° F. Scrap was being processed. Compliance was demonstrated at two different operating temperatures. The maximum 3-hour block temperature to be used is determined by the use or lack of use of carbon injection to the baghouse.

3.1.3 Scrap Dryer

3.1.3.1 The process feed rate to the scrap dryer is calculated by tracking the weights of the materials fed to the feed hopper using the production tracking system. For unblended truckloads, the scrap dryer feed/charge weight shall be tracked by recording the start and end times for each truckload of scrap charged to the scrap dryer feed hopper. The weights for each truckload are based on the net weight of the receiving department scale. For blended truckloads scrap will be weighed as placed in the feed hopper.

3.1.3.2 The lime feed rate is checked daily when the source is operating to ensure that the proper setting is maintained. The minimum effective lime usage setting per Appendix C was used during the performance test to ensure compliance with the standard under all conditions. The minimum lime feed rate setting is found in Appendix C.

3.1.3.3 Lime flow is visually checked through a site glass a minimum of every 8 hours when the source is operating. If a blockage is found the sampling frequency is increased to at least once every four hours for a period of 3 days. Inspections will return to a minimum of once every 8 hours if corrective actions result in no further blockage during the 3 day period. The lime feed rate for the baghouse will be set to the pounds per hour used during the stack test as noted in Appendix C.

3.1.3.4 The temperature in the afterburner is continuously monitored by thermocouple. Fifteen-minute block average temperatures are recorded and the average temperature for each 3-hour block period is determined and recorded and compared to the 3-hour block temperature that was established during the performance test as listed in Appendix C. This temperature limit is the three run average achieved during the performance. Scrap was being processed.

3.1.3.5 The inlet temperature of the gases to the baghouse is continuously monitored by thermocouple. Fifteen-minute block average temperatures are recorded and the average temperature for each 3-hour block period is determined, recorded and compared to the 3-hour block temperature that was established during the performance test as listed in Appendix C. This temperature limit is the three run average achieved during the performance test plus 25 ° F. Scrap was being processed.

3.1.3.6 The broken bag detector is monitored to ensure the proper operation of the baghouse. The detector is set to alarm if the sensor detects emissions indicative of a broken bag. The detector is configured and operated as suggested by the manufacturer and in the EPA's "Fabric Filter Bag Leak Detection Guidance," September 1997 (Appendix B).

3.2 Monitoring Schedule

3.2.1 Reverberatory Furnaces

3.2.1.1 The weight of reactive flux used in the furnace is recorded for each cycle.

3.2.1.2 The weights of materials charged to the furnace are recorded each cycle.

3.2.1.3 The operator will measure and record molten metal height once per cycle following tap (lowest point of cycle) to demonstrate the metal level is above the arch height as specified in Appendix C. Flux will only be added with the metal level above the arch height. If the measurement at that time is below the arch, flux will not be added. An additional measurement will be taken and recorded demonstrating metal level above the arch before flux is added.

3.2.1.4 Cycle records are maintained of the calculated usage rates of reactive flux, demonstrating that the rate is within the specified process limit as established during the performance test.

3.2.1.5 The temperature at the inlet to the baghouse is continuously recorded by a data collection system. Fifteen-minute block average temperatures and the 3-hour block average temperatures are determined and recorded, documenting that the average temperatures are below the limits established during the performance tests. Baghouse maximum inlet temperatures are documented in Appendix C.

3.2.2 Rotary Furnace

3.2.2.1 The weight of reactive flux used in each of the furnaces is recorded for each cycle.

3.2.2.2 The weights of materials charged to the furnaces are recorded each cycle.

3.2.2.3 Cycle records are maintained of the calculated usage rates of reactive flux, demonstrating that the rate is within the specified process limit as established during the performance test.

3.2.2.4 The temperature at the inlet to the baghouse is continuously recorded by a data collection system. Fifteen-minute block average temperatures and the 3-hour block average temperatures are determined and recorded, documenting that the average temperatures are below the limits established during the performance tests. Baghouse maximum inlet temperatures are documented in Appendix C.

3.2.3 Scrap Dryer

3.2.3.1 The scrap dryer feed/charge weight shall be calculated using the weight of scrap collected as detailed in 3.1.3.1.

3.2.3.2 Afterburner temperature is continuously monitored. Fifteen-minute block average temperatures are recorded and the average temperature for each 3-hour block period is determined and recorded. Afterburner minimum inlet temperatures are documented in Appendix C.

3.2.3.3 The temperature at the inlet to the baghouse is continuously recorded by a data collection system. Fifteen-minute block average temperatures and the 3-hour block average temperatures are determined and recorded, documenting that the average temperatures are below the limits established during the performance tests. Baghouse maximum inlet temperatures are documented in Appendix C.

3.3 Operating and Maintenance Procedures for Emission Control Systems

3.3.1 The alkaline reagent injected baghouse is operated to control the emissions of Particulate Matter (PM), hydrogen chloride (HCl), and dioxins/furans (D/F). The operating procedures for these control devices are to be followed as specified by the manufacturer in the operating manual and internal standard operating procedures found in Appendix F. Daily records will be maintained in the "Baghouse Daily Operation Inspection Log." The "Baghouse Preventative Maintenance Schedule", Appendix E, is maintained to ensure consistent performance.

3.3.2 The baghouse inlet temperature monitoring system is to be maintained per the manufacturer's instructions and Aleris standard practices as referenced in Appendix F. Records are maintained in the system computer to document the 15-minute and 3-hour block average baghouse inlet temperatures.

3.3.3 The afterburner on the scrap dryer is operated to control the emissions of D/F and total hydrocarbons (THC). The operating procedures for these devices shall be followed as specified by the manufacturers in the operating manuals as identified in Appendix F.

3.4 Operating and Maintenance Procedures and Monitoring Equipment

3.4.1 The broken bag detector systems shall be operated, calibrated and maintained per the manufacturer instructions and Aleris' procedures as referenced in Appendix F. These systems can be inspected, cleaned and calibrated during normal operation downtime. These preventive maintenance activities will be coordinated between the department supervisor and the maintenance supervisor. Scheduling and recordkeeping are the responsibility of the Maintenance Department.

3.4.2 Following the initial adjustment of the system, the owner or operator must not adjust the sensitivity or range, averaging period, alarm setpoints, or alarm delay time except as detailed in this plan. In no case may the sensitivity be increased by more than 100% or decreased more than 50% over a 365-day period unless such adjustment follows a complete fabric filter inspection which demonstrates that the fabric filter is in good operating condition.

