Sebesta Blomberg

Startup Shutdown & Malfunction Plan

For

Laurentian Energy Authority Hibbing, MN

Sebesta Blomberg Project No. 551204.00

December 13, 2006

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1.0 Introduction

Compliance with 40 CFR Part 63 Subpart DDDDD National Emission Standard (NESHAP) for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters (more commonly referred to as Boiler MACT) requires Hibbing Public Utility (HPU) to have a written a Startup Shutdown and Malfunction Plan. (SSM) Plan for its wood-fired boiler upon startup. The plan is intended to detail procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction; and a program of corrective action for malfunctioning process, air pollution control, and monitoring equipment used to comply with the relevant standard.

A copy of the SSM plan is kept on file with HPU's Engineering Department. A copy of the plan can be obtained by contacting the Engineering Department at (218) 262-7700. HPU acknowledges that the Environmental Protection Agency (EPA) or Minnesota Pollution Control Agency (MPCA) can request to inspect the plan or request a copy (including an electronic copy) of the plan at any time. This plan is not required to be kept on file at the EPA or MPCA.

HPU's Engineering Department is responsible for maintaining and revising the Startup, Shutdown and Malfunction plan. This Engineering is also responsible for maintaining the Operation and Maintenance (O&M) manuals for the specific pieces of equipment as identified in this plan.

Revisions to the plan may become necessary due to changes in equipment or procedures. Previous versions of the plan will be kept on file for a period of 5 years. If any of the affected sources ceases operation, or is no longer subject to this provision, HPU will maintain the most recent plan for a period of 5 years.

2.0 Purpose

The purpose of this plan is to identify and document the procedures for operating and maintaining the wood-fired boiler, electrostatic precipitator (ESP), and continuous opacity monitor (COM) to minimize any excess emissions during periods of startup, shutdown, or malfunction.

3.0 Definitions

For a plan to be effective the meaning of startup, shutdown and malfunction need to be defined. HPU is using the following definitions to define startup, shutdown, and malfunction.

> **Startup:** The setting in operation of an affected source or portion of an affected source for any purpose.
>
> **Shutdown**: The cessation of operation of an affected source or portion of an affected source for any purpose.

Malfunction: 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 limitation in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

Boil-out. Refers to the process where an alkaline solution is put through a new boiler to remove deposits of residual oil, grease and protective coating inherent in manufacturing procedures. The process of boiling out the boiler is considered part of the construction phase of the boiler and not part of start-up. This is consistent with EPA guidance from memorandums dated September 25, 1978 and May 5, 1980.

A list of acronym definitions is attached to this plan in Appendix A.

4.0 Affected Sources

The sources covered in this SSM plan are the Wood Fired Boiler, Electrostatic Precipitator (ESP), and Continuous Opacity Monitor (COM).

4.1 *Wood Fired Boiler*

The wood-fired boiler is a Foster Wheeler Boiler with a Detroit Stoker shaker style moving grates. The wood-fired boiler has a rated heat input capacity of 230 MMBtu/hour. The boiler exhaust passes through an electrostatic precipitator (ESP) for removal of particulate matter (PM).

4.2 *Electrostatic Precipitator*

The ESP was manufactured by PPC Industries and controls particulate emissions from the wood-fired boiler.

4.3 *Opacity Monitor*

The Teledyne LightHawk 560 is designed to meet or exceed all requirements of ASTM D6216 "Standard Practice for Continuous Opacity Monitor Manufacturers to Certify Design conformance and Monitor Calibration." The LightHawk 560 is a double pass compliance opacity monitor that can be used in U.S. compliance opacity applications regulated by 40 CFR Part 60, Appendix B, Performance Specification 1 (PSI). The model 560 is capable of generating outputs in terms of operating optical density and also provides a continuous and automated zero and span check.

HPU maintains a Quality Control/Quality Assurance (QA/QC) Plan for the continuous opacity monitoring system (COMS) as required by state and federal regulations. The QA/QC Plan documents quality assurance procedures to ensure that the COMS continuously produce accurate

data. The QA/QC Plan addresses decision maintenance activities, data analysis, and report writing. HPU also maintains a site specific monitoring plan for the opacity monitoring system. The site specific monitoring plan details the test dates, installation location, performance evaluation procedures and acceptance criteria, and ongoing operations and maintenance procedures.

