



Secondary Aluminum NESHAP 40 CFR Part 63 Subpart RRR

Example Malfunction Plan for Plant ABC

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This is an example of one way to write a malfunction plan. Citations to Federal requirements found in Title 40 of the Code of Federal Regulations (CFR) are provided for reference, as applicable.

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Table of Contents

- 1 Important Message to Readers**
- 2 About Malfunction Plans**
 - 2-1 Regulatory Overview**
 - 2-2 Defining Malfunctions**
 - 2-3 Types of Potential Malfunctions**
- 3 What Do I Report to the State/EPA When There Is a Malfunction?**
- 4 Malfunction Plan Checklist**
- 5 Sample Plant ABC Malfunction Plan**
 - 5-1 Malfunction Plan Overview and Approval**
 - 5-2 Important Phone Numbers**
 - 5-3 Malfunction of Monitoring System Components:
Monitoring Equipment, Data Acquisition**
 - 5-4 Catastrophic Events: Fire, Lightening, Weather, and Other
Acts of God**
 - 5-5 Loss of Utilities: Power, Gas, Water, etc. (as applicable to
facility equipment)**
 - 5-6 Sudden and Unavoidable Failure of Equipment (not due to
poor operation or maintenance)**
 - 5-7 What to Record for a Malfunction Event**
 - 5-8 Who to Notify in Case of a Malfunction**
 - 5-9 Plant ABC Malfunction Report Form**

1

Important Message to Readers

The Secondary Aluminum NESHAP (40 CFR, Subpart RRR, §§63.1500-1520), requires that affected facilities develop and implement a written Malfunction Plan, as part of a Startup, Shutdown, and Malfunction Plan (SSM Plan) that meets the requirements of §63.1516(a) of Subpart RRR and §63.6(e)(3) of Subpart A, General Provisions for the National Emissions Standards for Hazardous Air Pollutants (NESHAP).

This document is intended to provide an example of the type of information that could be included in a facility Malfunction Plan. It does not address Startup and Shutdown Plans, however, that sources also must have for their process equipment. You are required to develop a Malfunction Plan if you operate secondary aluminum process equipment or air pollution control and monitoring equipment. (§63.6(e)(3)).

Facilities subject to Subpart RRR may differ from the example Malfunction Plan shown here because of the types of equipment and processes at their facility. Each facility also may differ in the procedures it uses to identify and respond to malfunction events. For these reasons, the example Malfunction Plan should be treated only as an illustration that may be useful to facilities as a starting point for developing Malfunction Plans that are plant-specific.

The example Malfunction Plan provided here is for information purposes only. It should not be used for regulatory interpretation or enforcement purposes.

2

About Malfunction Plans

- 2-1 Regulatory Overview**
- 2-2 Defining Malfunctions**
- 2-3 Types of Potential Malfunctions**

2-1 Regulatory Overview

The general regulatory requirements cited below are addressed in our plan [*Note: The NESHAP General Provisions are currently undergoing revisions which may change these requirements*]:

- §§63.6(e)(3) of Subpart A, General Provisions and 63.1516(a) of Subpart RRR requires that we develop and implement a Startup, Shutdown, and Malfunction Plan for operations used to comply with the Secondary Aluminum NESHAP (§63.1516, 63.6(e)(3)). This Malfunction Plan is intended to meet the Malfunction Part of these Federal requirements for Plant ABC operations.
- §63.1516(a)(2) and 63.6(e)(3) of Subpart A, General Provisions, requires Plant ABC to describe what corrective action we will take if a malfunction occurs at an affected process, air pollution control or monitoring equipment.
- In addition to the requirements to develop and implement a written Malfunction Plan, we are also required to (§§ 63.1516(a) and 63.6(e)(3)(vii)):
 - Keep records of any malfunction event that occurs and keep records of the actions we took to minimize emissions during the event.
 - Submit reports if procedures we took during the event are not consistent with the procedures we put in the plan and excess emissions occurred.
 - Revised the Malfunction Plan if a malfunction occurs that has not been described here or procedures for corrective action have not been adequately described.
 - Update the plan if requested by EPA or the appropriate State or Local Air Pollution Control Authority.

2-2 Defining Malfunctions

Plant ABC may experience malfunction events. Please be aware that our operators may use a different definition of the term “malfunction” than the regulatory definition.

Regulatory Definition of Malfunction

The General Provisions define a “malfunction” as:

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. Equipment and control device failures that are caused in part by poor maintenance or careless operation are not malfunctions (§63.2). *[Note: The NESHAP General Provisions are currently undergoing revisions which may change this definition]*

A true malfunction must have a reasonable potential to cause an exceedance in emissions or operating parameter.