3.4.3 Records will be maintained outside of this OM&M Plan of changes made to BLD settings identified below.

3.4.4 Initial BLD Settings

Baghouse	Rotary Baghouse	Reverb/Dryer Baghouse
Sensitivity	NA	
Range	0 - 100	
Averaging Period	0	
Alarm Setpoint	61	
Alarm Delay	31	

3.4.5 The bag leak detectors use a relative scale of 0% to 100%. The detector is configured and operated as suggested by the manufacturer and in the EPA's "Fabric Filter Bag Leak Detection Guidance," September 1997. The alarm delay period was selected to exclude false alarms caused by the cleaning cycle during normal operation.

3.4.6 The production scale system is calibrated routinely to ensure that the quality system remains in conformance with Aleris quality standards and meets an accuracy standard of +/- 1%. The frequency of this calibration will be at least once every 6 months. Scheduling and recordkeeping of the maintenance activities are accomplished by the facility's maintenance management system.

3.4.5.1 There are number of production scales operating. All are calibrated and maintained to the same standard. In the event a scale is inoperable, one of the other scales will be used.

3.4.6 The lime injection rate (lbs/hr) was established during the performance test. To establish the lime injection rate, lime was injected into a bucket after each test run while no fluxing occurred, The bucket was then weighed on a scale to calculate the net lime weight (bucket full – bucket empty). This figure was then adjusted to units of pounds per hour. The weight of lime from each of the 3 test runs was averaged to establish the minimum lime injection rate which is listed in Appendix C.

3.4.7 Thermocouples used to monitor the baghouse inlet temperature and the afterburner temperature will be checked for calibration in one of the following two ways.

3.4.7.1 The thermocouple used to continuously monitor the process will be an NIST approved thermocouple and will be changed out at least once every six months.

3.4.7.2 A sampling port adjacent to the control thermocouple will be used in conjunction with an NIST approved thermocouple and meter to check the calibration of the control thermocouple at least once every six months.

3.5 Corrective Action Procedures for Deviations from Operating Limits

Sections 63.1506(p) and 63.1510(b)(6) require corrective actions to be initiated when a process parameter or air pollution control device deviates from the value that was established during the performance test. Corrective action must restore the operation to normal as expeditiously as practicable in accordance with good air pollution control practices to minimize emissions. Corrective actions taken must include follow-up actions necessary to return the parameter to the established value and steps to prevent the likely recurrence of the cause of the deviation.

The following corrective action procedure provides step-by-step actions that are to be taken to resolve non-conforming operations as established in section 3.1. Any deviation from these established operating limits will be documented using the RRR Incidence Occurrence Log, Appendix D or equivalent. The automated system for monitoring baghouse inlet temperature, afterburner operating temperature and bag leak detectors has its own internal reporting template.

3.5.1 The maximum flux injection is listed in Appendix C. If exceeded, the responsible Supervisor will investigate the incident with the Furnace Operator. The cause will be documented and corrective action identified.

3.5.2 Low metal level in furnace: Metal level in the reverb furnaces must be maintained to cover the hearth pass-through channel. If metal levels drop below this point, only clean charge materials and no reactive flux will be allowed. Once the metal level increases to cover the pass-through channel, all normal operations can be resumed.

3.5.3 Lime feeder setting: The lime feeder setting is shown in Appendix C. If found to be set a lower level (less lime feed), the setting will be returned to the correct level. Following resetting then level, the responsible

Supervisor will investigate the incident with the appropriate Operator. The cause will be documented and corrective action identified.

3.5.4 Lime not free flowing: This can result if the lime feed system fails or becomes plugged. If the condition cannot be corrected as required by this plan, the charging of non-clean scrap or reactive flux materials to the furnaces will be stopped until a CA investigation has determined and corrected the cause. Only clean charge material may be charged.

3.5.5 Trona feeder setting: The trona feeder setting is shown in Appendix C. If found to be set a lower level (less lime feed), the setting will be returned to the correct level. Following resetting then level, the responsible Supervisor will investigate the incident with the appropriate Operator. The cause will be documented and corrective action identified.

3.5.6 Trona not free flowing: This can result if the trona feed system fails or becomes plugged. If the condition cannot be corrected as required by this plan, the charging of dross to the furnaces will be stopped following completion of the current heat until a CA investigation has determined and corrected the cause.

3.5.7 Bag leak Detector Alarm:

3.5.7.1 Initiate corrective action within 1 hour of a bag leak detection system alarm.

3.5.7.2 Employing the BLDS monitor readout, eliminate the properly operating modules in the baghouse by isolating individual modules until the module causing the alarm is located.

3.5.7.3 Upon determining the module(s) that are malfunctioning, either repair the cause of the problem or leave the module(s) isolated until repaired.

3.5.7.4 Once repaired and returned to service, check operation of the BLDS monitor to verify that all modules are operating within proper parameters.

3.5.7.5 If inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm shall be counted as a minimum of one (1) hour. If plant personnel take longer then one (1) hour to initiate corrective action the alarm time shall be counted as the actual amount of time taken by plant personnel to initiate corrective action.

3.5.7.6 Personnel shall complete the facility records noting date/time the alarm initiated, cause, corrective action, and date/time the corrective action started and completed.

3.5.8 The maximum baghouse inlet temperature for each baghouse is listed in Appendix C. If an alarm occurs follow the steps:

3.5.8.1 Determine if the thermocouple or controller is at fault or if the cooling damper has malfunctioned.

3.5.8.2 If not an equipment issue, reduce firing rate of the heat source.

3.5.9 Afterburner Operating Temperature: The minimum afterburner operating temperature is found in Appendix C. If an alarm occurs follow the steps:

3.5.9.1 Determine if the burner is operating properly at the desired firing rate.

3.5.9.2 Discontinue feed to the kiln.

3.5.9.3 Once a CA investigation has determined the problem and the problem is corrected, all normal operations can be resumed.

3.5.10 Scale Tolerance: Scale calibration must be checked at least semi-annually. During the calibration check, if the tolerance exceeds +/- 1% follow these steps:

3.5.10.1 For platform scales, determine if the scale deck is freely floating. Remove any obstructions found.

3.5.10.2 For either platform scales or loader scales, determine if load cells, hydraulic system components, or other relevant parts are functioning properly. Repair or replace if needed.

