U.S. ARMY

Environmental Management System Implementers Guide

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ACKNOWLEDGMENTS

Contents

References

Appendix A. Acronyms

Figures

Tables

Chapter 1
Introduction

PURPOSE

This guide provides Army personnel an easy-to-use, step-by-step tool for implementing the Army's environmental management system (EMS). It offers **guidance** for meeting Army and Department of Defense (DoD) requirements but allows installations the **flexibility** to address different missions and operational readiness requirements. We encourage readers to examine other EMS guidance sources and use the methods appropriate and effective in their specific situations.

WHAT IS AN EMS?

An EMS is the part of an organization's overall management system that integrates environmental concerns and issues in its management processes. An EMS addresses organizational structure, planning activities, responsibilities, practices, procedures, processes, and resources for developing, implementing, achieving, reviewing, and maintaining environmental policy. It enables an organization of any size or type to control the impact of its activities, products, or services on the natural environment, allowing it not only to comply with current environmental requirements, but to recognize and proactively manage future issues that might impact mission sustainability. Implementing an EMS generally does not require installations to create an entirely new system. Many of the required elements of an EMS are already in place as part of existing programs.

Mission Focus

Each installation's EMS must focus on supporting and sustaining the installation's mission. This guide shows how to identify and incorporate mission priorities in EMS implementation. The resulting management system helps organizations identify, manage, and mitigate the environmental impacts associated with mission-related activities.

EMS and Sustainability

A **sustainable** installation is able to fully execute its present missions without compromising either its ability to accomplish future missions or the ability of its neighboring communities to realize their aspirations.

Sustaining the mission considers its links to the natural and built environments within which soldiers and civilians live, work, play, and train.

The traditional belief was that effective environmental management involved the implementation of programs to meet regulatory requirements and help an organization avoid negative consequences. The new philosophy is that effective environmental management uses the EMS to support mission accomplishment and sustainability while integrating environmental goals throughout the entire Army culture. The EMS is an ongoing and systematic process of establishing priorities, managing and reducing environmental impacts, continually improving, and ultimately increasing readiness through sustainable programs. The EMS approach to environmental protection is the collective responsibility of every employee on the installation. Like the responsibility for safety, it should be a part of the daily workforce routine. This broad culture change—over time and through active, consistent leadership commitment—will eventually allow the Army to make systematic management of environmental activities a tool for mission accomplishment and foster an Army-wide ethic of sustainability. Click here to access the Army sustainability web page.

Army Strategy for the Environment

In October 2004, the Army published *The Army Strategy for the Environment: Sustain the Mission—Secure the Future.* The strategy establishes a long-range vision, founded on sustainability, that enables the Army to accomplish its mission today and into the future. The Army plans to integrate sustainability into all its activities by using EMSs as the framework for improving performance and compliance. Click here to view *The Army Strategy for the Environment.*
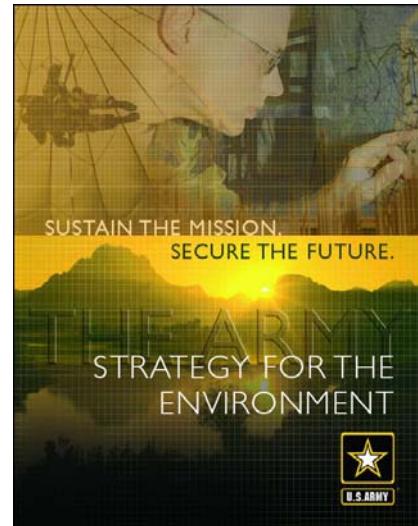
ISO 14001

Army leadership has decided to use the ISO 14001 standard as a model for developing and implementing an EMS at each installation.[1] The ISO 14001 standard provides EMS specifications that apply to a wide variety of organizations. The second edition of the standard was published in 2004

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[1] International Organization for Standardization, ISO 14001, *Environmental Management Systems—Requirements with Guidance for Use*, ISO 14001:2004(E), November 2004.

and replaces the first edition, which was published in 1996. [Click here](#) to view the ISO 14001 standard. This implementation guide is specifically designed to enable Army installations to develop a mission-focused EMS that conforms to the ISO 14001 standard.

Figure 1-1 shows the ISO 14001 model, which employs a continual cycle of policy, planning, implementation and operation, checking and corrective actions, and management review. The ultimate goal is to continually improve environmental performance as the cycle is repeated.

Figure 1-1. ISO 14001 Model with Mission Focus

IMPLEMENTATION REQUIREMENTS

Executive Order (EO) 13148 directs all federal agencies as follows:

> By December 31, 2005, each agency shall implement an [EMS] at all appropriate agency facilities based on facility size, complexity, and the environmental aspects of facility operations. The facility [EMS] shall include measurable environmental goals, objectives, and targets that are reviewed and updated annually. Once established, [EMS] performance measures shall be incorporated in agency facility audit protocols.[2]

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[2] Executive Order 13148, "Greening the Government Through Leadership in Environmental Management," April 21, 2000.

ARMY POLICY

General

The Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health), DASA(ESOH), signed an action memorandum on EMS, which directs installations to meet the following requirements:

- Implementation shall be initiated NLT [no later than] FY04, with an environmental management system in place NLT 31 December 2005.

- Adopt the internationally recognized management system standard, ISO 14001, as a goal.