Plant ABC also has a separate plan for routine maintenance of our process equipment and control devices covered under the Secondary Aluminum NESHAP that is called our Operating, Monitoring, and Maintenance Plan (OM&M). According to our OM&M plan, routine maintenance operations must be performed in accordance with the equipment manufacturer’s specifications and recommendations, as well as the procedures specific to Plant ABC that are detailed in our OM&M plan.

2-3 Types of Potential Malfunctions

The following is a list of malfunction events covered by the example Malfunction Plan included here:

- ☐ Failure of monitoring system components (for example, monitoring equipment, data acquisition equipment);
- ☐ Catastrophic events (for example, fire, lightening, extreme weather/storms, flood, earthquake, meteors, and other acts of god);
- ☐ Loss of utilities (for example, power, gas, water, as applicable to equipment); and
- ☐ Sudden and unavoidable failure of control or process equipment, not due to poor operation or maintenance.

3

What Do I Report to the State/EPA When There is a Malfunction?

☰ If the actions taken during the malfunction were consistent with this Malfunction Plan, we will state this fact in our semiannual excess emissions report (due within 60 days following the end of each 6-month period) with the following information included (§63.10(d)(5)(i)):

- Certifying signature of the owner/operator or other responsible official;
- Statement that the actions taken during the malfunction were consistent with the Malfunction Plan;
- The number, duration, and a brief description of malfunction that occurred during the reporting period (§63.10(d)(5)(i)) or a copy of a malfunction report form that includes this information (see Section 5-7 for an example form);
- Whether any excess emissions and/or parameter monitoring exceedances are believed to have occurred during the malfunction (§63.10(d)(5)(ii)); and
- Any additional information required by our State or permitting authority.

☰ If the actions taken during a malfunction were not consistent with this Malfunction Plan, because the plan did not address the type of malfunction that occurred and/or the actions taken were not included in the current Malfunction Plan, and excess emissions occurred, the Environmental Supervisor should report the actions taken by telephone or facsimile (FAX) transmission within two (2) working days after the malfunction. A letter must then be sent within seven (7) working days after the malfunction. The letter should include the following information (§63.10(d)(5)(ii)):

- Name, title, and certifying signature of responsible official;
- Detailed explanation of the circumstances of the malfunction;
- The reasons for not following the current Malfunction Plan; and
- Any additional information required by our State or permitting authority.

3 (continued)

What Do I Report to the State/EPA When There is a Malfunction?

- ☞ If the actions taken during the malfunction were not consistent with the Malfunction Plan or did not address the particular type of malfunction that occurred, and the Plant ABC Malfunction Plan should include these events or actions for future events, then the Environmental Supervisor at Plant ABC must also (§63.6(e)(3)(viii)):
- Revise the Malfunction Plan within 45 days after the malfunction to include procedures for operating and maintaining the source during similar malfunction events, with a program of corrective action to address the malfunctions; and
 - Report the revisions of your Malfunction Plan in the semiannual excess emissions report (within 60 days following the end of each 6-month period).
- ☞ If the revisions to the Malfunction Plan alter the scope of the process activities at Plant ABC that are deemed to be a malfunction or otherwise modify the applicability of any emission limit, work practice requirement, or other requirement in Subpart RRR, the revised Malfunction Plan is not effective until written notice has been provided to the permitting authority describing the Malfunction Plan revision(s) (§63.6(e)(3)(viii)). Depending on what our revisions are, the permitting authority and/or EPA may request to see a copy of our revised Malfunction Plan (§63.6(e)(3)(v)). [*Note to Readers: The NESHAP General Provisions are currently undergoing revisions which may change the requirements for SS&M Plan submissions.*]

4

Malfunction Plan Checklist

When you write your own malfunction plan, you should look at the following checklist to see if you have included all of the required information. This checklist includes the least amount of information that you should write down during any malfunction. You can include more information--so your employees know what to do in case of a malfunction and so you can describe as best as possible what happened during the malfunction--if you so desire.

For secondary aluminum plants, the Malfunction Plan must be developed within 60 days after the date that your secondary aluminum operations need to be in compliance with Subpart RRR. Your Malfunction Plan is part of the Notification of Compliance Status Report required by Subpart RRR for your secondary aluminum operations; this report is not complete without a Malfunction Plan (§63.1515(b)).

Checklist

- ☆ Have you included what you will do to find the cause and circumstances of all types of malfunctions of your process, air pollution control, and air pollution monitoring equipment?
- 🕒 Have you included what you will do to correct (for example, repair) the malfunctioning process, air pollution control, and air pollution monitoring equipment as soon as practical after the malfunctions happens?
- 🕒 Have you reported any changes to your Malfunction Plan in your semiannual Excess Emissions Report (due within 60 days following the end of each 6-month period) and in any other reports required by your State Implementation Plan?