5.0 Startup and Shutdown Procedures

5.1 *Wood-fired Boiler*

The wood-fired boiler is a Foster Wheeler Boiler with a Detroit Stoker Rotosoker-VCG stoker grate. The boiler and stoker grate have specific operation and maintenance manuals. The Foster Wheeler Boiler O&M manual covers startup and shutdown and how to light off the wood bed.

The main concern during startup and shutdown is maintaining proper combustion. Without proper combustion excess emission may occur. HPU will light a wood bed in the combustion chamber to reach sufficient temperature prior to the biomass being continuously fed to the system. Prior to the desired temperature being reached (300 °F) the ESP will not be in service. HPU will adjust the air flow to maintain the proper air to fuel ratio to reduce emissions during the startup process.

During shutdown of the boiler the fuel feed system will be stopped but air flow will be maintained to combust the remaining fuel in an oxygen rich environment. Once the stack temperature reaches 250 °F the ESP will be shutdown. Maintaining a proper air to fuel ratio during shutdown by overfeeding air will result in minimizing emissions during shutdown.

5.2 *Electrostatic Precipitator*

The basic operation instructions are listed in Chapter 3 of the O&M manual for the ESP as provided by PPC Industries. Only one person per shift is assigned to the operation and maintenance of the precipitator.

5.2.1 Startup Procedures

1. Clean all support, vibrator and feed-thru insulators. Both the inside and the outside of the support insulators are to be cleaned. Remove all oily residues with vinegar.

2. Close and lock all man ways, checking to be sure that no tools, etc., have been left inside.

3. Perform Dead Air Tests per the instructions in Chapter 6 starting on page 1 of 5 of the O&M manual.

4. Energize screw conveyors, purge blowers, vibrators, and rappers
5. Verify screw conveyors, purge blowers, vibrators and rappers are operating. The blowers must be operating **before** starting the I.D. fan.
6. Slow heat precipitator at a rate of 200 °F per hour.
7. Energize precipitator high voltage when precipitator outlet temperature maintains approximately 300 °F for two hours.

5.2.2 Shutdown Procedures

1. De-energize the precipitator high voltage before the temperature reaches 250° F.
2. After the unit has cooled down to ambient temperature, the screw conveyors, rappers, and vibrators may be turned off if maintenance to the precipitator internals are required. Otherwise, they should be left in operation if the outage is short.
3. Purge air blowers should remain in operation and are to be shut off only in the event of extended shut-down periods. If there has been extended shut-down periods, then the purge air blowers should e energized and allowed to operate before starting the I.D. fan
4. The insulators must be cleaned any time the precipitator is taken off line. Clean both the inside and outside of the insulators. Remove all residues from the support, vibrator and feed-thru insulators.

5.3 *Continuous Opacity Monitor*

The opacity monitor is a Lighthawk 560 manufactured by Teledyne Instruments (serial number: 560113). The monitor has a detailed O&M manual which describes installation, operation, calibration and routine maintenance procedures. A written Site Specific Monitoring Plan and a Quality Control/Quality Assurance Plan is also maintained for the COMS.

The COMS installation is in accordance with 40 CFR Part 60, Appendix B, Performance Specification 1, Section 8.1(2)(i-ii).An opacity monitor is hard wired which means as soon as the breaker is on the monitor is functioning. In the event the boiler is not operating the data acquisition system would still record opacity but it would be noted that the boiler was not in operation.

The COMS will be maintained and operated as specified in EPA 40 CFR 63.8(c) and in a manner consistent with good air pollution control practices and as specified in EPA 40 CFR 63.6(e)(1).

6.0 Malfunction

Possible malfunctions that could occur to the wood-fired boilers and ancillary equipment that could affect air emissions have been identified along with the corrective and preventive actions.

6.1 *Wood Boiler Malfunction*

HPU identified possible operating scenarios that if they were to occur, could result in excess emissions from the wood-fired boilers system (inclusive of ESP and COMS). Included with this matrix are the actions to be taken to minimize or prevent any emissions in the event one of the incidences was to occur.