- Full conformance with the ISO 14001 standard shall be completed NLT FY09.[3]

The action memorandum also states the following:

- "Third party registration to the standard is not required. However, installation commanders may pursue registration when it provides clear and documented mission benefits."

- "Implementation of the standard will be incremental. It will be consistent with available funds and the requirements of Executive Order 13148, 'Greening the Government through Leadership in Environmental Management.'"[4]

The Army's EMS policy directs a phased approach to satisfying EO 13148 and EMS implementation:

- First, comply with EO 13148 by meeting the Army and DoD implementation metrics by December 31, 2005 (see below).

- Then, use continual improvement to build the remaining parts of a mission-focused, ISO 14001–conformant EMS by September 2009.[5]

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[3] Memorandum for the Assistant Chief of Staff for Installation Management (ACSIM), from Raymond J. Fatz, DASA(ESOH), Subject, *Army Environmental Management System*, July 13, 2001, http://aec.army.mil/usaec/support/ems-requirements080601.pdf.

[4] See Note 3.

[5] Installations validate the achievement of these milestones through the self-declaration process (Step 29).

Developing and implementing an EMS is required at all *appropriate* Army installations, including those located in the Continental United States (CONUS) and Outside Continental United States (OCONUS), as well as all Army Reserve and Army National Guard (ARNG) installations. Click here for the Army appropriate facilities list. At this time the Army has not revised its appropriate facilities list to account for BRAC 2005. Installations on the BRAC list should continue implementing an EMS until notified differently. As indicated previously, no boilerplate EMS applies to all Army installations. Although the ISO 14001 standard can be applied to many different types of organizations, differences in organization and mission dictate that EMSs should be tailored to individual installations. Installation staffs must individually determine the best way to design or adapt their own management procedures to conform to the ISO 14001 standard.

Garrison Commander Responsibility

The garrison commander (GC), or equivalent, is responsible for implementing an EMS for the installation,[6] with the participation and support of tenant units and other organizations on the installation.

In some cases, one or more mission commanders (commanders of non-garrison units) outrank the GC, but the EMS responsibility remains with the GC through the Installation Management Agency (IMA) chain of command, including special installations. If a higher-ranking mission commander wants to take an active role in the EMS, you should welcome their participation as an "EMS champion" and use their authority and visibility to support the GC and emphasize the importance of the EMS initiative. The Army has prepared a guide to assist commanders in understanding and implementing their installation EMS.[7] Click here to view the Commander's Guide.

Scope of EMS Implementation

One of the first decisions that must be made is where to implement the EMS. The Army has purposefully set out to implement EMSs that focus on the core mission of the installation. Implementing an EMS solely in the department of public works (DPW) or garrison organization cannot achieve this objective. The EMS must consider and involve the entire in-

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[6] The term "commander," as used in this guide, refers to the garrison commander at Active Army and Army Reserve installations. For ARNG organizations, it refers to the adjutant generals or garrison commanders at major training sites. For Army Reserve regional readiness commands (RRCs), it refers to the ARIM commander. For civil works organizations, it refers to the district chief of operations.

[7] Headquarters, Department of the Army (HQDA), *U.S. Army Environmental Management System Commander's Guide*, June 2003.

stallation, addressing its mission, size, multiple organizations, and environmental objectives. With few exceptions, the organizations needing to participate in the EMS are typically encompassed by the "fence line." Once the fenceline is established, the EMS applies only to the activities, products, or services that the organizations within it can control or influence.

In September 2005, the Director, Environmental Programs (DEP), signed a reiteration of the earlier Office of the Assistant Chief of Staff for Installation Management (OACSIM) policy on this subject. Click here to view the policy memo. The following excerpts from the memo define "fence line to fence line":

> The goal of the Army EMS is to actively promote mission readiness by continually improving environmental performance across Army installations, and by focusing our efforts on implementing initiatives that have the greatest potential to enhance Army mission. To that end, EMS must take all activities into account and encompass the entire installation. Handing off EMS implementation to the environmental staff as strictly their responsibility is not an option. EMS must span the entire chain of command in order to be mission focused and effective.

> Army policy is that each installation on the appropriate facility list will implement an installation-wide EMS that is inclusive of all installation missions, sub-installations, facilities, tenants, contractors, activities, products and services. If the installation determines that its environmental responsibilities or liabilities are limited for non-governmental tenants leasing space, they may choose to exempt them from its EMS.

Creating a fence line-to-fence line EMS requires the inclusion of numerous nongarrison organizations, but many of them are active Army units or activities subject to the Army's EMS policy. Further complicating matters, many Army installations have organizations from other DoD components, other federal agencies, or on-site contractors that should be included in the EMS. The GC and cross-functional team (CFT) must understand the various legal and other relationships between the garrison and various tenant organizations and adopt specific and realistic approaches for including them in the EMS. The subsections that follow provide additional guidance on scope.

ACTIVE ARMY TENANTS

Active Army tenants are required to participate in the installation EMS and are primarily responsible for implementing the elements of the EMS related to their activities, products, or services. If they opt to create their own organizational EMS or elements thereof, they should ensure that they

coordinate with installation EMS efforts to minimize duplication and increase efficiency.

ARMY RESERVE AND NATIONAL GUARD TENANTS

Although many Reserve and ARNG units operate from their own installations or lease land not owned by the federal government, some are located on active Army installations, and they must participate in the installation EMS. These organizations may also be required to participate in their parent organization EMS.