3.5.10.3 If there are no mechanical or electrical faults, or once repairs are made, recalibrate the scale with a test weight.

3.5.11 Capture & Collection System

3.5.11.1 If visible emissions are observed escaping capture, the following steps will be taken:

3.5.11.1.1 Charging will stop until fugitive emissions abate.

3.5.11.1.2 Scrap will be inspected to determine if a reduced charge rate is appropriate.

3.5.11.1.3 Charging of scrap will resume.

3.6 Preventive Maintenance

The facility has a preventive maintenance system. The necessary preventive maintenance tasks are found in Appendix E. Each task is assigned a frequency for inspection or maintenance. The process equipment associated with the affected sources; such as the inlet temperature monitoring device, the lime injection system and the pulse jet or shaker cleaning system, are included in the preventive maintenance system. Preventive maintenance will be managed based on the internal Aleris standards found in Appendix E. In addition the following items are addressed as part of the preventive maintenance system.

3.6.1 The labels attached to the affected sources as required by the NESHAP, are inspected monthly to ensure that the label information is clearly displayed, legible and is intact. If the labeling of the affected source is not in conformance with the requirements, a preventive maintenance corrective action investigation shall be initiated. The inspection findings and the corrective action(s) taken shall be recorded and this information shall be included in the semi-annual compliance status report.

3.6.2 The capture collection and closed vent system is inspected at least once per year to ensure that the systems are in good operating condition. PM requirements are found in Appendix E.

3.6.3 The scrap dryer afterburner is inspected at least once per year to ensure that the systems are in good operating condition. PM requirements are found in Appendix E.

4. General Procedures for the Startup, Shutdown, and Malfunction Plan

The following procedures are developed to address normal operating conditions and potential process malfunctions. In addition to the items listed below, a list of reference documents and their location may be found in Appendix F.

4.1 Purpose

The purpose of this subsection of the plan is to establish the practices necessary to correct problems that may arise as a result of startup, shutdown, or process malfunction of covered processes.

4.2 General Practice

The corrective action practices and procedures expressed in this section are to be used to correct problems that could result in greater than normal emissions from the covered processes. Malfunctions that have been described in Section 4.3 of this plan address the operation of the reverberatory furnace, rotary furnace, scrap dryer, and associated emission control systems. These malfunctions may result in emissions that are greater than normal rates. All perceived excess emission conditions are described in this malfunction section. Normal startup and shutdown conditions discussed in Section 4.3 and Section 4.4 do not result in excess emissions and will not be addressed by the corrective action procedure.

Conditions that generate emissions in excess of those typical during normal operations shall be corrected as soon as possible after the condition is identified.

The following procedure is for identifying the malfunction condition and implementing a timely corrective action.

4.2.1 Identify the upset or malfunction condition and contact the responsible supervisor. The responsible supervisor is to take actions to determine what type of malfunctions or deviation has occurred. As described in this plan, all necessary production curtailment should take place in a safe and expeditious manner. The designated supervisor should make note of the time and date that the deviation or malfunction started and the time and date that the corrective action began. These records are to be maintained using the RRR Incidence Occurrence Log (Appendix D) or equivalent.

4.2.2 The facility manager or designee is to be notified of the malfunction as soon as possible. The facility manager or designee will be responsible for making the necessary resources available to address the malfunction.

4.2.3 The facility manager or designee will make sure that actions are taken to correct the situation in order to alleviate the problem and the potential for excess emissions. The facility manager or designee will ensure that as soon as possible the system is restored to normal operation.

4.2.4 The responsible supervisor will note the date and time that the deviation was corrected and make note of the extent of time that excess emissions had occurred. The maintenance activities, cause of the deviation or malfunction and the corrective action taken will be noted and recorded using the RRR Incidence Occurrence Log or equivalent.

4.2.5 The facility manager or designee is also responsible for following up after the completion of the corrective action to ensure that:

4.2.5.1 The steps that were taken to correct the occurrence will allow for the effected system or operation to return to normal operational condition.

4.2.5.2 If repair or corrective action is a temporary action, see that the necessary additional work is scheduled and the system is restored to sound operational status as soon as possible. During the interim period, an increased rate of inspection for the effected system will be established to ensure that the system is operating properly and there are no excess emissions being generated.

4.2.5.3 If the malfunction was not a previously identified event, then steps are to be taken to update this plan to add this malfunction and to provide a copy of this updated plan to the administrator. A copy of the previous version of this plan is to be retained for five (5) years.

4.2.5.4 Insure that the RRR Incidence Occurrence Log is completed with all of the necessary fields completed.

4.3 Start-Up Procedures

Startup of the furnaces, scrap dryer, shredder and baghouses do not result in exceeding any applicable emission limitation and therefore are excluded under 63.6(3)(i) and 63.10(b)(2)(i).

Normal startup procedures do not include the running of scrap in the scrap dryer. Normal furnace startup only includes the use of clean charge.

4.4 Shutdown Procedures

Shutdown of the furnaces, scrap dryer, and baghouses do not result in exceeding any applicable emission limitation and therefore are excluded under 63.6(3)(i) and 63.10(b)(2)(i).

At the time of shutdown, scrap is no longer in the scrap dryer. In the case of a furnace, melting is complete and no flux is present.

4.5 Malfunction Procedures

Malfunction as defined in 40 CFR 63.2 means any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

The following events can potentially occur and are being classified as process or control system malfunctions. They may contribute to a parameter deviating from the established value. The following occurrences are to be documented identifying the type of malfunction, duration of the malfunction, all maintenance performed on air pollution control equipment, the actions taken to prevent excessive emissions, all information necessary to document conformance with the SS&M Plan, and each time period when a Continuous Monitoring System (CMS) malfunctioned or was inoperable. The records will be maintained to allow for the periodic reporting to the applicable agency.

4.5.1 Power outage: In the event of a power outage, the material feed systems will be de-energized and cease operation. The operator as part of the department emergency shutdown procedure will stop any manual charging of the furnaces. As part of the power outage event, the exhaust fan on the control device will also no longer operate, potentially causing process emissions to escape the capture hood. An investigation report will be generated and filed as part of the facility records.

4.5.2 High temperature alarm condition: If the baghouse temperature sensor triggers a high temperature alarm, the facility manager or designee will initiate a corrective action (CA) and contact the maintenance department.