Table 1. Failure Matrix Wood-Fire System

Possible Malfunction	Effect	Result	Immediate Action	Corrective Action	Preventive Action
Oxygen level less than 2% in combustion chamber	Poor combustion Low oxygen alarm sounds	Carryover of unburned carbon into ESP may result in potential of poor performance of ESP	Determine why O2 level decreased.	Increase air flow in boiler	Routine Maintenance and Calibration
O2 Analyzer Fails	Lose O2 indication and ability to optimize combustion	Alarm sounds. Combustion may not be optimized resulting in the potential for increased PM and opacity	Repair or replace O2 analyzer as soon as possible	Determine cause of analyzer failure	Calibrate quarterly
COM system failure**	COM system out of control	No records of opacity level.	Repair COM system and inform EPA	Troubleshoot to determine cause and modify QA/QC plan.	Routine Maintenance
Single field failure in ESP (1 of 3 fields)*	Reduced ESP performance.	Potential increase in opacity and PM	Bring reserved field on-line. Schedule maintenance for next available outage and possibly reduce boiler load.	Repair ESP	ESP designed to be compliant with only 2 of the three fields in operation. Maintenance program to ensure all three fields are operable.

Possible Malfunction	Effect	Result	Immediate Action	Corrective Action	Preventive Action
Multiple field failure in ESP (2 of 3 fields)	Reduced ESP performance.	Potential increase in opacity and PM	Reduce load and or shutdown boiler in controlled fashion.	Repair ESP	Routine Maintenance
High ESP ash hopper level (internal of ESP)	Grounding of sections leading to reduced ESP performance.	Potential increase in opacity and PM	Empty hopper	Investigate ash handling system and fix accordingly.	Routine Maintenance
ESP controller/power failure	Reduced ESP performance or complete shutdown.	Potential increase in opacity and PM	Reduce load and or shutdown boilers in controlled fashion.	Repair ESP	Routine Maintenance
Ash system failure when firing wood (external ESP)	High ash levels in hopper resulting in grounding in ESP.	Potential Increase in opacity and PM	Determine cause and correct.	Investigate ash handling system and fix accordingly.	Routine Maintenance
Control Linkage/Drive Failure on Combustion Side	Alarm and potential for combustion upset	Short-term potential for increase in PM and opacity	Find and correct while monitoring opacity.	Fix, assess, and schedule maintenance	Routine maintenance that includes stroking the linkage to ensure free and complete movement
Boiler Tube Leak	Combustion impacted	Potential for increase in PM and opacity	Investigate and determine cause. Then shutdown boiler in controlled fashion.	Fix leak or replace tube.	Boiler inspected annually and water chemistry monitored.

*HPU's normal operating procedure is to operate two of the three fields of the ESP.
**In the event the opacity monitor is out of control, HPU will check for visual emissions (VEs) once per shift during daylight hours and as weather permits. If VEs are observed, the cause will be determined and corrected. The time and date of each VE inspection, and whether or not any VEs were observed will be recorded. If VEs are observed, record a brief description of they type of corrective actions taken, and the date the actions were taken.

7.0 Maintenance

HPU uses SOMAX, an electronic tracking system that is used to requests and schedule maintenance activities including calibration of the COMS. In addition to this system, HPU uses operator logs to log items such as daily checks and weekly inspections. The combination of the automatic system and the operator logs will serve as an historical record that the maintenance activities have been completed. On a semiannual basis Engineering will review to confirm that the maintenance activities were completed.

7.1 *Wood-Fired Boiler*

The wood-fired boiler is a Foster Wheeler Boiler with a Detroit RotoStoker-VCG grate. The boiler and burners have specific O&M manuals. The Foster Wheeler O&M and Detroit Stoker O&M manuals have specific sections devoted to Inspection and Maintenance.

7.2 *Electrostatic Precipitator*

Maintenance activities associated with operation of the ESP are detailed in Section 5 of its O&M manual. The maintenance procedures include a list of items to inspect and clean during any outage. For detailed information on maintenance refer to the O&M manual. Table 2 presents a summary of the routine maintenance activities including schedule.