The CFT should work with the installation legal office to locate and examine any support agreements between the garrison and tenant units and ensure that EMS responsibilities and relationships are clearly defined. Current agreements that do not address EMS participation and responsibilities should be revised at the next practical opportunity.

INSTALLATIONS THAT SPAN MULTIPLE LOCATIONS

Many ARNG and Reserve installations and some active Army installations have an area of responsibility (AOR) that covers several distinct locations or subinstallations. These "virtual fencelines" should not deter implementing an EMS that includes multiple locations. The adjutant general (TAG) and ARIM manage ARNG or Reserve resources, policies, and procedures across an entire state or region, and the EMS can be just as readily managed across multiple locations. In these cases, the EMS should be defined by the organizational boundaries and include only the activities and operations that the organization directly controls. For instance, planning for future operations (such as construction), day-to-day maintenance, and training actions should be within the scope of the EMS. However, ARNG support to other federal and state authorities for nonmilitary civil actions (such as hurricane or disaster relief) may be left out of the scope because ARNG is not the lead agency and does not control these operations.

OTHER SERVICE AND DoD TENANTS

Other service and DoD organizations are subject to DoD policy and metrics, but they may have internal EMSs that differ somewhat from the garrison's EMS. For example, the tenant EMS could be based on a standard other than ISO 14001 requirements, or, as in the case of the Air Force, the EMS could include the entire environment, occupational health, and safety program. Tenant EMSs are permitted, provided the organization participates in the installation EMS. Support agreements or leases should also be revised to reflect tenant and host EMS participation and responsibilities. Coordination at higher headquarters, such as the regional or major command (MACOM) level, can help gain support from tenant organizations.

OTHER FEDERAL AGENCIES

All appropriate federal agencies are required by EO 13148 to implement an EMS, and those located on Army installations should participate in the installation's EMS. Complete integration of these organizations may take some time, especially if the parent agency has adopted an EMS standard other than ISO 14001. The CFT must locate and examine any leasing or support agreements between the garrison and federal agency tenants and ensure that EMS responsibilities and relationships are clearly defined. The installation legal office can assist in this effort. Current agreements that do not address EMS participation and responsibilities should be revised at the next practical opportunity. If the federal agency is not willing to participate, the installation should raise the issue with their higher headquarters to assist in solving the differences.

CONTRACTORS AND NON-GOVERNMENTAL TENANTS ON-SITE

Army policy is that if the installation determines that its environmental responsibilities or liabilities are limited for non-governmental tenants leasing space, it may choose to exempt them from its EMS. You may need a preliminary aspects analysis to determine liability. Limited liability is generally associated with concessionaire contractors, such as Burger King. However, operating contractors involved in industrial operations, such as government-owned, contractor-operated (GOCO) facilities, are part of the core installation mission, and the installation faces significant environmental risks from the contractor's operations. For these reasons, operating contractors should generally be included in the scope of the EMS.

Inviting contractors to participate in the EMS is important, but some respond to the opportunity faster than others. Larger contractor organizations might already have their own EMS and thus may be eager to participate in the host installation EMS. Contractors unfamiliar with EMSs and their potential benefits may show reluctance to participate. The CFT should work with the legal or contract offices to locate and examine leasing agreements and contracts between the Army and contractor and determine whether EMS responsibilities and relationships are clearly defined. If the contractors are going to be included in the installation EMS and the current agreements do not address EMS participation and responsibilities, they should be revised at the next practical opportunity. EMS participation or conformance must be included in all future contract language.

CONTRACTOR ORGANIZATIONS WORKING ON-SITE (BASED OFF-SITE)

Examples of these companies are housekeeping and landscaping services, which are often very small organizations that do not have any in-house environmental support. CFT members should be ready to help

these organizations identify its environmental issues. The CFT should also evaluate its liabilities concerning these contractors to determine whether any of them can be exempted from its EMS. When a contractor sees a potential cost savings, it will probably be eager to participate. If it suspects that EMS initiatives will increase its costs, it may want to renegotiate its contracts. In any case, the CFT should involve representatives from the legal or contract office to thoroughly understand current contract requirements. If contract modifications or renegotiations are required, the CFT should ensure that the new contract language addresses EMS requirements.

MULTIPLE EMSS AND INTELLIGENT HOSTS/TENANTS

Due to the complex nature of our installations, tenants may be required by their higher headquarters to implement an EMS despite the fact that the host installation must implement an EMS. In these cases, installations and tenants need to work together to identify areas of overlapping responsibilities and develop agreements on how to leverage their respective EMS components to create a fully integrated and functional EMS. This integration of the host and tenant EMS must ensure that both parties are working toward common goals and minimizing duplication of effort. The host installation can leverage work that tenants have done on their aspects and impacts identification to support the installation EMS. The installation needs to communicate its objectives and targets to all tenants to ensure that they are not interfering with the ability of the tenant organizations to accomplish their missions.

Details on how to incorporate tenant EMS efforts into the host installation's EMS must be determined at the installation level. At times, the tenant relies on the installation's EMS procedures and documentation, and vice versa. For example, the tenants are likely to rely on the installation emergency response procedures to avoid duplication of effort and ensure that the emergencies are handled appropriately. Also, the tenant's EMS is likely to adopt the host installation's internal and external communications procedures. Similarly, the installation likely relies on the tenants operational control procedures to control significant aspects from its activities. These types of situations need to be clearly defined in the roles and responsibilities outline in the installation's EMS scope. The bottom line is that the installation and the tenant EMSs should be *interdependent* rather than independent.

