



Environmental Management Systems

Reevaluation and Modification

March 22, 2022

SOLID WASTE Environmental Management System

Committed to Continuous Improvement



Reevaluation and Modification

...It's an opportunity to realize the organization's commitment to continuous improvement and should not be looked upon negatively.



Reevaluation and Modification-

2 Primary Components

- ① Follow up to Audits
 - Review and respond to findings
 - Build on strengths (i.e., commendables)
 - Identify corrective actions (i.e., for nonconformances)
- ① Solicit Feedback from Senior Management
 - Conduct Management Review
 - Implement recommendations

Reevaluation and Modification

#1– Follow up to Audits

Follow up to Audits

- ◎ The Reevaluation of the EMS is conducted to address the findings from the Audit identified in the final report.
 - Identification of Which Element of the EMS Meets, Partially Meets, Failed to Meet, or Exceeded Expectations (Results of the EMS Audit)
- ◎ EMR Responsibilities
 - Identify the Root Cause of Each “Not Met”
 - Implement Corrective Action to Prevent Reoccurrence

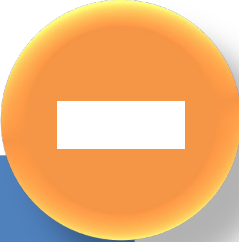
NOTE: Information of Root Cause and Corrective Action provided so the Auditor understands how the EMR will use the Audit for continual improvement



“To address this mistake we must use root-cause analysis. I’ll begin by saying it’s not my fault.”

Root Cause Analysis

- ⦿ The Reevaluation Process Should Not Take a “Find and Fix” Approach



Finding	Corrective Action
55 Gallon Drum was Missing a Label	Place a Label on the Drum

Root Cause Analysis



Finding	Root Cause	Corrective Action
55 Gallon Drum Was Missing a Label	The Shop Ran Out of Labels Because the Contract on the Price Agreement Expired.	Purchase Labels with Purchase Card. Notify Purchasing of the Importance of the Contract and the Resulting Compliance Problem. Train Staff on the Importance of Labeling and Notification to Management if Price Agreements Expire.

Root Cause Analysis/Corrective Action

- ① Usually Conducted by the EMR and/or Facility Manager
 - Five Why's is a Popular Tool for Identification of the Root Cause in an EMS
- ① Receive Input on the Root Cause from Staff Knowledgeable About the Finding
- ① Corrective Action Should be Identified Immediately Following the Root Cause
 - Assign Responsibilities and Due Dates
 - Follow Up!



Recording and Tracking

- CPAR (Corrective/Preventative Action Request/Work Order) Form
- Some participants use software to assist with tracking non-conformances.

ID # _____		
Corrective/Preventive Action Request/Work Order		
<input type="checkbox"/> Immediate Action	<input type="checkbox"/> Hold for Meeting	
Select One: Work Order <input type="checkbox"/> CPAR <input type="checkbox"/>		
Refer to: Audit Finding/Comment <input type="checkbox"/> Other <input type="checkbox"/>		
Prepared by: _____	Date: _____	
Describe Problem: _____	Possible Solutions: _____	
What is the suspected cause? _____		
How was it discovered?: _____		
By whom? _____	Date of Discovery: _____	
ACTION TAKEN		
What is the root cause? (more room on back) _____	Date started: _____	Date completed: _____
	Type: <input type="checkbox"/> Air <input type="checkbox"/> Leachate <input type="checkbox"/> Groundwater <input type="checkbox"/> Cons. Practice <input type="checkbox"/> Maintenance <input type="checkbox"/> Other	Priority: <input type="checkbox"/> Urgent <input type="checkbox"/> Routine <input type="checkbox"/> Deferred
How was the problem resolved? _____	Attach map, reference points, coordinates, description on location. Significant Aspect: _____	
Who performed the work?: _____	Iowa EMS: <input type="checkbox"/> EMS Element # _____ <input type="checkbox"/> Education <input type="checkbox"/> GHG <input type="checkbox"/> HHW <input type="checkbox"/> Recycling <input type="checkbox"/> Water Quality <input type="checkbox"/> Yard Waste <input type="checkbox"/> Other <input type="checkbox"/> Health/Safety	
Future action necessary to prevent recurrence: _____		
Benefit of compliance:/Consequence of non-compliance: _____		
Print Name and Initial: _____	Close Date: _____	

Return this form to _____



Environmental Management System How to Conduct a Root Cause Analysis

What is a Root Cause Analysis?

Root cause analysis is the process of finding and correcting an underlying problem. Organizations use root cause analysis in investigating Environmental Management System (EMS) non-conformances, typically at the direction of the Environmental Management Representative (EMR). Root cause analysis will primarily be performed by supervisory staff or the EMR. The EMS Core Team will review selected root cause analyses and monitor systemic issues identified. The three basic steps of root cause analysis are: (1) Define, (2) Analyze, and (3) Prevent.

Step 1: Define

Investigate to gather data to better understand the issue. Relevant sources of information could be audit results, on-site observations, or staff interviews. When conducting the investigation, be collaborative and non-accusatory. The purpose of root cause analysis is to identify and prevent the underlying cause, not to assign blame. When gathering data, consider the situation from various perspectives and investigate multiple paths, such as:

- The conditions of staff when the incident occurred,
- Any vendor involvement,
- The mechanical systems and physical environment,
- The environmental legal obligations,
- Existing policies and procedures, and
- Other applicable factors.

Example Investigation Questions

- What were the conditions?
- What proof exists?
- When did the problem start/end?
- What is the impact?

