

# ISO 14000 Awareness A Tutorial



## FOR ISO 14000

This tutorial is designed to acquaint the user with ISO 14000, the ISO 14000 concept and ISO 14000 terminology.

The tutorial is divided into three different sections as follows:

- ◆ **Introduction and background**
- ◆ **The Environmental Management System (EMS)**
- ◆ **Summary**



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# Introduction and Background

## ➤ What is I SO 14000?

ISO 14000 is the generic term for the series of international standards for **environmental management**. The standard for an **environmental management system** (EMS) is I SO 14001.

The I SO 14001 standard was developed in response to increased concern over industry's impact on the environment. Today there are more than 6,000 companies world wide that have adopted the I SO 14001 standard - over 350 of these companies are in the United States.

## ➤ Why is the Army involved with I SO 14001?

The DoD services are conducting pilot studies to determine if DoD should adopt the I SO 14001 standards. The Army has six I SO 14001 pilot sites. Fort Lewis is one of the six Army sites.

At Fort Lewis PW is the implementing organization. PW is not only implementing I SO 14001 but is committed to achieving third party certification. This is the only Army pilot site that has set this goal.

## ➤ Why is I SO 14001 good for PW?

I SO 14001 will improve the current PW environmental program by bringing all aspects under centralized management using a single standard. Benefits are already being realized. In the short time that preparatory internal audits have been conducted several managerial and procedural problems have been identified and corrected.

I SO 14001 certification will mean fewer qualified CA competitors. While it is no guarantee, I SO 14001 does increase the chances of PW winning a CA competition.

# The Environmental Management System (EMS)

This section contains the critical information that all PW employees should know about ISO 14001. Review it carefully and give some thought as to the role you play in the EMS. What objectives and targets do your duties support? How can the performance of your duties best influence the achievement of the objectives and targets?

## ➤ What is the Environmental Management System (EMS)?

The EMS is a five-phase cyclical system based on the "continuous improvement" concept. The PW EMS is detailed in a document called the **Environmental Management Manual (EMS-100)** that can be found on the PW Intranet.

The five phases of the EMS and the 17 elements that comprise the phases are listed below. Each phase and its element(s) will be discussed.

- ◆ **I. Environmental policy**
  - ◆ 1. Environmental policy
- ◆ **II. Planning**
  - ◆ 2. Environmental aspects
  - ◆ 3. Legal and other requirements
  - ◆ 4. Objectives and targets
  - ◆ 5. Environmental management program
- ◆ **III. Implementation and operation**
  - ◆ 6. Structure and responsibility
  - ◆ 7. Training, awareness and competence
  - ◆ 8. Communication
  - ◆ 9. Environmental management system documentation
  - ◆ 10. Document control
  - ◆ 11. Operational control
  - ◆ 12. Emergency preparedness and response
- ◆ **IV. Checking and corrective action**
  - ◆ 13. Monitoring and measurement
  - ◆ 14. Nonconformance and corrective and preventive action
  - ◆ 15. Records
  - ◆ 16. Environmental management system audit
- ◆ **V. Managerial review**
  - ◆ 17. Management review

## Phase I - Environmental Policy

**Environmental policy defines the environmental direction to which management has fully committed and has provided resources.**

### Element 1 - Environmental policy

PW is committed to the environmental policy for Fort Lewis which is contained in the in the **Environmental Policy Letter** signed by the **Garrison Commander**. This policy letter provides the basis upon which PW sets its objectives and targets. The letter can be found on the PW Intranet.

The major points of the policy letter are:

- ◆ Fort Lewis will comply with all applicable environmental policy, laws and regulations
- ◆ Identify potential sources of pollution and meet or exceed Army goals for prevention of pollution
- ◆ Assess the effect of environmental activities, products and services
- ◆ Set objectives and targets to minimize adverse environmental impacts
- ◆ Actively pursue continual improvement in the Fort Lewis EMS

**PW is committed** to meet the ISO 14001 standard and achieve third party certification.

## Phase II - Planning

**Planning is the critical examination of PW's activities in concert with legal and other requirements to develop programs to reduce and eliminate the environmental impact of those activities.**

### Element 2 - Environmental aspects

An **environmental aspect** is defined as those activities of PW that can impact the environment. These can be thought of as the *cause* and *effect* of the planning process.