4.5.3 CMS, as defined by Section 63.2, is a comprehensive term that may include, but is not limited to, continuous emission monitoring systems, continuous opacity monitoring systems, continuous parameter monitoring systems, or other manual or automatic monitoring that is used for demonstrating compliance with an applicable regulation on a continuous basis as defined by the regulation. For Subpart RRR purposes, the CMS include the bag leak detection system, the afterburner temperature monitoring system, and the baghouse inlet temperature monitoring system. Malfunctions that are associated with the Continuous Monitoring System (CMS): CMS malfunctions are to be investigated immediately, following the corrective action procedures. The following system malfunctions are anticipated and identified as required by 40 CFR 63.6 (e)(3). As required by 40 CFR 63.8 (c)(1)(ii) these malfunctions will be immediately repaired or the necessary replacement parts will be kept on site for the CMS to correct "routine" or otherwise predictable CMS malfunction.

4.5.3.1 Bag leak detection sensors producing erroneous readings indicating excess solids build-up or grounding short.

4.5.3.1.1 Upon detecting a malfunctioning sensor, the facility will assign an observer to view the stack for five (5) minutes each hour. Upon seeing any visible emissions a Method 9 trained observer will be called to make a recorded observation.

4.5.3.1.2 Malfunctioning bag leak detectors shall be repaired or replaced. New sensors shall be calibrated and adjusted in accordance with manufacturers specifications.

4.5.3.1.3 All necessary instrument setup, quality assurance checks, drift checks, and response tests shall be conducted prior to returning baghouses and related plant processes to operation.

4.5.3.1.4 Related plant processes and baghouse controls shall be brought back into operation in accordance with the SS&M plan.

4.5.3.1.5 Records of corrective actions taken shall be completed in accordance with the corrective action procedures outlined above.

4.5.3.2 Erroneous temperature readings on baghouse inlet monitoring system or afterburner indicate that the thermocouple or the controller is producing a false measurement. Determine if the thermocouple or controller is the cause and replace the unit.

4.5.4 Baghouse Bag Break

4.5.4.1 Complete corrective action (replace bags in malfunctioning compartment(s)) in accordance with OM&M plan.

4.5.4.2 Should any malfunction require the entire baghouse to be shut down for repairs; the processes which are providing exhaust gases to the baghouse will be shutdown in accordance with Appendix G

4.5.4.3 Corrective actions shall be carried out. Only after it has been determined that the baghouses can achieve control of emissions within specified limits, can the plant processes be brought back into operation in accordance with Appendix G.

4.5.4.4 Records of Corrective Action shall be kept in accordance with the Corrective Action Procedures outlined above.

4.5.5 Exhaust fan failure: This fan failure will result in the shutdown of the charging of non-clean scrap or reactive flux materials to the furnaces or the charging of materials to the scrap dryer.

4.5.6 Lime feed failure are identified through the 8 hour inspection. They can result if the lime feed system fails or becomes plugged. If the condition cannot be corrected as required by this plan, the charging of non-clean scrap or reactive flux materials to the furnaces will be stopped until a CA investigation has resolved the malfunction. Only clean charge material may be charged during this malfunction. If while inspecting equipment, feed failures are observed they will be addressed within a reasonable time of discovery.

4.5.7 Afterburner malfunction: Should a low temperature alarm indicate a malfunction of the afterburner on the scrap dryer, the operator shall discontinue feeding material to the kiln. Once a CA investigation has determined the problem and the problem is corrected, all normal operations can be resumed.

4.5.7.1 A special condition of "afterburner low temperature" is the flameout condition programmed into the logic for safety. The manufacturer has designed the system to shut down the afterburner, hot gas generator and feed conveyor when scrap dryer operating parameters fall outside acceptable ranges. The system can not be restarted until the parameters are again within acceptable ranges. Corrective actions are automated and can not be manually overridden. The event will be recorded and the equipment restarted when the automated system determines parameters are again within acceptable ranges. This event is not considered a violation of the 3 hour minimum afterburner temperature since the automated response shuts off feed to the scrap dryer.

In the event of a malfunction condition that was not identified in this SSM plan, this document will be modified and updated to include the newly identified malfunction condition. This updated plan will be submitted to the Administrator within 45 days of the date that the malfunction had occurred.

5 Reporting Requirements

The purpose of this section is to identify the requirements for reporting in relation to the Operation, Maintenance, and Monitoring / Startup, Shutdown and Malfunction Plan requirements found in 40 CFR 63.10 (d)(5)(i) and (ii) and 40 CFR 63.1516 and the Title V permit. Reporting requirements related to this manual are for the affected sources described in "Process and Regulatory Overview" section of this document.

5.1 Reporting Requirements

Semi-annual compliance status reports will be provided to the permitting authority within 60 days of the end of the 6 month reporting period in accordance with 63.1516(b). Excess emissions, parameter monitoring exceedances and the results of any performance test conducted during the reporting period shall be reported as part of these reports to satisfy the requirements that are associated with this plan.

5.2 Periodic Startup, Shutdown, and Malfunction Reports

This section requires reports related only to those actions taken in compliance with the Startup, Shutdown, and Malfunction Plan.

Reports are only required to document the activity that occurred during the stated reporting period and are included as part of the semi-annual compliance status report.

This report will be included as a portion of the semi-annual compliance status report.

Reports filed according to the requirements of this section shall consist of the following:

5.2.1 A letter containing the name, title and signature of the owner, operator, or responsible official that certifies the accuracy of the report.

5.2.2 The letter shall list or detail any malfunctions that occurred during the period. The letter shall also list any corrective action taken to correct any malfunctions reported during the period. As noted above, normal startups and shutdowns of this equipment that do not result in exceeding any applicable emission limitation will not be reported.

5.2.3 The letter shall be submitted to the appropriate agency semiannually.

5.3 Immediate Startup, Shutdown, and Malfunction Reports

This section requires reports related to actions taken that do not comply with the procedures found in the Startup, Shutdown, and Malfunction Plan and result in excess emissions.

Reports are required anytime the procedures are not followed. The owner operator shall report within two (2) working days by telephone or facsimile and follow up with a letter within seven (7) working days.

Reports filed according to these requirements shall consist of the following:

5.3.1 A letter containing the name, title and signature of the owner operator responsible official that certifies the accuracy of the report.