(continued)

4 (continued)

Malfunction Plan Checklist

Checklist (continued)

- Ⓢ Have you included procedures for recording the following information as soon as practical after the malfunction occurs?
 - a At what piece of equipment or where in the process did the malfunction occur?
 - b What was the date and time of the malfunction and how long did it last?
 - c What was the cause of the malfunction?
 - d What did you do to correct the malfunctioning equipment?
 - e Were any emissions and/or parameters that you monitor higher or different than their values allowed by regulations during the malfunction?
 - f Is what you did during the malfunction the same as you describe it in your Malfunction Plan?
 - g If you did anything that was not in your current Malfunction Plan, what was it?

5

Sample Plant ABC Malfunction Plan

This is an example malfunction plan and it is not intended to be used for regulatory purposes. Citations to Federal requirements found in Title 40 of the CFR are provided for reference, as applicable.

5-1

Malfunction Plan Overview and Approval

Purpose of Malfunction Plan

The purpose of this Malfunction Plan is to describe the actions that will be taken at Plant ABC in the event of malfunction of equipment regulated by the Secondary Aluminum NESHAP (40 CFR Part 63 Subpart RRR). A copy of the original Malfunction Plan and all revisions is on file at the Office of the Administrator at Plant ABC [or another central location]. This plan, and prior versions will be maintained by Plant ABC for a period of five (5) years (§63.6(e)(3)(v)). This Malfunction Plan does not contain proprietary information and will be available to regulators and the public for copying. [Insert provisions if proprietary information is maintained elsewhere. Note: The NESHAP General Provisions are currently undergoing revisions which may change these requirements.]

Responsible Officials

At Plant ABC, the Environmental Manager or his designee is responsible for assuring that the most recent copy of this Malfunction Plan is made available to personnel involved with secondary aluminum operations. This individual is also responsible for ensuring that Plant ABC employees are aware of the procedures and requirements contained within this plan.

All reports associated with this Malfunction Plan shall be signed by a responsible official in accordance with §63.1516(a) and appropriate provisions under Subpart A, the General Provisions.

Malfunction Plan Approval

Environmental Supervisor _____
Name Date

Date Malfunction Plan was Prepared: _____

Prepared by: _____

Devices Covered by this Malfunction Plan (Name/ ID#/Location):

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5-2 Important Phone Numbers

Plant Foreman:

Plant Manager:

Environmental Manager:

State Hotline:

Other Relevant Numbers (e.g., fire department, power and water companies, etc.)

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5-3 Malfunction of Monitoring System Components: Monitoring Equipment, Data Acquisition

- ☆ Confirm equipment status.
- ⌚ Identify the component that has failed.
- ⌚ Notify appropriate maintenance or other responsible personnel (see Section 5-8).
- ⌚ Respond to correct or repair the malfunction in a safe, efficient and timely manner as soon as it is practicable, for example:
 - a Replace defective parts;
 - b Reinstall software; and
 - c [*add*] etc.
- ⌚ Suspend operations as soon as practicable until compliance can be assured if failure cannot be repaired in a timely manner.
- ⌚ Record pertinent information (see Section 5-7) on record sheets (see Section 5-9) to log date, time, duration, cause of malfunction, and corrective action taken. Make sure to record whether the Malfunction Plan was followed for each event.
- ⌚ Submit the Malfunction Report Form to the appropriate Plant ABC personnel (see Section 5-8).

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5-4 Catastrophic Events: Fire, Lightning, Weather, and Other Acts of God

- ☆ Ensure that the situation has become stable and the hazards have been cleared before proceeding further.
- ⌚ Confirm the system status and note which equipment is off-line or otherwise impaired.
- ⌚ Notify appropriate maintenance or other responsible personnel (see Section 5-8).
- ⌚ Respond to correct or repair the malfunction in a safe, efficient and timely manner as soon as it is practicable, for example:
 - a Right overturned equipment and attempt to reinstall/restart; and
 - b [*add*] etc.
- ⌚ Suspend operations as soon as practicable until compliance can be assured if failure cannot be repaired in a timely manner.
- ⌚ Record pertinent information (see Section 5-7) on record sheets (see Section 5-9) to log date, time, duration, cause of malfunction, and corrective action taken. Make sure to record whether the Malfunction Plan was followed for each event.
- ⌚ Submit the Malfunction Report Form to the appropriate Plant ABC personnel (see Section 5-8).