Coordinating with, and gaining the cooperation of, various tenant organizations during EMS implementation can be challenging. Leveraging the support from senior mission commanders, organization heads, and existing installation committees—such as the environmental quality control

committee (EQCC),[8] master planning board, or installation board of directors—may help gain support from these tenant organizations. If you have trouble gaining buy-in and participation of tenants on the installation in the EMS, working with higher headquarters can help to facilitate cooperation. Regardless of the final scope determined, the decisions should be documented and retained as a record in accordance with EMS document and record control requirements.

Metrics and Reporting Requirements

Installations must submit data quarterly through the Army Environmental Database—Environmental Quality (AEDB-EQ) on EMS implementation status. The Army tracks EMS implementation in the Strategic Readiness System (SRS). The following Army EMS implementation metrics meet the requirements of EO 13148 and should be completed by the listed dates:

- A policy statement consistent with ISO 14001 and the Army Management Action Memorandum has been developed, signed by the garrison commander (GC), and made available to installation personnel and the public, NLT 30 September 2003.

- An installation-wide Environmental Management System self-assessment has been documented and briefed to the GC, NLT 30 March 2004.

- A written implementation plan with scheduled dates, identified resources timelines and organizational responsibilities for implementing an installation wide, mission focused, ISO 14001 Environmental Management System NLT FY09 has been developed and has been signed by the GC, NLT 30 September 2004.

- A prioritized list of environmental aspects consistent with ISO 14001 and Army EMS policy has been developed for installation-wide activities and briefed to the GC, NLT 30 March 2005.

- Appropriate facilities have established a documented procedure, and followed it to ensure that appropriate installation personnel have received EMS awareness training consistent with Army EMS policy, NLT 30 March 2005.[9]

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[8] We use the abbreviation EQCC throughout this guide to refer to an actual EQCC or any similar senior leader advisory group.

[9] Memorandum from ACSIM, Subject, *Environmental Management System (EMS) Awareness Level Training Metric,* January 18, 2005

- The GC and EQCC (or equivalent) have conducted at least one documented annual review of progress on the EMS implementation plan to assure mission focus and ISO 14001 conformance, NLT 31 December 2005.

- The installation has fully met all Army EMS implementation requirements and self-declared its system 's conformance to the ISO 14001 Standard, NLT 30 September 2009.[10]

Scheduling management reviews

Instructions regarding the EMS management review do not appear until Step 30 of this guide. However, we recommend periodic (annual or semiannual) management reviews *during* the implementation process as well. These reviews help you meet the Army EMS implementation metrics and maintain senior leader oversight of EMS implementation.

These metrics are minimum requirements. Installations should complete them before the scheduled dates if resources allow. Some organizations have reported that moving faster maintains interest and makes implementation easier.

IMPLEMENTATION ROAD MAP

This guide describes 30 EMS implementation steps that lead to a mission-focused, ISO 14001–conformant EMS. Chapter 2 gives the step-by step instructions. Figure 1-2, a visual overview of the 30 steps, shows a suggested implementation sequence. The steps are arranged in a logical order that progressively builds the essential parts of an ISO-conformant EMS.

The sequence in Figure 1-2 differs slightly from those in other EMS guidance documents:

- It contains additional requirements specifically designed for Army installations.

- Certain requirements or elements have been moved forward in the implementation sequence to help installations get an early start in meeting dates associated with Army implementation metrics.

- Requirements associated with communications and documentation procedures have been moved forward in the sequence to help installations manage the implementation process.

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[10] Memorandum from ACSIM, Subject, *Update on Army Environmental Management System (EMS) Milestones and Metrics,* June 13, 2005.

- The implementation sequence is not rigid and can be adapted to accommodate an installation's specific situation. In Figure 1-2, yellow boxes highlight the requirements associated with Army and DoD implementation metrics that must be completed by December 31, 2005.

ROLES AND RESPONSIBILITIES

Chapter 2 recommends specific roles and responsibilities for overseeing and completing the elements shown in Figure 1-2. Senior leaders have a particularly important role in supporting EMS implementation. The commander has overall responsibility for the implementation but delegates authority for executing the process to a designated EMS management representative (EMSMR). The installation EQCC provides installation-wide oversight and support to the EMS implementation effort. Establishing an active EQCC facilitates the senior leader oversight and buy-in vital to EMS.

Figure 1-2. Suggested EMS Implementation Sequence for Army Installations

The elements shown in the blocks provide a logical sequence for planning and implementing and EMS, starting at the left side of the page and following the arrows. You may also choose to revise this sequence to accommodate specific situations at your installation. We recommend you carefully read the entire guide before choosing an alternative sequence.

31 December 2005 Milestone:
At a minimum, the Army metric elements (in yellow) must be completed *and an annual management review performed* before 31 December 2005 in order to satisfy Army Policy and EO 13148 requirements.