5.3.2 The letter shall explain the circumstances of the event, the reasons for not following the plan and whether any excess emissions or parameter monitoring exceedances are believed to have occurred.

5.3.3 The letter shall be submitted to the appropriate agency per the schedule as described above.

6 Site Specific Requirements for SAPU

Test results indicate that each emission unit in the SAPU demonstrated compliance with the individual emission limit in 40 CFR 63.1505(i); therefore, the operating and monitoring requirements will be based on an individual emission unit basis, and the 3-day, 24 hour rolling average emissions SAPU calculations required by 40 CFR 63.1510(t) are not required, per 40 CFR 63.1510(u).

6.1 Information Location

6.1.1 The identification of each emission unit in the SAPU is listed in Appendix C.

6.1.2 The control technology used to control each emission unit is listed in Appendix C.

6.1.3 The emission limit for each SAPU is listed in Appendix C. Compliance Test Report location is listed in Appendix F.

6.1.4 Actual and minimum flow calculations are shown in the Compliance Test Reports listed in Appendix F.

Appendix A – CMS Requirements

Scope of the Plan (40 CFR Part 63.8(c), 63.8(d), and 63.10(e)(3))

- Operation and Maintenance of Continuous Monitoring Systems
- Quality Control Program
- Reporting Requirements

Continuous temperature monitoring systems have been installed to measure the inlet temperature of a baghouse and scrap dryer afterburner.

The bag leak detector utilizes induction sensing to assess particulate concentration.

The manufacturer's specifications for the selected monitoring devices and good air pollution control practices are being used to establish this plan.

General Operation Description.

The baghouse inlet temperature monitoring system utilizes a standard thermocouple technology. The electrical signal from the thermocouple is processed through a controller to produce the output for recording data and to establish an alarm condition. The system is designed to operate continuously and controls the introduction of cooling air to the airstream through an automated damper system prior to the baghouse inlet. The operating temperature limit is established based on the performance test. This limit is described in the OM&M Plan, Appendix C.

The afterburner operating temperature monitoring system utilizes a standard thermocouple technology installed at the exit of the combustion zone of the afterburner. The electrical signal from the thermocouple is processed through a controller to produce the output for recording data and to establish an alarm condition. The system is designed to operate continuously. The operating temperature limit is established based on the performance test. This limit is described in the OM&M Plan, Appendix C.

The bag leak detector utilized induction sensing to monitor. When the sensing probe is installed in the duct or stack, particles in the airstream interact with the sensing rod and a charge induction effect is analyzed in the probe. Distributions in the particle stream result in a frequency charge induction response which is directly proportional to the concentration of particulate.

Operation and Maintenance of Continuous Monitoring Systems

- Manufacturer's recommendations for installation, operation, and calibration will be followed.
- Startup and shutdown of all systems used to continuously monitor emissions control equipment will be according to the manufacturer's specifications.
- Corrective actions addressing malfunctions of the continuous monitoring equipment covered by the regulation will be according to manufacturer's recommendations.
- Display devices will be stationed in areas accessible to the operator and available for inspection.

- Spare parts required for routine repairs to this equipment will be identified and stored on site.
- Out of control periods will be documented and reported as required by 63.8(c) (7) & 63.8(c)(8).
- Downtime for the CMS will be tracked in hours and as a percent of the scheduled operating time.

Quality Control Program

A written protocol to include procedures for the following operations:

- Calibration procedures for the CMS.
- Determining and adjusting calibration drift of the CMS.
- Preventative maintenance procedures including spare parts inventory.
- Data recording and reporting.
- Auditing procedures including sampling and analysis method.
- Corrective actions for a malfunctioning CMS.

Reporting Requirements

- Semi-annual reports will be provided to the permitting authority within 60 days of the end of the 6 month reporting period.
- If the total duration of excess emissions or process or control system parameter exceedances for the reporting period are less than 1% of the total operating time and CMS downtime for the reporting period is less than 5% of the total operating time a summary report will be submitted.

    1. Company name and address
    2. List of monitored HAP's.
    3. Beginning and ending date of the period
    4. Brief process description
    5. Emission and operating parameter limits specified in the relevant standard
    6. Monitoring equipment manufacturer (s) and model number (s)
    7. Date of latest CMS certification or audit
    8. Total operating time of the affected source
    9. Emission data summary
    10. CMS performance summary
    11. Description of any changes to CMS
    12. Name, title, and signature of responsible official

- If excess emissions are greater than or equal to 1% or the CMS downtime is greater than or equal to 5% an excess emissions report will be submitted. This report will include the information required by 63.10(c)(5) through 63.10(c)(13), 63.8(c)(7), and 63.8(c)(8).

Appendix B - Fabric Filter Bag Leak Detection Guidance
(Removed per Subpart RRR Rule revisions in September 2015)

