



Environmental Management System

Module 7

Monitoring, Measurement &

Corrective Actions



Module Objectives

- What is Measurement?
- Direct and Indirect Measurement
- Actions to Support Measurement
- What is Monitoring?
- What is EMS Compliance?
- EMS non-conformance

Module 7 Objectives

- ISO 14001 Requirements
- EMS Frame Requirements
- What are is corrective and preventive actions?
- Preventive Action Planning
- Types of Maintenance
- Module Summary

What is Measurement?

- Measurement is a method for estimating, testing, or otherwise evaluating key parameters and characteristics of EMS activities to determine conformance with a specific standard and/or other performance requirements.
- Measuring helps to determine whether or not a specific process is operating within specific parameters and, if not, where changes need to be made in the process.



What is Direct Measurement?

Direct measurement is a process of obtaining the measurement of some entity by reading a measuring tool, such as a ruler for length, a scale for weight, or a protractor.



What is Indirect Measurement?

Indirect measurement is a technique that uses proportions to find a measurement when direct measurement is not possible:

- Filling out of forms during the process indicating tasks were performed correctly
- Periodic observations of tasks to ensure that it is being properly conducted
- Periodic interviews with personnel to ensure that they are aware of requirements



Actions to Support Measurement

- Identify performance indicators
- Establish schedules for monitoring
- Establish record-keeping requirements
- Document measurement procedures



What is Monitoring?

Monitoring is collecting information that will help you answer questions about your EMS. It is important that this information is collected in a planned, organized and routine way.

Monitoring can help to answer questions such as:

- How well are we doing?
- Are we doing the right things?
- What difference are we making?
- Possible changes that may be needed



What is EMS Compliance?

- An organization must periodically evaluate its compliance with the legal and other requirements applicable to its environmental aspects to ensure the commitment to compliance articulated in its environmental policy statement.
- It must also conduct periodic conformance audits of its EMS to ensure that the system is structured and functioning in accordance with the ISO 14001 standard.

EMS non-conformance

- An EMS system non-conformance is a situation where the EMS is not doing what it should be doing (may or may not be reflected in performance)
- A system may have regulatory non-compliances but no EMS non-conformances, and vice versa.



ISO 14001 Requirements

- The organization shall establish and maintain documented procedures to monitor and measure, on a regular basis, the key characteristics of its operations and activities that can have a significant impact on the environment. This shall include the recording of information to track performance, relevant operational controls and conformance with the organizations environmental objectives and targets.

EMS Frame Requirements

- Corrective & Preventive Action defines the responsibility and authority for identifying, handling, and investigating occurrences of non-conformance with EMS requirements. This includes taking action to mitigate significant environmental impacts as well as initiating and completing corrective and preventive action. Any changes in procedures resulting from corrective and preventive actions are implemented and documented.

What are corrective and preventive actions?

Corrective and preventive actions are identified to address a non-conformance to EMS procedures, practices and work instructions. Actions may result from audits, self-assessments and at any time, a non-conformance is observed.

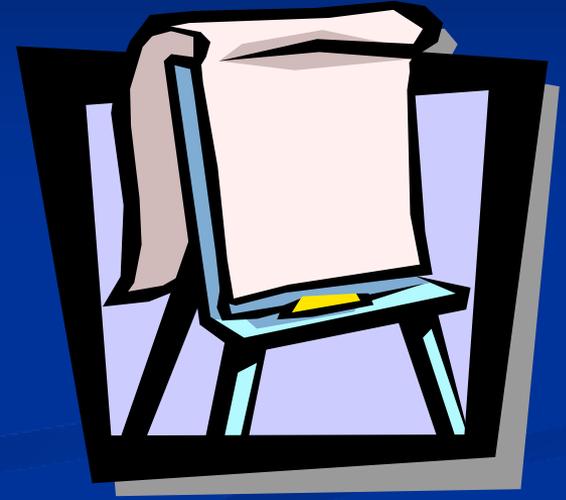
Corrective and Preventive Action Purpose:

- Corrective actions are those immediate actions taken to correct an EMS deficiency.
- Preventive are those long-term actions focused on root cause and the foresight into a possible non-conformance.
- Repetitive corrective actions for the same issue suggest that preventive actions have not been identified and/or are not effective. .



Preventive Action Planning

- ✓ Regularly monitor and measure operations and activities with potential environmental impacts.
- ✓ Record information tracking performance, relevant operational controls and conformance with the organization's objectives and targets.
- ✓ Establish procedures to evaluate compliance with relevant environmental legislation and regulations periodically.



Types of Maintenance



Reactive Maintenance – Done in response to an equipment breakdown, also called “fire fighting”.

Preventive Maintenance – Done at time based intervals, for example maintaining your equipment.

Predictive Maintenance – Done in response to measured equipment condition. “If it’s not broke, don’t fix it”.

Proactive Maintenance – Done in response to Root Cause Failure Analysis.

Module 7 Summary

- Measuring helps to determine whether or not a specific process is operating within specific parameters.
- Direct measurement is a process of obtaining the measurement of some entity by reading a measuring tool, such as a ruler for length, a scale for weight, or a protractor.
- Monitoring is collecting information that will help you answer questions about your EMS. It is important that this information is collected in a planned, organized and routine way.

Module 7 Summary continued

- An organization must periodically evaluate its compliance with the legal and other requirements applicable to its environmental aspects.
- Corrective and preventive actions are identified to address a non-conformance to EMS procedures, practices and work instructions.
- Preventive Action Planning includes monitoring and measuring operations and activities with potential environmental impacts, recording and tracking performance, and establishing procedures to evaluate compliance.
- Preventive Maintenance is done at time based intervals, for example, maintaining your equipment.

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