Start Here
Commander (CDR) and EMS Management Representative (EMSMR) Initiate EMS Planning (Steps 1 – 8):

- **Step 1: CDR Selects EMSMR**
- **Step 2: CDR/EMSMR Coordinate with EQCC and Select Cross Functional Team (CFT)**
- **Step 3: CFT Receives EMS Training**
- **Step 4: CFT Conduets Self-Assessment**
- **Step 5: CDR/EMSMR Brief the EQCC**
- **Step 6: CFT Prepares EMS Implementation Plan**
- **Step 7: CDR Approves EMS Implementation Plan**
- **Step 8: CDR/EMSMR Hold EMS Kickoff Meeting**

NOTE: The EMSMR leads the CFT.

After all EMS elements are implemented, the system shifts to a "continual improvement" mode, where all EMS elements are periodically reviewed and revised to improve mission focus and environmental performance.

EMSMR and Cross Functional Team (CFT) Implement the EMS:

- **Step 9 Mission Focus**
- **Step 10 Environmental Policy, ISO 14001 Sec 4.2**
- **Step 11 Awareness Training ISO 14001 Sec 4.4.2**
- **Step 12 Documentation ISO 14001 Sec 4.4.4**
- **Step 13 Document Control ISO 14001 Sec 4.4.5**
- **Step 14 Communication ISO 14001 Sec 4.4.3**
- **Step 15 Legal and Other Requirements ISO 14001 Sec 4.3.2 & 4.5.2**
- **Step 16 - 19 Environmental Aspects ISO 14001 Sec 4.3.1**
- **Step 20: Objectives & Targets ISO 14001, Sec 4.3.3**
- **Step 21: Environmental Management Programs, ISO 14001, Sec 4.3.4**
- **Step 22: Resources, Roles, Responsibility & Authority, ISO 14001, Sec 4.4.1**
- **Step 23: Operational Control ISO 14001, Sec 4.4.6**
- **Step 24: Competence Training ISO 14001, Sec 4.4.2**
- **Step 25: Monitoring and Measurement ISO 14001, Sec 4.5.1**
- **Step 26: Records, ISO 14001, Sec 4.5.4**
- **Step 27 Emergency Preparedness and Response ISO 14001 Sec 4.4.7**
- **Step 28 Non-Conformance and Corrective and Preventive Actions, ISO 14001 Sec 4.5.3**
- **Step 29 Periodic Audits ISO 14001, Sec 4.5.2 & 4.5.5**
- **Step 30 Management Review ISO 14001, Sec 4.6**

30 September 2009 Milestone:
Installations must complete all the elements above and have a fully functioning EMS (ISO 14001 complaint).

1-13

CONTINUAL IMPROVEMENT

An EMS must be continually updated to address changes in missions, environmental aspects and impacts, legal and other requirements, roles and responsibilities, and training requirements. Audits and periodic reviews of the EMS procedures and documentation identify areas for improvement. Once implementation is completed, EMS responsibilities continue, but mostly at the operational or functional process level. If the EMS has been properly designed and implemented, most day-to-day EMS activities become part of how the installation conducts its business, as opposed to a special, separate program. Chapter 2 describes key EMS and continual improvement activities.

FREQUENTLY ASKED QUESTIONS

Click here to view frequently asked questions and responses regarding EMS implementation.

Chapter 2
Step-by-Step Guidance

INTRODUCTION

The remainder of this guide leads the user through required actions for EMS implementation by defining terminology, describing recommended actions, identifying those involved, and giving detailed instructions, sample documentation, and links to tools and other materials that help implement the EMS. **The guidance presents only one of numerous approaches to implementing an EMS. You may choose to design your own implementation process or modify the recommendations provided in this guide to fit your situation.**

COMMANDER AND EMS MANAGEMENT REPRESENTATIVE INITIATE EMS PLANNING (STEPS 1–8)

EMS implementation at the installation begins with the commander (CDR), who ensures that several key actions are completed before EMS implementation can actually start. These key actions are as follows:

Step1. CDR selects EMSMR
Step 2. CDR/EMSMR coordinate with EQCC and select CFT
Step 3. CFT receives EMS training
Step 4. CFT conducts self-assessment
Step 5. CDR and EMSMR meet with EQCC
Step 6. CFT prepares EMS implementation plan
Step 7. CDR approves EMS implementation plan
Step 8. CDR/EMSMR hold EMS kickoff meeting

Step 1. Designate the EMSMR.
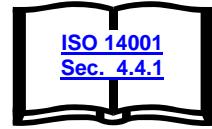
The CDR champions the EMS and works to gain and maintain the full sup-port of key installation stakeholders and other leaders outside the garri-son. The ISO 14001 standard requires top management to appoint a specific management representative (whom we call the EMSMR). The CDR selects an effective leader to serve as the EMSMR and documents the selection. The EMSMR is responsible for managing and overseeing the EMS implementation effort. The quality of the individual assigned to this effort directly reflects the CDR's commitment to the EMS concept and determines its ultimate success. The EMSMR should

- report directly to top management (we recommend reporting to the CDR),

- have the necessary authority to direct other employees,

- have a good understanding of installation organizations,

- be involved with installation strategic planning and real property planning programs, and

- have the project management and facilitation skills needed to suc-ceed in this role.