Appendix C - Operating Limits

SOURCE ID	EQUIPMENT	MEASURE	LIMIT	INTERNAL RECORD	SOURCE	MONITORING METHOD	FREQUENCY	INSTALL DATE	SAPU[1]	EMISSION LIMIT
Rotary #1	Group 1 Furnace	Lbs Chlorine/ton charged	307	Oracle	2012 Compliance Test	Scale	≤ 6 Months	1997	E	PM = 0.40
		Trona Charge Rate[3]	82 lbs/hr		2014 Compliance Test	Scale	Bi-monthly			D/F = 15.0
		Trona Feeder Setting[3]	19 hz			Visual	Daily			HCl = 0.40
		Feed/charge Weight[2]	35,110							
Rotary #2	Group 1 Furnace	Lbs Chlorine/ton charged	335	Oracle	2012 Compliance Test	Scale	≤ 6 Months	1997	E	PM = 0.40
		Trona Charge Rate[3]	83 lbs/hr		2014 Compliance Test	Scale	Bi-monthly			D/F = 15.0
		Trona Feeder Setting[3]	74 hz			Visual	Daily			HCl = 0.40
		Feed/charge Weight[2]	34,570							
Rotary Baghouse Operating Method #1	Shaker Type	Inlet Temperature	231 F 3 hr block avg	NESHAP Report, Environmental Log	2012 Compliance Test 2014 Compliance Test	Thermocouple	≤ 6 Months	1997		
		Baghouse #1 Fan RPM	1,656			Tachometer	Monthly			
		Baghouse #2 Fan RPM	1,659			Tachometer	Monthly			
		Lime Feed Rate (scrap only)[4]	331 lbs/hr			Scale	Bi-monthly			
		Feeder #1 Setting (scrap only)[4]	3			Visual	Daily			
		Feeder #2 Setting (scrap only)[4]	3			Visual	Daily			
		Lime Feed Rate (dross only)[5]	178 lb/hr			Scale	Bi-monthly			
		Feeder Setting #2 (dross only)[5]	2			Visual	Daily			
		Feeder Setting #2 (dross only)[5]	2			Visual	Daily			
		Lime Flow	Flowing			Visual	8 Hours			
Rotary Baghouse Operating Method #2	Shaker Type	Inlet Temperature	258 F 3 hr block avg	NESHAP Report, Environmental Log	2012 Compliance Test 2014 Compliance Test	Thermocouple	≤ 6 Months	1997		
		Baghouse #1 Fan RPM	1,656			Tachometer	Monthly			
		Baghouse #2 Fan RPM	1,659			Tachometer	Monthly			
		Lime Feed Rate (scrap only)	331 lbs/hr			Scale	Bi-monthly			
		Feeder #1 Setting (scrap only)[4]	3			Visual	Daily			
		Feeder #2 Setting (scrap only)[4]	3			Visual	Daily			
		Lime Feed Rate (dross only)[5]	178 lb/hr			Scale	Bi-monthly			
		Feeder Setting #2 (dross only)[5]	2			Visual	Daily			
		Feeder Setting #2 (dross only)[5]	2			Visual	Daily			
		Lime Flow	Flowing			Visual	8 Hours			
		Carbon Feed Rate	9.4			Visual	Bi-monthly			

[1] E = existing; N = new

[2] Feed/charge weight during test. Not a limit.

[3] Trona injection occurs at the respective furnace when dross is being charged.

[4] Lime is fed into the baghouse system by two feeders. Settings shown in this table are the standard settings. However, either feeder has the capacity to provide the full required lime feed. At times due to maintenance or other conditions, the setting may vary but the minimum lime flow rate will be maintained.

[5] Lime is fed into the baghouse system by two feeders. Settings shown in this table are the standard settings. However, either feeder has the capacity to provide the full required lime feed. At times due to maintenance or other conditions, the setting may vary but the minimum lime flow rate will be maintained.

Appendix C - Operating Limits

SOURCE ID	EQUIPMENT	MEASURE	LIMIT	INTERNAL RECORD	SOURCE	MONITORING METHOD	FREQUENCY	INSTALL DATE	SAPU[1]	EMISSION LIMIT
Reverb #7S	Group 1 Furnace	Lbs Chlorine/ton charged Feed/charge Weight[2] Arch Height	75 37,320 15 in.	Oracle	2013 Compliance Test	Scale EC Wire	≤ 6 Months	1997	E	PM = 0.40 D/F = 15.0 HCl = 0.40
Reverb/Dryer Baghouse	Pulse Jet	Inlet Temperature Baghouse Fan RPM Lime Feed Rate Feeder Setting Carbon Feed Rate Lime Flow	129 F 3 hr block avg 1,674 74 lbs/hr 0.75 4.3 lbs/hr Flowing	NESHAP Report, Environmental Log	2013 Compliance Test	Thermocouple Scale Visual Scale Visual	≤ 6 Months ≤ 6 Months Daily ≤ 6 Months 8 Hours	1997		
Dryer Afterburner (Idle)	Afterburner	Afterburner Temp	1,584F 3 hr block avg	NESHAP Report	2008 Compliance Test	Thermocouple	≤ 6 Months	1997		THC = 0.20 PM = 0.30 D/F = 5.0 HCl = 1.50

[1] E = existing; N = new

[2] Feed/charge weight during test. Not a limit.

RRR Incident Occurrence Log [1]

Date: ___________________________

Alarm # __________________________

Circle Incident Definition: Malfunction
Parameter Deviation

Malfunctioning Device: **Afterburner 3 Hour Average Alarm or Stack Cap Alarm**

Time incident began:
Time incident ended:
Duration:

Suspected cause:
High feed rate or oil content caused high temperature condition YES/NO________________________________
Burner flamed out YES/NO ____
Normal Shutdown YES/NO ____
PM event YES/NO ____
Thermocouple failure YES/NO ____
Mechanical failure without normal shutdown YES/NO ____
Offline Cleaning YES/NO ____
Power outage YES/NO ____

Corrective action taken:
Inspected the following items

Reviewed trending used as a trouble shooting device to assist with corrective action __________________________
Slowed feed rate YES/NO ____
Restarted system normally YES/NO ____
Replace thermocouple YES/NO ____
Mechanical repairs or PM event complete YES/NO ____

Steps taken to minimize emissions:

Is this deviation or malfunction included in the OM&M Plan?	Yes	No
Were your actions consistent with the OM&M Plan?	Yes	No

If the actions taken during the incident were not consistent with the OM&M Plan, explain:

Were there any excess emissions during the malfunction?	Yes	No

If the actions taken were inconsistent with the OM&M Plan and there were excess emissions, have the proper authorities been notified by telephone or FAX within 2 working days of the event and sent a letter within 7 working days of the event?

Which, if any, equipment was shutdown because of the malfunction?

Your Name (printed) ______________________________________

Signature: ____

Signature of supervisor on duty during the malfunction: ____

Copies: Plant Manager, Maintenance Superintendent, Operations Manager
Utilize this form or an equivalent method to collect information.

RRR Incident Occurrence Log [1]

Date: ___________________________

Alarm # __________________________

Circle Incident Definition: Malfunction
Parameter Deviation

Malfunctioning Device: **Baghouse 3 Hour Average Inlet Temperature Alarm**

Time incident began:
Time incident ended:
Duration:

Suspected cause:

Normal Shutdown YES/NO ____
Dilution Air Damper Failure YES/NO ____________________________________
Feed rate to high YES/NO ____
Thermocouple Failure YES/NO ____
PM event YES/NO ____
Mechanical failure without normal shutdown YES/NO ______________________
Power outage YES/NO ____

Corrective action taken:
Inspected the following items

Reviewed trending used as a trouble shooting device to assist with corrective action ______________
Slowed feed rate YES/NO ____
Repaired dilution air damper YES/NO __________________________________
Replaced Thermocouple YES/NO _______________________________________
Mechanical repairs or PM event complete YES/NO _________________________

Steps taken to minimize emissions:

Is this deviation or malfunction included in the OM&M Plan? Yes No
Were your actions consistent with the OM&M Plan? Yes No

If the actions taken during the incident were not consistent with the OM&M Plan, explain:

Were there any excess emissions during the malfunction? Yes No

If the actions taken were inconsistent with the OM&M Plan and there were excess emissions, have the proper authorities been notified by telephone or FAX within 2 working days of the event and sent a letter within 7 working days of the event?