Table 2 Precipitator Maintenance Schedule Summary

Log operating values	daily
Walk around unit	daily
Check purge air blowers	weekly
Inspect purge air filters	Inspect weekly replace on condition
Inspect rapper and vibrators	weekly
Inspect rapper controls	weekly
Manway latches lubrication	annual
Check key interlock system	annual
Operational dead air tests	Special[a]
Calibration of the GVC	Special[a]
Inspection of Microprocessor Settings	Special[a]
During any outage or at least annually:	
Inspection of bus ducts	Annual
Check manway gaskets	Annual
Inspect electrical enclosures	Annual
Check discharge electrodes	Annual
Replace screw conveyor seals	Annual
Inspect shaft seals under plate rappers	Annual

[a] *Special – anytime the unit is down for service or a problem occurs*

7.3 *Opacity Monitor*

The QA/QC plan addresses preventive maintenance activities to be performed in Section 6. In addition, detailed installation, operating and maintenance for the COM can be found in the Operations Manual. Section 7.0 of the COM Operations Manual contains the information to provide proper maintenance of the instrument. . In addition the manual contains maintenance check sheets in its appendix B.

Specifically routine maintenance consists of:

- verifying the LED operation current,
- checking the condition of Purge Air Systems,
- cleaning and aligning of the Optical Head, Retroreflector and Cal Mechanism,
- performing a manual calibration check, and
- checking the dust compensation.

Please note that performing either Routine Maintenance or an On-stack Calibration, the monitor will experience malfunctions and will not be collecting valid data. Operators are required to be notified that maintenance is being performed and that the monitor will be out of service until the maintenance or calibration is complete.

8.0 Recordkeeping and Reporting

Operations and Maintenance personnel are required to maintain the following information relative to startup, shutdown, and malfunction events:

- **Occurrence and duration of each SSM event** – this information will be automatically collected from the DAS or by operator logs and recorded on either a periodic SSM report or an immediate SSM report whichever report is suitable for the triggering event.
- **Information to demonstrate conformance with the plan –** The DAS, SOMAX, operator logs, and SSM reports will serve as the basis used to demonstrate that HPU is in conformance with the plan.
- **Actions taken during any event that vary from procedures in the plan** – Actions will be reviewed after each event and the appropriate reporting form will be completed detailing actions taken if they were or were not consistent with the plan.
- **All maintenance performed on ESP or COMS** – SOMAX is a database system that schedules and tracks all maintenance items. Engineering will check on a semiannual basis that the

maintenance requirements (including calibration of the COMS) is being completed and documented.

- **Each period that the COMS is malfunctioning, inoperative or out of control** – The DAS automatically records periods when the COMS is malfunctioning, inoperative, or out of control. In addition the operator receives an alarm to notify if the system is shutoff or if there is a high reading.
- **All COMS calibration checks and adjustments** - SOMAX is a database system that schedules and tracks all maintenance items including calibration checks and adjustments. Engineering will check on a semiannual basis that the calibrations and adjustments are being completed and documented as required.
- **Nature and cause of malfunction** – In addition to the DAS, HPU will complete either the periodic SSM report or the immediate SSM report (whichever is applicable based on the event). This report is required to detail the nature and the cause of the malfunction.
- **Corrective actions taken or preventive measure adopted** – As part of the SSM reports, the corrective actions taken or preventive measures adopted will be documented and the SSM plan will be revised as appropriate.
- **Nature of repairs of adjustments if COMS is inoperative or out of control** – SOMAX will be used to schedule maintenance and document that it was completed. Engineering will access SOMAX on a semiannual basis to review any repairs or adjustments on the COMS.

The reports and documentation of maintenance activities must be recorded and retained for 5 years.

8.1 *Periodic Startup, Shutdown, and Malfunction Report*

A periodic report is required when actions taken during a startup, shutdown or malfunction may have caused the source to exceed an applicable Boiler MACT emission limit and the response. The report must include actions taken to minimize emissions: and number, duration, and brief description of each type of malfunction. A reporting form that is required to be completed is attached in Appendix B. This form is also available electronically at www.hpuc.com. Once completed the form is to be emailed to:

CHUCKB@HPUC.OM

HPU Engineering will submit these reports on a semiannual basis to the EPA. The reports will be accompanied with a certification letter. The periodic reports are due 30 days after each semiannual period. The address for submittal is:

Environmental Protection Agency Region 5
Attn: George Czerniak
77 West Jackson
Chicago, IL 60604

8.2 *Immediate Startup, Shutdown, and Malfunction Report*

An immediate report is required when actions taken during a startup, shutdown or malfunction caused the source to exceed an applicable Boiler MACT emission limit and the response **DID NOT** conform to this plan. This report shall be communicated verbally within two (2) working days after the start of the response to the EPA. A written report shall follow within seven (7) days of the close of the event and contain the following information:

1. Name, title, and signature of the owner, operator, or other responsible official certifying the accuracy to the report.
2. Explanation of the event.
3. Reason(s) the plan was not followed.
4. Description of all parameters that monitored exceedances (documented or potentially occurred).
5. Actions taken to minimize emissions.