The EMSMR coordinates the implementation, manages day-to-day opera-tions, and leads and manages the CFT. Specific responsibilities include

- reporting implementation progress to the CDR and top manage-ment,

- planning and managing EMS implementation,

- delegating tasks and establishing deadlines,

- collecting and evaluating work, and

- arranging training, guidance, and assistance.[1]

The CDR should consider background, experience, availability, and other appropriate factors when designating the EMSMR. Consider individuals *outside* the environmental office. The EMS needs installation-wide support to be effective, and designating a nonenvironmental person to

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[1] The Public Entity Environmental Management System Resource (PEER) Center, *How to Implement an EMS*, February 2003, http://www.peercenter.net/howimplement/.

implement the system conveys the message that EMS involves much more than environment. In many cases, members of the CDR's special staff such as members of the program analysis and integration office (PAIO) are prime choices for the EMSMR position. The PAIO staff offers a broad perspective of the installation organizations and activities.

ISO 14001 requires that organizations appoint only a management representative (EMSMR). However, you may elect to establish additional positions (such as EMS champion or EMS coordinator) to assist the EMSMR.

The time commitment associated with the EMSMR position depends on the size and missions of the specific installation. Some installations have reported that EMSMR duties can require up to 80 percent of the EMSMR's work hours during EMS implementation. Because of the significant time commitments and the high visibility of the EMS, the EMSMR's job description and performance plan should reflect the duties and responsibilities of EMS implementation.

Step 2. Coordinate with senior leaders and select the CFT.

EMS implementation requires close coordination with all organizations across the installation, including tenant units and support contractors. The CFT coordinates with these organizations and is responsible for implementing the EMS installation-wide. This step has two objectives: coordinating with senior leaders on the installation to get their buy-in and (in some cases) obtaining a CFT member from their organizations. Under the leadership of the EMSMR, CFT members become the EMS experts and proponents in each functional or core business area. Typical responsibilities of the CFT include

- gathering, organizing, and disseminating information;

- working with existing committees and organizations to get their help in implementing the EMS;

- collecting and evaluating EMS documentation;

- developing or reviewing EMS procedures;

- advising, coordinating, and facilitating EMS implementation;

- representing all functional areas or core business areas of the installation regardless of actual CFT representation; and

- managing the reactions to the changes resulting from EMS implementation.[2]

CFT members should have clear responsibilities for representing and coordinating with specific organizations on the installation. For example, a CFT member from a military unit might serve as the CFT representative for all the military units on the installation.

CFT members should include a representative from the environmental office as well as representatives concerned with key functional areas or core business areas such as operations and training, logistics, acquisition, contracting, and ranges. If your installation employs a large number of support contractors or union members, consider adding representatives from these areas. Also, be sure to consider members of established groups such as the real property planning board, quality management boards, or pollution prevention committees. The CDR and EMSMR should seek volunteers or ask other senior leaders on the installation to recommend employees to serve on the CFT.

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[2] See Note 1.

Although the environmental office may have only one person on the CFT, all environmental staff members work closely with the CFT as expert consultants, advisors on environmental technical issues, or participants in subcommittees.

> Do the following to make the CFT succeed:
>
> - Look to the leaders. You need motivated, organized individuals: let supervisors identify the appropriate candidates.
>
> - Provide in-depth training.
>
> - Clearly communicate member roles and responsibilities.
>
> - Secure time commitments from management.
>
> Source: The PEER Center. *How to Implement an EMS.*

Limit the number of members on the core CFT; you can always establish subcommittees if you want to get more people involved. The CDR and EMSMR should ask the following questions when selecting the team members:

- Are they motivated, interested, and able?

- Are they experts in their own functional areas?

- Are they good communicators?

- Can they give credence to the EMS program?

- Do coworkers trust and respect them?

- Are they responsible for environmental issues?

- Do they represent functional areas that are directly concerned with or potentially affected by environmental issues?

- Are they aware of the installation's most critical environmental issues?

- Are key functions represented?[3]

The CDR and EMSMR should ask the commanders or supervisors of various tenants, activities, and units to approve potential team members, after which the CDR announces the team. Time commitments for CFT duties are highly variable, but some installations have reported that CFT members can expect to spend about 20 percent of their work hours on CFT duties.

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[3] See Note 1.

While preparing to meet with organizational leaders and build the CFT, examine installation support contracts, installation support agreements, memoranda of agreement, and other documents that define support relationships. Eventually, you need to define EMS participation responsibilities in these documents. It's not essential to revise these documents immediately, but make a note of this task for inclusion in your implementation plan.

Step 3. Orient and train the CFT in EMS implementation.

After the EMSMR and CFT members are selected, the EMSMR should hold a CFT orientation meeting before CFT training begins. At this meeting, the EMSMR should do the following:

- Provide members with copies of the EMS implementation guidance and other pertinent information.

- Establish an initial CFT EMS training schedule and set additional research assignments, if needed.

- Establish a schedule for periodic CFT meetings (weekly breakfast, monthly, etc.). The periodic CFT meetings need not be formal, just a venue for reviewing the current implementation status, discussing new initiatives, checking status of research assignments, etc.

- Appoint a member of the CFT as the EMS document coordinator. This person is responsible for ensuring the proper documents are created, stored, and maintained in accordance with procedures established later in the implementation process. This can be a big job, and it will continue to require effort beyond initial EMS implementation. This person should have access to the necessary files (with appropriate security clearances) and the capability to store and modify documents, as well as distribute information as needed. Choose someone well organized: this job is key to initial EMS implementation and continuous operation.