Which, if any, equipment was shutdown because of the malfunction?

Your Name (printed) ______________________________________

Signature: ____

Signature of supervisor on duty during the malfunction: ______________________________

Copies: Plant Manager, Maintenance Superintendent, Operations Manager
Utilize this form or an equivalent method to collect information.

Appendix D – RRR Incidence Occurrence Log

RRR Incident Occurrence Log [1]

Date: ________________

Alarm # ______________

Circle Incident Definition: Malfunction
Parameter Deviation

Malfunctioning Device: **Broken Bag Detector Alarm Baghouse**

Time incident began:
Time incident ended:
Duration:

Suspected cause:

Baghouse take offline for offline cleaning YES/NO______________________________
Popit valves stuck YES/NO______________________________
Extended cleaning cycle YES/NO ______________________________
Back to back cleaning cycles YES/NO______________________________
Probe Failure YES/NO ______________________________
Cleaning probe YES/NO______________________________

Corrective action taken:

Inspected the following items or baghouse functions

Inspected all magnehelic pressure gauges and signal lines______________________________
Inspected probe condition or cleaned probe if required ______________________________
Isolated compartments one compartment at a time to insure no leaks are present in any compartment _________
Inspected compartment cleaning system to insure proper operation ______________________________
Reviewed trending used as a trouble shooting device to assist with corrective action ______________________
Broken filter bag found YES/NO ______________________________

Steps taken to minimize emissions:

Compartment isolated YES/NO ______________________________
Processed Stopped YES/NO ______________________________

Is this deviation or malfunction included in the OM&M Plan? Yes No
Were your actions consistent with the OM&M Plan? Yes No

If the actions taken during the incident were not consistent with the OM&M Plan, explain:

Were there any excess emissions during the malfunction? Yes No

If the actions taken were inconsistent with the OM&M Plan and there were excess emissions, have the proper authorities been notified by telephone or FAX within 2 working days of the event and sent a letter within 7 working days of the event?

Which, if any, equipment was shutdown because of the malfunction?

Your Name (printed) ____________________________________

Signature: ____

Signature of supervisor on duty during the malfunction: ___________________________________

Copies: Plant Manager, Maintenance Superintendent, Operations Manager
Utilize this form or an equivalent method to collect information.

RRR Incident Occurrence Log [1]

Date: ___________________________

Alarm # __________________________

Circle Incident Definition: Malfunction
Parameter Deviation

Malfunctioning Device: **Lime Pressure or Continuous Feed Alarm / Lime / Carbon / Trona**

Time incident began:
Time incident ended:
Duration:

Suspected cause:
Transport lines restricted YES/NO ____
Transport lines completely plugged YES/NO ____________________________________
Normal Shutdown YES/NO ____
PM event YES/NO ____
Mechanical failure without normal shutdown YES/NO ____________________________
Out of lime YES/NO ____
Power outage YES/NO ____

Corrective action taken:

Inspected the following items

Reviewed trending used as a trouble shooting device to assist with corrective action __________________
Cleaned transport lines YES/NO ____
Restarted system normally YES/NO ____
Mechanical repairs or PM event complete YES/NO ____________________________

Steps taken to minimize emissions:

Is this deviation or malfunction included in the OM&M Plan? Yes No
Were your actions consistent with the OM&M Plan? Yes No

If the actions taken during the incident were not consistent with the OM&M Plan, explain:

Were there any excess emissions during the malfunction? Yes No

If the actions taken were inconsistent with the OM&M Plan and there were excess emissions, have the proper authorities been notified by telephone or FAX within 2 working days of the event and sent a letter within 7 working days of the event?

Which, if any, equipment was shutdown because of the malfunction?

Your Name (printed) ______________________________________

Signature: ____

Signature of supervisor on duty during the malfunction: ______________________________________

Copies: Plant Manager, Maintenance Superintendent, Operations Manager
Utilize this form or an equivalent method to collect information.

Appendix E – PM Guidance

Shaker Baghouse

Item	Instructions	Frequency
Lime Injection	Lime flowing	8 hrs
Lime injection setting	Record lime feed rate setting	Daily
Dilution Air Damper	Inspect, clean, adjust and repair as required	Weekly
Exhaust Fan Blower Bearings	Lubricate	Semi-monthly
Broken Bag Detector Response Test	Response testing, inject dusty material and record reading	Monthly
Broken Bag Detector Electronic Drift Test	Electronic drift testing, simulate known electronic signals	Monthly
Broken Bag Detector Probe Cleaning	Clean sensor probe	Monthly
Shaker Assembly Linkage	Inspect, lubricate, repair or replace worn parts	Monthly
Lime Blower	Inspect, replace inlet filter and silencer filter as required (if equipped)	Monthly
Fan RPM	Check to ensure current level is equal to or greater than the baseline	Monthly
Lime Feeder	Calibrate lime feeder (checking lbs per hr setting)	Monthly
Lime System Silo Vibration Motor	Inspect, clean and lubricate	Quarterly
Popit Valve	Repair or replace	Quarterly
Exhaust Fan Motor Bearings	Lubricate	Quarterly
Lime Blower Motor Bearings	Lubricate (if equipped)	Quarterly
Upper and Lower Damper Cylinders	Visually inspect rod seal, clevis mounting and actuation	Quarterly
Exhaust Fan Motor Drive Belts	Inspect, adjust tension, replace if required	Semi-annual
Pressure Signal Tubing	Repair or replace	Semi-annual
Shaker Assembly Drive Belts and Motor	Inspect, adjust tension, replace if required	Semi-annual
Lime Feeder Bearings	Lubricate	Semi-annual
Pressure Gauges, Transmitters	Calibrate gauges, transmitters	Semi-annual
Thermocouples Baghouse Inlet	(1) Compare value with NIST traceable thermocouple and meter, replace thermocouple if needed. OR	Semi-annual
	(2) Check wiring back to output device with an NIST certified signal generator and replace thermocouple with NIST certified thermocouple	Semi-annual
*Sonic Horn (if equipped)	Replace diaphragm	Annual
Inspect interior cell modules	Inspect, clean as needed any material buildup in module	Annual
Broken Bag Detector	Calibrate broken bag detector	Annual

