

**Summary of Requirements
for MACT Standard's Startup, Shutdown, and
Malfunction Plans**

September 2003

**Prepared by:
EC/R Incorporated
6330 Quadrangle Dr., Suite 325
Chapel Hill, NC 27517**

**Prepared for:
Information Transfer and Program Integration Division
Office of Air Quality Planning Standards
U.S. Environmental Protection Agency
Research Triangle Park, NC 27711**

TABLE OF CONTENTS

1. What Is Meant by Startup, Shutdown and Malfunction? 1

2. What Requires Me to Write a Startup, Shutdown, and Malfunction Plan? 1

3. What Is the Purpose of a Startup, Shutdown, and Malfunction Plan? 1

4. When must My Startup, Shutdown, and Malfunction Plan Be Developed? 2

5. What Information Should My Startup, Shutdown, and Malfunction Plan Contain? 2

6. When Am I Required to Use the Startup, Shutdown, and Malfunction Plan? 2

7. Who Sees the Startup, Shutdown, and Malfunction Plan and How Long Do I Keep It? . . 3

8. When Do I Need to Modify My Startup, Shutdown, and Malfunction Plan? 3

9. Do I Have to Keep Any Startup, Shutdown, and Malfunction Records? 4

10. Do I Have to Submit Any Startup, Shutdown, and Malfunction Reports? 4

ATTACHMENT A – SS&M PLAN CHECKLIST A-1

ATTACHMENT B – SAMPLE SS&M RECORDKEEPING CHECKLIST B-1

1. What Is Meant by Startup, Shutdown and Malfunction?

- **Startup** is defined as “setting in operation of an affected source or portion of an affected source for any purpose” (40 CFR 63.2). Startup is what you do when you start your process equipment.
- **Shutdown** is defined as “the cessation of operation of an affected source or portion of an affected source for any purpose” (40 CFR 63.2). Shutdown is what you do when you turn your process equipment off.
- **Malfunction** is defined 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 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” (40 CFR 63.2). A malfunction is what happens when your equipment stops working properly because of an unforeseeable equipment or other process-related failure. It does not include what happens to your equipment if you fail to maintain the equipment properly or are careless during operation so that the equipment breaks down or stops working properly.

2. What Requires Me to Write a Startup, Shutdown, and Malfunction Plan?

The Federal air pollution control requirements published by the EPA require you (owners and operators of MACT sources) to write and put into use a Startup, Shutdown, and Malfunction Plan (SS&M Plan). See Section 63.6(e)(3)(i) of the EPA “General Provisions” for these requirements.^a

3. What Is the Purpose of a Startup, Shutdown, and Malfunction Plan?

The purpose of the SS&M Plan is to make sure that:

- You run (and keep in good running order) your MACT sources so that your facility’s air emissions are minimized during all startups, shutdowns, and malfunctions (SS&M) to the greatest extent which is consistent with safety and good air pollution control practices (§63.6(e)(3)(i)(A));
- You are ready to correct (for example, repair) malfunctions as soon as practical after they happen so as to minimize any emissions that might occur as a result of the malfunction (§63.6(e)(3)(i)(B)); and

^a For more information, see the relevant sections in the most recent version of the General Provisions §63.6(e)(3) and §63.10(b), (c), and (d).

- Your reporting duty is simplified when a SS&M happens since the procedures you followed during the startup or shutdown or to correct a malfunction are already described in your SS&M Plan (§63.6(e)(3)(i)(C)).

4. When must My Startup, Shutdown, and Malfunction Plan Be Developed?

The SS&M Plans must be developed by the compliance date of your NESHAP (§63(e)(3)(i)) or as otherwise specified for your MACT source.

5. What Information Should My Startup, Shutdown, and Malfunction Plan Contain?

Your SS&M Plan should describe how you are going to startup and shutdown your MACT source. The SS&M Plan should also describe how you will handle malfunctions of these processes to minimize emissions, as well as malfunctions of the devices that control and monitor the emissions from your regulated air pollution sources including your continuous emissions monitoring systems (CEMS) (§63.6(e)(3)).

Your SS&M Plan should describe, the information listed below (§63.6(e)(3)). See Attachment A for a SS&M Plan checklist.

- How you plan to operate, or in other words, how you will run, your MACT process equipment during startups and shutdowns to minimize emissions;
- How you plan to operate your MACT source during malfunctions to minimize emissions; and
- How you plan to correct/repair malfunctioning equipment as soon as practical after malfunctions occur.