- Choose a member of the CFT as meeting recorder (possibly the same person as the EMS document coordinator). This person is responsible for properly documenting each meeting (including the initial one) through written minutes. The recorder also files and maintains the meeting records in accordance with the procedures the EMS document coordinator establishes. All team members need in-depth EMS training and a clear understanding of their roles and responsibilities to plan and lead the implementation effort. Specific training objectives should include the following:

  - ➤ EO 13148 requirements

  - ➤ Army policy

  - ➤ ISO 14001 requirements

  - ➤ EMS fundamentals (what it is, how it works, who is responsible, etc.).

Training is available from many sources. The CFT can be trained by contractors on- or off-site, at private institutions or training centers, or through Army training sites. The training can be done in-house via distance learning or train-the-trainer sources. Click here to find information on training resources.

Can we hire a contractor to help implement an EMS?

Implementation of an installation EMS is an installation leadership responsibility. Direct involvement of key installation personnel is essential in developing an EMS that is mission focused and integrated with existing systems and procedures. While contractors can facilitate EMS implementation in numerous ways, they **cannot** deliver a functional EMS as a "product."

Installation participation, support, and ownership must be established for the EMS to become an effective management tool. Training, coaching, facilitating, and preparing documentation are tasks well-suited to contractor support. The materials in the following hyperlinks provide additional guidance and information for those installations considering the use of contractors.

Click here for a contracting options information paper. Click here for an example EMS implementation support statement of work (SOW). Click here for a list of Federal Fee for Service Contracting Offices.

Step 4. Conduct a self-assessment (by 30 March 2004).

> **Army EMS Implementation Metric**
>
> **Self-assessment.** An installation-wide EMS self-assessment has been documented and briefed to the GC.

The self-assessment determines the elements of the EMS that are already in place on your installation and those that need to be established or improved.[4] The CFT is responsible for performing a self-assessment to analyze the installation's conformance with the ISO 14001 standard. This system-level self-assessment should examine installation policies, processes, and procedures relevant to EMS requirements. The self-assessment itself is not a required ISO 14001 element, but it is one of the Army's EMS implementation metrics. A small team (headed by the EMSMR) should require only a few days to complete the assessment.

CFT members should have a basic understanding of ISO 14001 before the self-assessment. Initial EMS training, plus additional self-study, should suffice. The following links access tools that can help you determine what your installation has and what it needs to have for an Army-approved EMS. (Click here to view a self-assessment worksheet. Click here to view a gap analysis checklist. Click here to view a gap analysis scoring worksheet.) Many installations are developing installation sustainability plans, which can provide additional information complementary to the EMS self-assessment. Although ISO 14001 does not require a self-assessment for conformance, documentation that this DA EMS implementation metric has been completed is required as part of the DA EMS self-declaration process discussed in Step 29.

The results of the self-assessment must be reported to the CDR. These results ultimately help the EMSMR and CFT develop an implementation plan and identify the resources needed to implement the EMS.

> Because most Army installations have well-established environmental programs, many basic components of the EMS are already in place.

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[4] Various EMS references use the terms "self-assessment," "gap analysis," and "gap assessment" interchangeably. The Army is using the term "self-assessment."

Step 5. Meet with the EQCC.

After the self-assessment is completed, the CDR and EMSMR should meet with the EQCC.[5] This meeting should focus on briefly orienting senior leaders on EMS principles, explaining the benefits of implementing an EMS, and gaining the support of the EQCC members. This is your opportunity to build installation-wide support for the EMS. The CDR and EMSMR should discuss the following:

- EMS orientation.

  ➤ Create awareness with a brief EMS introduction and overview.

  ➤ Explain that the garrison is implementing an EMS per Army policy and EO 13148.

  ➤ Explain that the garrison will involve them in future tasks, such as implementation planning and management reviews.

  ➤ Obtain buy-in and set the stage for future meetings.

- Results from the self-assessment

  ➤ Explain the purpose of the self-assessment.

  ➤ Describe the installation's EMS status—the requirements already met and those pending.

  ➤ Ask for assistance in highlighting areas that may require significant resources (including nonenvironmental ones) and identifying funding sources.

- Reviewing and revising the environmental policy statement

  ➤ Explain that the environmental policy is an Army metric for implementing the EMS and should have been completed by 30 September 2003.

  ➤ Explain that your staff will revise the installation's environmental policy to reflect EMS implementation efforts and they will be included in the staffing process.

  ➤ Obtain input.

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[5] As stated in Chapter 1, we use the abbreviation EQCC throughout this guide to refer to an actual EQCC or any similar senior leader advisory group.

If your installation does not have an EQCC or it has not been meeting regularly, you must form one (as required by Army Regulation 200-1) and set a regular meeting schedule. The EQCC is the ideal senior leader group to participate in EMS implementation because it includes mission commanders and other senior representatives from all the major organizations and tenants on the installation.

Step 6. Prepare an EMS implementation plan.

Using the results of the self-assessment and guidance from the meeting with the EQCC, the EMSMR should begin working with the CFT to develop an EMS implementation plan and associated budget:

- The implementation plan is critical because it is the road map for EMS implementation across the installation. Completing the plan and obtaining command approval is also an Army EMS implementation metric.

- Use the self-assessment results and this guidance to determine the parts of the EMS that your installation needs and how to complete them.

- The EMS implementation plan should detail the key actions needed to complete the elements required in an ISO 14001–conforming system, who completes those elements, the resources needed, who provides the resources, and when the work is completed.[6]

- The plan should clearly cite the desired goals for EMS implementation (for example, whether certification is desired) and clearly define roles and responsibilities for plan execution. Make sure it includes key milestones.