Appendix E (continued) – PM Guidance

Pulse Jet Baghouse

Item	Instructions	Frequency
Lime Injection	Lime flowing	8 hrs
Lime injection setting	Record lime feed rate setting	Daily
Dilution Air Damper	Inspect, clean, adjust and repair as required	Weekly
Exhaust Fan Blower Bearings	Lubricate	Semi-monthly
Broken Bag Detector Response Test	Response testing, inject dusty material and record reading	Monthly
Broken Bag Detector Electronic Drift Test	Electronic drift testing, simulate known electronic signals	Monthly
Broken Bag Detector Probe Cleaning	Clean sensor probe	Monthly
Lime Blower	Inspect, replace inlet filter and silencer filter as required (if equipped)	Monthly
Fan RPM	Check to ensure current level is equal to or greater than the baseline	Monthly
Lime Feeder	Calibrate lime feeder (checking lbs per hr setting)	Monthly
Lime System Silo Vibration Motor	Inspect, clean and lubricate	Quarterly
Popit Valves	Repair or replace	Quarterly
Exhaust Fan Motor Bearings	Lubricate	Quarterly
Lime Blower Motor Bearings	Lubricate (if equipped)	Quarterly
Upper and Lower Damper Cylinders	Visually inspect rod seal, clevis mounting and actuation	Quarterly
Exhaust Fan Motor Drive Belts	Inspect, adjust tension, replace if required	Semi-annual
Pressure Signal Tubing	Repair or replace	Semi-annual
Lime Feeder Bearings	Lubricate	Semi-annual
Pressure Gauges, Transmitters	Calibrate gauges, transmitters	Semi-annual
Thermocouples Baghouse Inlet	(1) Compare value with NIST traceable thermocouple and meter, replace thermocouple if needed. OR	Semi-annual
	(2) Check wiring back to output device with an NIST certified signal generator and replace thermocouple with NIST certified thermocouple	Semi-annual
Inspect interior cell modules	Visually inspect venturi caps and blow pipes	Semi-annual
Broken Bag Detector	Calibrate broken bag detector	Annual

Capture/Collection System Inspection Form

Item	Instructions	Frequency
Capture Collection System	Inspect hood/vestibule to ensure all sides are intact and are free of any holes.	Annual
	Verify that emissions are being drawn into the hood of the capture/collection system,	Annual
	make note of any visible emissions escaping from the hood.	
	Inspect all sides of the ductwork of the capture collection system for any holes,	Annual
	that need to be repaired.	
	Inspect the length of the ductwork of the capture/collection system for discontinuities,	Annual
	that need to be repaired.	
	Verify that there are no visible emissions escaping from the ductwork of the capture	Annual
	collection system	
	Verify the enclosure opening has not increased	Annual
	Verify the fan RPM meets or exceeds the baseline.	Annual
	Measure hood flow rate	2.5 years

Reverb Furnace

Item	Instructions	Frequency
Blower for Air Curtain, Stack Damper	Lubricate	Monthly
Air Curtain Stack Damper At Flue	Inspect pipes, nozzles and mechanical damper	Monthly
Nomex Skirts, Curtains	Inspect and repair or replace nomex skirting around hoods	Monthly
Air Curtain Integrity	Inspect and repair or replace any deficient components.	Quarterly
Air Curtain Static Pressure	Measure at the discharge of the fan and return to condition at time of stack test.	Quarterly
Laser measurement device (if equipped)	Calibrate	Semi-annual
Chlorine Meter (if equipped)	Calibrate	Semi-annual
Gas Meter (if used for control)	Calibrate	Annual

Rotary Furnace

Item	Instructions	Frequency
Pilot	Inspect & clean if necessary, (if equipped)	Monthly
Spark rod	Inspect & clean if necessary, (if equipped)	Monthly
Flame sensing eye	Inspect & clean if necessary, (if equipped)	Monthly
Burner Tip	Inspect, repair or replace	Monthly
Combustion Blower Motor Bearings	Lubricate	Monthly
Nomex Skirts, Curtains	Inspect and repair or replace nomex skirting around hoods	Monthly
Trona Feeder	Verify flow rate	Bi-monthly
Air Curtain Integrity (if equipped to meet ACGIH minimum)	Inspect and repair or replace any deficient components.	Quarterly
Air Curtain Static Pressure (if equipped to meet ACGIH minimum)	Measure at the discharge of the fan and return to condition at time of stack test.	Quarterly
Doors	Repair or replace	Quarterly
Gas Meter (if used for control)	Calibrate	Annual

Dryer / Delacquering Kiln

Item	Instructions	Frequency
Airlocks	Inspect, adjust, and lubricate airlock systems	Weekly
Trunions	Inspect and Lubricate	Weekly
Drive System	Repair or replace	Monthly
Combustion Blower Motor Bearings	Lubricate	Monthly
Afterburner Blower Motor Bearings	Lubricate	Monthly
HGG Flow Damper	Inspect, clean if required	Quarterly
Kiln fins/buckets (baffles)	Repair or replace	Quarterly
Quench System	Repair or replace	Quarterly
Pressure Signal Tubing	Repair or replace	Semi-annual
Controllers	Calibrate	Semi-annual
Kiln Burner	Calibrate	Semi-annual

Afterburner

Item	Instructions	Frequency
Pilot	Inspect & clean if necessary, (if equipped)	Annual
Spark rod	Inspect & clean if necessary, (if equipped)	Annual
Flame sensing eye	Inspect & clean if necessary, (if equipped)	Annual
Burner Tip	Inspect, repair or replace	Annual
Combustion Blower Motor Bearings	Lubricate	Annual
Combustion Blower system	Inspect , clean and adjust if necessary	Annual
Doors	Repair or replace	Annual
Afterburner shell	Inspect for damage, corrosion, cracks and hot spots	Annual
Internal structure	Inspect baffles and refractory, repair as needed	Annual
Document afterburner temperature profile	Print out and file 4 hour afterburner temperature profile	Annual