A reporting form that is required to be completed is attaché in Appendix B. This form is also available electronically at www.hpuc.com. Once completed the form is to be emailed to:

CHUCKB@HPUC.OM

HPU Engineering will forward to the EPA with the certification letter within seven (days) of the close of the event. Environmental Management in conjunction with Facilities Management shall form a committee to review the SSM plan and complete revisions as necessary.

The address for submittal is:

Environmental Protection Agency Region 5
Attn: George Czerniak
77 West Jackson
Chicago, IL 60604

9.0 Forms

The following forms and checklists are available in Appendix B. Electronic copies of these documents are located at www.hpuc.com.

9.1 *Report Forms*

Periodic SSM Report – Used to document startup, shutdown or malfunction events that even the SSM plan was followed an applicable emission limit may have been exceeded. These forms are required to be completed by operations staff and forwarded to Engineering. Engineering will submit these reports on a semiannual basis to the EPA.

Immediate SSM Report – Used to document startup, shutdown or malfunction events where the SSM plan was **NOT FOLLOWED** and an applicable emission limit was exceeded. These forms are required to be completed by operations staff and forwarded to Engineering. Engineering will submit these reports to the EPA within seven (7) working days of the close of the event.

Notification of Revision of SSM Plan – This report form is to be used to communicate to the EPA that the SSM Plan was revised and the reason the revision was completed. When revisions to the SSM Plan occur, those revisions are required to be communicated to the EPA as part of the semiannual compliance report.

If you have any questions or need assistance completing the forms please contact Chuck Berg, Director of Engineering 218-262-7702.

10.0 Roles and Responsibilities

Table 3.0 was prepared to summarize the roles and responsibilities as identified in this plan.

Table 3.0 Summary of Roles and Responsibilities

Role	Responsible Party
Updating and maintaining SSM Plan	Operations
Identification of any affected source being in SSM.	Boiler Operator
Maintaining records of maintenance activities on affected sources for a period of at least 5 years.	Operations
Completing Periodic or Immediate SSM reports and submitting to Environmental Management	Operations
Notifying Environmental Management that an SSM resulted in an emission limit being exceeded.	Operations
Filing Semiannual Reports to EPA	Engineering
Communication to EPA that an emission limit was exceeded (within 2 working days of event) and the response did not follow the plan.	Engineering
Filing of written report to EPA (within 7 days of the close of the event) of an SSM event that exceeded an emission limit and the response did not follow the plan.	Engineering
Maintaining historical record of SSM Reports.	Engineering

11.0 Revisions of the SSM Plan

Each version of this plan must be maintained on-site for a period of 5 years after its revision. HPU is required to revise the plan within 45 days of an occurrence not adequately covered in this plan. Revisions to this plan are required to be reported in the next semiannual report after the revision.

Required revisions include:

1. Plan fails to address a startup, shutdown, or malfunction event that has occurred;
2. Plan fails to provide for the operation of the source (including associated air pollution control and monitoring equipment) during a startup, shutdown, or malfunction that is consistent with the general duty to minimize emissions;
3. Plan does not provide adequate procedures for correction malfunction process and/or air pollution and monitoring equipment as quickly as practicable; or
4. Plan includes an event that does not meet the definition of startup, shutdown or malfunction (see definitions included in this plan).

12.0 Historical Information on SSM Plan

This section of the plan is also intended to be a record of when the plan was first prepared and the date and reason for any revisions. This plan was initially prepared and made final in December of 2006. Any subsequent revisions and the reason for the revision will be recorded in this section and will serve as historical documentation of the plan.