Root Cause Analysis

Step 1— Define

Example Investigation Questions

- ⦿ What were the conditions?
- ⦿ What proof exists?
- ⦿ When did the problem start/end?
- ⦿ What is the impact?

Step 2: Analyze

Evaluate the available data to determine the root cause(s). The “Five Whys” tool is one good method. Start by asking, “Why did this situation occur?” Then ask “why?” to that answer. Continue to probe into the matter by asking “why?” up to 5 times to get past the superficial, immediate causes. Although this sounds like a simplistic approach, solutions to a complex problem can be unveiled by not simply accepting the first obvious answer. Notes: (1) You may not always need all 5 “whys” to reach the root cause and (2) the last answer may not always be the root cause.

Consider an example non-conformance where a drum containing hazardous waste is not labeled.

1st Why: Why was the drum not labeled?

Answer: We ran out of the labels.

2nd Why: Why did we run out of labels?

Answer: The employee who used the last label didn't inform the inventory manager because he didn't know the regulatory requirements.

3rd Why: Why didn't the employee know the regulatory requirements?

Answer: He wasn't trained on the waste handling work instructions.

4th Why: Why wasn't training provided on the work instructions?

Answer: The employee was on vacation when the manager provided training on work instructions.

5th Why: Why didn't the employee get trained when he got back from vacation?

Answer: Poor tracking of employee training.

If the analysis had stopped at the first why, the immediate problem of getting a label for the drum may get fixed, but the systemic problem in the training program may not have been uncovered.

Example Root Causes

- Human factors (training, supervision, distraction, etc.)
- Design defect
- Equipment defect
- Records/Documentation
- Purchasing practice
- Permit incomplete
- Maintenance failure
- SOP deviation
- Lack of SOP



Root Cause Analysis

Step 2— Analyze

Example Root Causes

- ⦿ Human factors (training, supervision, distraction, etc.)
- ⦿ Design defect
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- ⦿ SOP deviation
- ⦿ Lack of SOP



Root Cause Analysis

Step 2— Analyze -- EXAMPLE

- ① **1st Why:** Why was the drum not labeled?
 - **Answer:** We ran out of the labels.
- ② **2nd Why:** Why did we run out of labels?
 - **Answer:** The employee who used the last label didn't inform the inventory manager because he didn't know the regulatory requirements.
- ③ **3rd Why:** Why didn't the employee know the regulatory requirements?
 - **Answer:** He wasn't trained on the waste handling work instructions.
- ④ **4th Why:** Why wasn't training provided on the work instructions?
 - **Answer:** The employee was on vacation when the manager provided training on work instructions.
- ⑤ **5th Why:** Why didn't the employee get trained when he got back from vacation?
 - **Answer:** Poor tracking of employee training.

Step 3: Prevent

Determine both long- and short-term corrective/preventive actions to reduce the likelihood of a future occurrence. This is part of the EMS continuous improvement cycle. Provide a detailed description of the



actions needed to correct and prevent the root cause. There may be several corrective/preventive actions or multiple steps for a single action. In the unlabeled drum example above, immediate corrective action is needed to label the drum and a longer-term preventive action is needed to improve the employee training program.

Seek input from staff at the affected facility or department. Identify potential responsible parties to implement the actions.

The EMR will review the recommendations and notify the appropriate manager for implementation. The EMR will also verify that corrective/preventive actions which are implemented have addressed the non-conformance.

Why Do Root Cause Analysis?

Root Cause Analysis goes beyond the “find and fix” approach by:

- Reducing risk of reoccurrence, which reduces overall costs.
- Addressing the underlying problem, reducing the potential for another, larger impact.
- Providing a longer term solution by treating more than just the “symptoms” of the problem.
- Meeting the Iowa standard for EMS.

If you have questions or suggestions, contact your supervisor or the EMR.

Example Corrective/Preventive Actions

- Clean up spill
- Revise the SPCC/SWPP Plan
- Develop an SOP
- Use a different material
- Change design/construction
- Develop an approval process
- Provide training
- Revise content of training
- Audit more frequently
- Share results with another facility

Root Cause Analysis

Step 3— Prevent

Example Corrective Actions

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Reevaluation and Modification

#2– Management Review

Management Review

◎ Purpose:

- Keep Management Informed on the Progress and Direction of the EMS
- Opportunity to Discuss Environmental Improvements
- Secure Staff and Resource Needs
- Receive Direct Feedback on Environmental Programs
- Receive Direct Feedback on the Future of the EMS



Align the organization's direction/
goals with the EMS

Management Review

- ① Management Team Varies by Organization
 - Waste Agency Board
 - Director or CEO
 - City Council
 - Others– What Works for Your Agency?
- ① Should be Decision Maker(s)

Management Review

- ◎ EMR Typically Presents Information
- ◎ Cover the Ten Elements of the Iowa EMS
 - Review the Policy for Adequacy
 - Review Changes to Significant Impacts
 - Discuss Objectives, Targets, and Action Plans to Reduce Impacts
 - Discuss Monitoring and Measurement including Metrics
 - Discuss Key Resources and Whether There are Additional Needs for the EMS
 - Discuss Communication Techniques and Responses
 - Discuss EMS Assessment Process and Results



Management Review Best Practices



- ⦿ Schedule Management Review At Least Annually
- ⦿ Conduct Management Review During a Regularly Scheduled Review Meeting
 - Otherwise Attendance May be Poor
 - Integrate with Organization's Schedule
- ⦿ Provide Metrics Data
- ⦿ Discuss Positive EMS Results as Well as Negative
- ⦿ Obtain Input on EMS Goals for the Next Year
- ⦿ Document Management Review Results in a Memo

Questions?

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