Do you work at a facility or perform an activity that has an environmental aspect? Do you know what they are? If not, ask your supervisor.

➤ What are some significant PW environmental aspects?

- ◆ Stack emissions from manned and unmanned external combustion sources
- ◆ Air emissions from woodworking shop operations
- ◆ Discharge from wastewater plant operations

 Element 3 - Legal and other requirements

PW must identify and comply with all applicable Federal, state and local environmental laws and regulations. Additionally, PW may subscribe to selected industry codes of practice such as ISO 14001. These can be thought of as the *considerations* in the planning process.

 Element 4 - Objectives and targets

An **environmental objective** is defined as a goal set within PW to achieve an aspect of the environmental policy. Objectives may be thought of as *solutions*. An objective in PW may be a reduction in the amount of sulfur released in emissions from the boiler plants.

An **environmental target** is defined as a PW quantified performance requirement that is set and must be met to achieve the established objectives.

Do your duties support any PW objectives and targets? If you don't know, ask your supervisor. If you do support one or more objectives and targets, do you know specifically what they are?

➤ What are the PW objectives?

- ◆ Ensure compliance and conformance with all applicable Federal, state and local environmental laws and regulations
- ◆ Raise environmental performance to a rating of C-2 in all 17 EMS elements
- ◆ Reduce the total release of pollutants to the air from all PW operation
- ◆ Reduce the number and quantity of material released to the environment as a result of accidental spills and discharges
- ◆ Reduce or eliminate the loss of historically significant buildings and vegetation as a result of PW operations
- ◆ Reduce the consumption of resources by PW operations

 Element 5 - Environmental management program

The final element of the planning process is the management program. Within PW action is taken to identify the aspects (*cause*) and impacts (*effects*), review the regulatory

requirements (*considerations*), determine our objectives (*solutions*) and develop targets (*actions*) to achieve the objectives. To make this work PW has a management program that designates responsibilities for specific objectives and targets and sets a schedule for achieving the objectives and targets.

➤ How do you summarize the planning process?

The environmental aspects and impacts of PW activities are examined considering all legal and other requirements. Objectives and targets are then established and set which will enable PW to implement and meet the garrison environmental policy.

## Phase III - Implementation and operation

**Implementation and operation is the daily PW supervision, direction and execution that are necessary to maintain a functional EMS.**

 Element 6 - Structure and responsibilities

The **PW EMS organization** is the same as the functional organization with continuous oversight of the EMS provided by the **Chief, ENRD** assisted by the **EMS Management Representative**.

**Environmental program managers** develop an Annual Work Plan for achieving targets specified by the objectives and implement the approved Work Plan. As necessary they advise the Chief, ENRD of any significant changes or events that impact the PW objectives and targets.

**Division Chiefs** develop objectives and targets within their division that support the PW objectives and targets.

Daily management of the EMS is the responsibility of the **EMS Management Representative**. This representative, appointed by the Director PW, has full authority to take those actions required to operate and manage the EMS.

Do you know the EMS organization and responsibilities in your section or division?

 Element 7 - Training, awareness and competence

Personnel within PW (including contractors) whose duties may create a significant impact on the environment must be **competent to perform their duties on the basis of appropriate education, training or experience**.

- What must all PW employees and contractors at each relevant function and level be aware of?
  - ◆ The importance of the EMS and the importance of conformance with environmental policy and procedures
  - ◆ The significant environmental impacts, actual or potential, of their work activities and the environmental benefits of improved personnel performance
  - ◆ Their roles and responsibilities in achieving conformance with the EMS, including emergency preparedness and response requirements
  - ◆ The potential consequences of departing from specified operating procedures

#### Element 8 - Communication

Within PW there are open lines of communication regarding EMS. This means that every employee who is aware of a potential or actual significant environmental impact due to an activity or activities in their area have the responsibility to communicate this through their normal chain of command or directly to the responsible individual in the EMS.

All communications from external PW sources regarding the EMS will be directed to the Chief, ENRD for documenting and response.

Are there established lines of communication in your work area? What are they?

#### Element 9 - Environmental management system documentation

There are four levels or tiers of documentation in the PW EMS.

- What are the four tiers of documentation in PW?
  - ◆ **Tier I** - The PW **Environmental Management Manual (EMM)**
  - ◆ **Tier II** - The PW procedures that elaborate on specific areas of the **EMM**
  - ◆ **Tier III** - Division level work procedures or standard operating procedures (SOPs)
  - ◆ **Tier IV** - Records such as calibration records and training records

Do you know where in your division EMS documents are maintained?