LIST OF ACRONYMS

ASTM – American Standard for Testing and Measurement

CFR – Code of Federal Regulations

COM – Continuous opacity monitor

COMS – Continuous opacity monitoring system

DAS – Data Acquisition System

EPA – Environmental Protection Agency

ESP – Electrostatic precipitator

GVC – Graphical voltage control

LED –Light emitting diode

MACT – Maximum Achievable Control Technology

MMBtu/hr – Million British thermal units per hour

MPCA –Minnesota Pollution Control Agency

NESHAP – National Emission Standard for Hazardous Air Pollutants

O2 – Oxygen

O&M – Operation and Maintenance

PM – Particulate Matter

QA/QC – Quality assurance and quality control plan

SSM – Startup Shutdown Malfunction

618 2nd Street South | Virginia, MN 55792 | Phone: 218.748.7564

Laurentian Energy AUTHORITY

PERIODIC SSM REPORT

Contact your supervisor and Environmental Management immediately in the event of a Startup, Shutdown, or Malfunction that may cause excessive emissions.

On_____, 20_____ , Laurentian Energy Authority [Hibbing site or Virginia site] (Circle site of event) experienced a: (check one)

☐ Startup ☐ Shutdown ☐ Malfunction

Affecting the: *(check at least one)*

☐ Wood-fired Boilers ☐ Continuous Opacity Monitoring System

☐ Electrostatic Precipitator ☐ Coal fired Boiler

The duration of the event was (start and end time and date)_____ and was reported by_____.

Description of event:

Emission limit that was or may have been exceeded:

Corrective actions taken:

Was the corrective action taken consistent with Andersen's SSM plan? *(Check one)*: ☐ Yes ☐ No

If not, please explain:

Will the SSM plan be revised as a result of this event? *(Check one)* ☐ Yes ☐ No

EMAIL THIS COMPLETED FORM TO:

chuckb@hpuc.com in Hibbing and ganoed@vpuc.com in Virginia

Contact the Hibbing Engineering Department at 218.262.7723 for the Hibbing site and Virginia Operations Department at 218.748.2102 for the Virginia site with any questions.

618 2nd Street South | Virginia, MN 55792 | Phone: 218.748.7564

Laurentian Energy Authority

IMMEDIATE SSM REPORT

Contact your supervisor and Environmental Management immediately in the event of a Startup, Shutdown, or Malfunction that causes excessive emissions.

On_____, 20_____ Laurentian Energy authority experienced a: (check one)

☐ Startup ☐ Shutdown ☐ Malfunction

Affecting the: *(check at least one)*:

☐ Wood-fired Boiler ☐ Continuous Opacity Monitoring System

☐ Electrostatic Precipitator ☐ Coal Boilers

The duration of the event was (start and end time and date) _____ and was reported by_____.

Because actions taken during this event were not consistent with LEA's SSM Plan, and an applicable emission limit was exceeded, it was immediately reported (within two (2) working days) to the EPA. This information was communicated by ☐ telephone ☐ email ☐ fax *(check at least one)* to _____ at the EPA on_____. *(Please attach a copy of the email or facsimile to this report for documentation)*

Describe the event which caused or may have caused an applicable emission limit to be exceeded, which limit, and the corrective actions taken (attach additional pages if needed):

Describe how the corrective action taken was inconsistent with LEA's SSM plan, why the plan was not followed:

A letter with the information contained in this report is required to be submitted within seven (7) working days after the end of the SSM event.

Contact Chuck Berg for the Hibbing site 218.262.7723 or Doug Ganoe at the Virginia site 218.748.2102 with any questions.

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Laurentian Energy Authority

Notification of Revision of SSM Plan

LAURENTIAN ENERGY AUTHORITY hereby notifies the EPA that on_____, 20_____ its Startup Shutdown and Malfunction (SSM) Plan was revised. This notification is being submitted as part of the semiannual compliance report to satisfy the requirements of 40 CFR 63.6(e)(3)(viii) and 63.10(d)(5)(i).

Was this revision was made in response to an SSM event? ☐ Yes ☐ No

If yes, list the date of the SSM event: _____

Was this SSM event previously reported? ☐ Yes ☐ No

If no, explain:

Describe why the revision is being made.

Describe how revisions were communicated to management and operations staff.

Previous versions of the SSM plan are required to be kept on file a period of 5 years after the revision is made.

Contact Hibbing Public Utilities Engineering Department at 218.262.7723 with any questions for the Hibbing site and the Virginia Public Utilities Operations Department at (218) 748.2102 for questions on the Virginia site.