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5-5 Loss of Utilities: Power, Gas, Water, etc. (as applicable to facility equipment)

- ☆ Ensure that the situation has become stable and the hazards have been cleared before proceeding further.
- ⌚ Confirm the system status and note which equipment is off-line or otherwise impaired.
- ⌚ Notify appropriate maintenance or other responsible personnel (see Section 5-8).
- ⌚ Respond to correct or repair the malfunction in a safe, efficient and timely manner as soon as it is practicable, for example:
 - a Call power company or 911 if power failure seems plant-wide; if not, trace power failure from equipment to power source;
 - b Check source of gas or water;
 - c Trace gas or water line from equipment to the source and determine whether any leaks or breaks in line exist; and
 - d Repair any breaks or leaks that are found in the utility system at the facility.
- ⌚ Suspend operations as soon as practicable until compliance can be assured if failure cannot be repaired in a timely manner.
- ⌚ Record pertinent information (see Section 5-7) on record sheets (see Section 5-9) to log date, time, duration, cause of malfunction, and corrective action taken. Make sure to record whether the Malfunction Plan was followed for each event.
- ⌚ Submit the Malfunction Report Form to the appropriate Plant ABC personnel (see Section 5-8).

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5-6

Sudden and Unavoidable Failure of Equipment* (not due to poor operation or maintenance)

- ☆ Ensure that the situation has become stable and the hazards have been cleared before proceeding further.
- 🕒 Confirm the system status and note which equipment is off-line or otherwise impaired.
- 🕒 Notify appropriate maintenance or other responsible personnel.
- 🕒 Respond to correct or repair the malfunction in a safe, efficient and timely manner as soon as it is practicable, for example:
 - a Replace deficient part, if spares are available; and
 - b Call maintenance for assistance if needed.
- 🕒 Suspend operations as soon as practicable until compliance can be assured if failure cannot be repaired in a timely manner.
- 🕒 Record pertinent information on record sheets (attached) to log date, time, duration, cause of malfunction, and corrective action taken.
- 🕒 Record whether the Malfunction Plan was followed for each event.

* *Such as sudden fan failure, lime feeder failure, broken salt feeder, numerous simultaneous bag breaks/leaks, etc.*

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5-7

What to Record for a Malfunction Event

- ☞ The following information should be recorded by the operator on the attached Malfunction Report Form (See the reporting requirements for malfunctions in Section 3):
 - ★ The date and time the malfunction began and ended (estimated as best as possible) (§63.10(b)(2)(ii));
 - ★ The duration of the malfunction (§63.10(b)(2)(ii));
 - ✱ Suspected cause of the malfunction (§63.1516(a)(1));
 - ✱ The actions taken to correct the malfunction (§63.1516(a)(2));
 - ⊕ If you followed the procedures in this Malfunction Plan (§63.10(b)(2)(v));
 - ⊕ If you did not follow the procedures in the Malfunction Plan, your reasons for following other procedures than those in the Malfunction Plan (§63.10(d)(5)(ii));
 - ◇ Whether any excess emissions and/or parameter monitoring exceedances are believed to have occurred during the malfunction (§63.10(d)(5)(ii));
 - ⊖ Pertinent process information during the time of the malfunction, as indicated on the Malfunction Report Form; and
 - ◇ Any suggestions for revisions to the Malfunction Plan to better accommodate malfunctions such as that which occurred.
- ☞ The completed Malfunction Report Form should be reviewed and signed by the Shift Supervisor and any additional comments added. (See the reporting requirements for malfunctions in Section 3).

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5-8 Who to Notify in Case of a Malfunction

- ☆ You should notify the Shift Supervisor about the malfunction as soon as practicable.
- ⌚ If the malfunction cannot be corrected within a reasonable amount of time after detection (e.g., 60 minutes), notify the Shift Supervisor.
- ⌚ The operator on duty should complete the Malfunction Report Form prior to the end of the shift or no later than 24 hours following the malfunction and submit it to the Shift Supervisor.
- ⌚ The Shift Supervisor should review and sign the Malfunction Report Form and submit a copy to the Environmental Supervisor. Retain the original form in the shift files for five (5) years (§§63.1517(a)(1) and 63.10(b)(1)).

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5-9

Plant ABC Malfunction Report Form

Date:

Malfunctioning device:

Time malfunction began (estimated):

Time malfunction ended:

Total duration of malfunction: hours minutes

Suspected cause of malfunction:

Corrective action(s) taken:

Was this malfunction covered by the Malfunction Plan?

Yes No

Were your actions consistent with the Plant ABC Malfunction Plan during the malfunction?

Yes No

If your actions were not consistent with the Plant ABC Malfunction Plan during the malfunction, explain why you took other actions:

Have you reported your actions that were not consistent with the Plant ABC Malfunction Plan to the proper authorities by telephone or FAX within 2 working days of the event and sent a letter within 7 working days of the event?

Do you believe that any excess emissions and/or parameter monitoring exceedances occurred during the malfunction? Yes No

Which, if any, units were shut down because of malfunction:

Do you have any suggestions for future events like the one that occurred?

Your name:

Your signature:

Name of Supervisor on duty during malfunction:

Comments of Supervisor:

Signature of Supervisor:

21