## Element 10 - Document Control

Document control in PW requires all documents to be current, up to date and available to those that need them.

### ➤ What are the document control measures in PW?

- ◆ The original and current version of all **Tier I and Tier II documents** are on the PW Intranet.
- ◆ Each division maintains **Tier III documents** at the location or locations that are readily accessible to those whose duties require their use.
- ◆ Each division maintains **Tier IV** documents where they are easily accessible by auditors and other interested parties.

Does your section or division have the most current EMS documents on hand? Do you have access to them? If you operate a piece of equipment that has an operator's manual, where is the manual maintained? Is it quickly available to you?

## Element 11 - Operational Control

To help ensure the accomplishment of PW objectives and targets there are documented contingency procedures for those occasions when allocated resources to accomplish the objectives and targets are unavailable.

If a critical piece of equipment supporting your objective and target fails what do you do? Is there a contingency plan in place? Has it ever been exercised?

## Element 12 - Emergency preparedness and response

PW has established procedures to identify potential and to respond to actual accidents and emergency situations and for preventing and mitigating the associated environmental impacts.

Is there an emergency response plan in your area? When was the last time it was activated? Is it up to date?

### ➤ How do you summarize implementation and operation?

Implementation and operation can be thought of as the glue or control that keeps the various elements of the EMS organized and functioning and working toward a common objective.

## Phase IV - Checking and Corrective Action

**Checking and corrective action is the heart of the "continuous improvement" aspect of the EMS. Supervisors, workers and auditors check for conformance with the ISO 14001 policy and the PW targets and objectives. Appropriate feedback is provided and corrective action taken.**

### Element 13 - Monitoring and measurement

Monitoring and measurement is the establishment and maintenance of documented procedures to monitor on a regular basis key characteristics of PW operations and activities that can have a significant impact on the environment.

- What are some of the key elements monitored and maintained by PW?
  - ◆ Performance records (*e.g.* air emissions analysis records)
  - ◆ Equipment calibration records
  - ◆ Training records

### Element 14 - Nonconformance and corrective preventive action

These are the established procedures for investigating and correcting nonconformance in PW activities. These procedures provide for

- ◆ Identifying the cause of the nonconformance
- ◆ Identifying and implementing the appropriate corrective action
- ◆ Implementing controls necessary to avoid repetition of the nonconformance
- ◆ Updating written procedures affected by the corrective action

Have you observed nonconformance? Did you report it? What action was taken?

### Element 15 - Records

Records are those documents established by PW EMS procedures that identify and provide instructions for the maintenance and disposition of environmental records.

- What are the main requirements for PW EMS records?
  - ◆ Legible, identifiable and traceable
  - ◆ Readily retrievable
  - ◆ Protected against loss and damage
  - ◆ Established and recorded retention time

➤ What do PW environmental records include?

- ◆ Training records
- ◆ Inspection, maintenance and calibration records
- ◆ Information on emergency response
- ◆ Audit results
- ◆ Management review

Do you know where the training records are maintained in your section or division?

 Element 16 - Environmental management system audit

In order to determine PW's conformance to the I SO 14001 standard periodic audits are conducted.

Two types of audits are used. **Internal audits** conducted by PW employees provide a means of self-evaluation and contribute to continuous improvement through corrective actions. **External audits** evaluate PW for I SO 14001 certification.

All audits focus on the relative environmental importance of each activity and the results of previous audits.

When was the last time your activity was audited? Where you asked any questions? Do you remember what they were?

➤ How do you summarize checking and corrective action?

Checking and corrective action is the key aspect of the EMS that provides for continuous improvement by providing for regular oversight of operations and the implementation of needed corrective action.

## Phase V - Management Review

**Management review is the periodic review of the EMS by senior management to ensure continuing suitability, adequacy and effectiveness.**

### Element 17 - Management review

Periodically the senior management of PW reviews the EMS to ensure its continuing suitability, adequacy and effectiveness. The review also address the possible need for changes to policy and objectives in the light of changing circumstances.

- What are some of the topics included in PW management reviews?
  - ◆ Results of audits
  - ◆ The extent to which objectives and targets have been met
  - ◆ Concerns of relevant interested parties

## ISO 14001