It may also be helpful to address in your SS&M Plan the information that will be recorded during each SS&M (§§63.6(e)(3) and 63.10(b)). See section 9 of this document for the list of information that you need to record. The records may take the form of a “checklist” or any other type of recordkeeping that keeps track of the same information (§§63.6(e)(3)(iii) and 63.10(b)(2)(v)). See Attachment B for an example checklist.

You may use a standard operating procedures (SOP) manual, an Occupational Safety and Health Administration (OSHA) plan, or other plan to satisfy the requirements for writing a SS&M Plan as long as the other plan meets all the requirements of a SS&M Plan, as described here (§63.6(e)(3)(vi)). Some MACT sources reference portions of their SOP manual in their SS&M Plan.

6. When Am I Required to Use the Startup, Shutdown, and Malfunction Plan?

You must use the SS&M Plan during all SS&M of your MACT sources, and run and keep in good running order your MACT source using the procedures you describe in your SS&M

Plan (§63.6(e)(3)(ii)). If it is impracticable in a given situation to follow the procedures in your SS&M plan, you must revise your SS&M plan as described in Section 8.

7. Who Sees the Startup, Shutdown, and Malfunction Plan and How Long Do I Keep It?

- Your SS&M Plan is a public document and may be requested by the public. You must submit your plan to your permitting authority when asked to do so in response to a request from the public. It may also need to be submitted as required by the NESHAP for your source.
- Under your permit required by Title V (part 70 and 71) of the 1990 Clean Air Act Amendments you are required to have an SS&M plan. Your Title V permit also requires you to follow the procedures in your SS&M Plan during all times of startups, shutdowns, and malfunctions as you operate the equipment at your facility. Revisions made to your SS&M Plan are not considered Title V permit revisions. Also, none of the procedures in the SS&M Plan fall within the “permit shield” provision in Section 504(f) of the Clean Air Act (§63.6(e)(3)(ix)).
- You should keep a copy of your SS&M Plan in a safe place with your other important records so that it can be read or copied by EPA or any other regulatory agency for as long as you continue to operate your MACT processes and for five (5) years after you stop operating the process (§63.6(e)(3)(v)).
- If your SS&M Plan is ever revised, you should also keep the previous versions for five (5) years afterwards so that it can be available to EPA or any other regulatory agency and the public (§63.6(e)(3)(v)).

8. When Do I Need to Modify My Startup, Shutdown, and Malfunction Plan?

You must modify your current SS&M Plan in the following situations:

- To reflect changes to your MACT operations or SS&M procedures since your prepared the last SS&M Plan (§63.6(e)(viii)); and
- If your current SS&M Plan:
 - Does not include instructions for a SS&M that has occurred (§63.6(e)(3)(vii)(A));
 - Does not include instructions for what you will do during a SS&M that are safe procedures and are good air pollution control practices that minimize emissions to the greatest extent (§63.6(e)(3)(vii)(B));
 - Does not include enough instructions for correcting/repairing the malfunctioning process, air pollution control, or monitoring equipment as quickly as practical (§63.6(e)(3)(vii)(C)); or

- Includes instructions for anything that is not a SS&M, as defined above (§63.6(e)(3)(vii)(D));

Note: If your current SS&M Plan leaves out or does not include enough instructions to correctly handle any incident that occurs that can be called a malfunction, you must revise your current SS&M Plan within 45 days after the incident. You must add to the revised SS&M Plan what you will do in case this type of incident happens again (§63.6(e)(3)(viii)). Depending on what your SS&M Plan revisions are, the permitting authority and/or EPA may ask to see a copy of your revised SS&M Plan.

If you revise your SS&M Plan, you must report that you have revised your SS&M Plan in your next semiannual SS&M Report for your NESHAP (or your Title V compliance certification). These reports are typically due within 60 days following the end of each 6-month period (§§63.6(e)(viii) and 63.10(d)(5)(i); §70.5(c)(9)), although your permitting authority can approve less frequent reporting in some cases.

If the revisions to your SS&M Plan include changes the scope of activities considered to be SS&M events or otherwise changes how any emission limit, work practice requirement, or other requirement in your NESHAP will apply to you, the revised SS&M Plan is not effective until your permitting authority receives written notice from you describing these SS&M Plan revisions (§63.6(e)(3)(viii)). Until then, continue following your existing approved SS&M Plan.

