

ROOT CAUSE ANALYSIS PROCEDURE-July 2012

1.0 PURPOSE

To establish the procedure for a structured approach to conducting a root cause analysis for environmental findings. The goals of the procedure are to identify (1) the underlying factors of identified problems, (2) what needs to be changed to prevent the recurrence of these outcomes, and (3) the techniques required to promote the achievement of fewer consequences in the future.

2.0 PROCESS

2.1 Responsibility and Authority

The Environment, Safety, and Occupational Health (ESOH) Management Representative (EMR) has the primary responsibility and authority to monitor the ESOH Management System (ESOHMS) and is authorized to take necessary actions to resolve identified nonconformance issues and assist the depot manager. The primary responsibilities of depot managers and action officers are defined in IGD 1006 and include investigating findings, implementing corrective and preventive actions, and maintaining documentation.

Per IGD1015, the EMR receives the audit and other reports and completes the Corrective Action Summary Report (CASR).

2.2 Assessing and Documenting Root Causes

Once a nonconformance has been identified, the root cause process may be initiated as described below:

- 1) When the EMR adds findings to the Corrective Action Summary Report [CASR] per IGD 1015, the EMR should assess whether or not a root cause analysis is warranted. Depending on their severity or complexity, findings and/or nonconformances that do not have a quick resolution may be evaluated for the underlying root cause. The majority of findings will not need a root cause analysis. The EMR will document whether or not the root cause analysis is to be done in the CASR.
- 2) If a root cause analysis is not needed, the remainder of IGD 1015 should be implemented.
- 3) If a root cause is needed, these additional steps should be taken prior to completing the actions outlined in IGD1015:
 - a. The EMR and cognizant supervisor (Division Chief or Director) will jointly identify an Action Officer.
 - b. The Action Officer will conduct the analysis and complete the attached Root Cause Form..
 - i. The form is based on the "Five Whys" technique. The "Five Whys" is a quick and easy analysis method to identify the root cause of a problem or variation.
 - ii. This technique involves asking "why" up to five times to determine the root cause:
 1. Ask "why" the problem happens and write the answer down below the problem
 2. Ask "why" the previous answer happened and write that answer down
 3. Continue asking "why" for the previous answer until the problem's root cause is identified (may take fewer or more times than five whys)
 4. This technique is also applied to the review of equipment malfunction or failures that may also cause or contribute to compliance complications with ESOH provisions. Typical root cause results are as follows:

"Five Whys" Example

- (1) Why did you have a noncompliance? Because the sample was not taken.
- (2) Why wasn't the sample taken? Because the designated person was out sick.
- (3) Why didn't someone else take the sample? Because no one else knew how.
- (4) Why didn't someone else know how?

Root Cause: Because the procedure did not designate a backup

Equipment failure
Maintenance
Operation related
Power failure

System shutdown
System startup
System upset
Third-party damage
Under investigation
Weather related
Improper training
Inadequate procedure

- iii. The Action Officer should document this process in Columns A-E of the Root Cause Form.
 - iv. If the Action Officer feels that the root cause can be determined with fewer than five questions, skip to the last column which includes a drop down list of root causes. Additional root causes can be added to the drop down menu as determined by the Action Officer on the Root Cause List worksheet.
- c. If there is a likelihood that the adverse finding may recur, the Action Officer shall recommend a preventive action where indicated on the form, otherwise mark "N/A".
 - d. Once the Action Officer has completed the Root Cause Form it shall be forwarded to the EMR for approval.
 - i. The EMR shall determine whether or not the analysis is appropriate and if the corrective action in the CASR addresses the root cause.
 - e. To approve the Root Cause Analysis, the EMR signs the form, updates the CASR to indicate that the analysis has been completed and attaches the Form to the CASR.

Root Cause Analysis Form - Five Why's Technique

Audit Date: _____

Location: _____

Action Officer: _____

CAR # : _____

Finding Description: _____

A. Why did the Finding Occur?	B. Why did Column A Occur?	C. Why did Column B Occur?	D. Why did Column C Occur?	E. Why did Column D Occur?	Root Cause (Drop Down List)
<i>There was only one qualifying EX rain event.</i>	<i>The normal sampler was out the day it rained.</i>	<i>No one else knew how to take sample</i>	<i>No one else had been trained on the procedure</i>	<i>No back up sampler had been assigned</i>	<i>Inadequately Defined Roles and Responsibilities</i>
Future Preventive Action?					

Action officer (signature): _____ Date: _____

Environmental Staff Officer (signature): _____ Date: _____