9. Do I Have to Keep Any Startup, Shutdown, and Malfunction Records?

You are required to keep the following records (including all reports and notifications) for five years (§§63.6(e)(3) and 63.10(b)(2)):

- When and how long each malfunction of your MACT operations, or air pollution control and monitoring equipment happened;
- What you did to correct/repair the malfunctioning equipment;
- Whether you followed your current SS&M Plan;
- What you did, if at all, that was different from what is in your current SS&M Plan; and
- Any other information required by your NESHAP, such as the cause of the malfunctions.

10. Do I Have to Submit Any Startup, Shutdown, and Malfunction Reports?

If you revise your SS&M Plan to reflect changes to your MACT source operation or procedures, you must report that you have revised your SS&M Plan in your next semiannual SS&M Report for your NESHAP (or Title V compliance certification) which is typically due within 60 days following the end of each 6-month period (§§63.6(e)(viii) and 63.10(d)(5)(i); §70.5(c)(9)).

If a SS&M occurs and you correctly followed the procedures in your SS&M Plan, you must submit the following in a letter in your next semiannual SS&M Report, due within 60 days following the end of each 6-month period (§§63.6(e)(iii) and 63.10(d)(5)(i)):

- Your name;
- Your title;
- Certifying signature of the owner/operator or other responsible official;
- Statement that you followed your current SS&M Plan; and
- How many SS&M happened, how long the SS&M were, and a brief description of each SS&M. (Note: This information may take the form of a checklist; see Attachment B).

If what you did during a SS&M was not as written in your SS&M Plan and/or the type of SS&M was not covered by your current SS&M Plan and your source exceeds any of the applicable emission limitations in the relevant standard, you must report exactly what your actions were and/or the type of SS&M that occurred by telephone or facsimile (FAX) transmission within two (2) working days afterwards. Also, you must send a letter within seven (7) working days after the end of the SS&M. The letter should include the following information (§§63.6(e)(3)(iv) and 63.10(d)(5)(ii)):

- Your name;
- Your title;
- Certifying signature of the owner/operator or other responsible official;
- How the recent SS&M happened;
- What you did during the SS&M;
- The reasons you did not follow your current SS&M Plan; and
- Whether any emissions and/or parameters that you monitor were higher or different than their allowable values during the SS&M.

If, as above, what you did during a SS&M was not as written in your current SS&M Plan and/or the type of event was not covered by your current SS&M Plan, you must also revise the SS&M Plan within 45 days after the SS&M so as to describe what you will do in case a similar SS&M happens again. See section 8 of this document for more information on revising your SS&M plan.

You also may have reports to make that are required by your State Implementation Plan (SIP). Check with your local permitting authority to find out about these additional requirements.

ATTACHMENT A – SS&M PLAN CHECKLIST^a

1. Have you described what you will do to operate, in other words, how you will run all your **process equipment** at your MACT sources during **startups and shutdowns** to minimize emissions?
2. Have you included how you will record what you did during a **startup or shutdown** if it was not already in your plan?
3. Have you included what you will do to find and record the circumstances of malfunctions of your **process, air pollution control, and air pollution monitoring** equipment?
4. 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 to minimize emissions, and how you will record these corrections?
5. Have you included how you will obtain any other information required by your NESHAP, such as the cause of the malfunction?

^a This is the least amount of information that you should have in your SS&M Plan. You can include more information so that you and your employees can operate your facility as best as possible during any startup, shutdown, or malfunction. You may also include any or all of the following as additional requirements: (1) the SS&M Plan should be kept in a place where everyone who operates any of your equipment can find it quickly; (2) a manager should sign off any SS&M Plan revisions and be notified of each SS&M; or (3) all employees must be trained in the SS&M procedures.

ATTACHMENT B – SAMPLE SS&M RECORDKEEPING CHECKLIST^b

1. At what piece of equipment or where in the process did the startup, shutdown, or malfunction occur?
 2. What was the date and time of the startup and how long did it last?
 3. What was the date and time of the shutdown and how long did it last?
 4. What was the date and time of the malfunction and how long did it last?
 5. What did you do to correct the malfunctioning equipment?
 6. Is what you did during the startup, shutdown, or malfunction exactly as you describe in your SS&M Plan?
 7. If you did anything that was not in your current SS&M Plan, what did you do?
 8. Did you include all other information required by your NESHAP, such as the cause of the malfunctions?
- .

^b This is the least amount of information that you should write down during any startup, shutdown, and malfunctions. You can include more information so that you can describe as best as possible what happened during any startup, shutdown, or malfunction.