- Use automated project planning tools as needed to help plan and manage the EMS implementation process over time.

Some organizations may elect to establish timekeeping codes to track hours spent implementing the EMS. These data can be useful in tracking total EMS implementation costs and in continuing project management efforts.

Click here to view a sample implementation plan. Click here to view a related sample gap analysis. Click here to view a sample project schedule in MS Excel, or click here to view a sample project schedule in MS Project.

The EMSMR should determine how detailed your implementation plan is. The sample implementation plan at the hyperlink is highly detailed and could be used as a primary management tool by the EMSMR. However, you could opt for a less detailed format that summarizes key management information outlined in the bullets above. If you decide to use a detailed plan to manage EMS implementation, it may be useful to develop a summary version for leadership briefings.

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[6] NSF International Strategic Registrations (NSF-ISR), Ltd., *Environmental Management Systems—An Implementation Guide for Small and Medium-Sized Organizations*, 2001, p. 13.

Step 7. Obtain CDR approval of the EMS implementation plan (by 30 September 2004).

> **Army EMS Implementation Metric**
>
> **Implementation plan.** A written implementation plan with scheduled dates and identified resources, timelines, and organizational responsibilities for implementing an installation-wide, mission-focused, ISO 14001 EMS NLT FY09 has been developed and signed by the GC.

When completed, the implementation plan and budget should be staffed through all senior leaders in the garrison and nongarrison organizations, and then reviewed and signed by the CDR. By concurring with the implementation plan, mission commanders and directors commit to providing the necessary resources (funding and manpower) for EMS implementation. Be certain to identify specific funding sources in the plan budget.

> Resources include human resources and specialized skills, technology, and funding.

After the plan is approved, keep it accessible (see documentation requirements in Step12) for updating when changes occur. Use the approved plan as the primary project management tool to identify potential roadblocks and ensure task accomplishment. Periodically review implementation progress with regard to milestones and analyze the budget. ISO 14001 does not require documentation of the implementation plan, but the DA EMS self-declaration process does, so it should be controlled under the document control system (Step 13) and implementation progress should be tracked (Step 26). Progress toward implementing specific activities in the implementation plan must be reported and discussed in EMS management reviews (Step 30).

Step 8. Hold an EMS kickoff meeting.

An installation-wide EMS implementation kickoff meeting is a good way to formally announce the EMS effort. Explain why the installation is implementing an EMS and the benefits that will result. Present the self-assessment results as the foundation for EMS implementation efforts across the installation and discuss the installation and Army goals for EMS implementation. A wide variety of people should attend this kickoff meeting, including the following:

- CDR

- EMSMR

- CFT

- EQCC

- Installation real property planning representative

- Installation environmental staff

- Representatives from all installation functional areas

- Support contractor representatives

- Installation Management Agency Regional Office representative, if available

- Unions

- Contracting officer or contracting officer's representative

- Community advisory boards

- Interested parties from the community.

The CDR should sponsor and announce the kickoff meeting. The EMSMR prepares the agenda and supports the CDR as required. At the kickoff meeting, the CDR should introduce the installation's EMS efforts, explain why the initiative is important, and briefly describe how implementation will occur.

These talking points, developed by the U.S. Army Engineer School (USAES), may be helpful in developing the briefing, but it must be customized to fit the installation's EMS.

Ensure that members of the environmental management office attend the kickoff meeting because they provide environmental technical support regarding specific environmental issues. Include representatives from all functional areas on the installation to inform them how they are expected to contribute to the implementation effort. Good representation from tenants, activities, and units at the installation is essential because they are all involved in implementation efforts. Emphasize that EMS implementation requires support from across the installation.

Finally, invite an IMRO representative. The IMRO is the next higher headquarters above the garrison in the IMA organizational structure. An IMRO representative may be willing to attend the kickoff and make some remarks regarding the IMA and the regional perspective on the EMS implementation initiative.

EMSMR AND CFT IMPLEMENT THE EMS

At this point, most of the preparatory work is complete and you are ready to begin the critical phase of EMS implementation. Except for "mission focus," all elements in Figure 2-1 directly relate to the requirements of ISO 14001. Those highlighted in yellow include requirements contained in the Army and DoD implementation metrics.

Figure 2-1. EMSMR and Cross Functional Team Implement the EMS

Step 9 Mission Focus	Step 10 Environmental Policy, ISO 14001 Sec. 4.2	Step 11 Awareness Training ISO 14001 Sec. 4.4.2	Step 12 Documentation ISO 14001 Sec. 4.4.4	Step 13 Document Control ISO 14001 Sec. 4.4.5

Step 20: Objectives and Targets, ISO 14001, Sec. 4.3.3

Step 21: ,Environmental Management Programs ISO 14001, Sec. 4.3.4

Step 22: Resources, Roles, Responsibility & Authority ISO 14001, Sec. 4.4.1

Step 23: Operational Control ISO 14001. Sec. 4.4.6

Step 24: Competence Training, ISO 14001, Sec. 4.4.2

Step 25: Monitoring and Measurement ISO 14001, Sec. 4.5.1

Step 26: Records, ISO 14001, Sec. 4.5.4

Steps 16-19 Environmental Aspects ISO 14001 Sec. 4.3.1

Step 15 Legal and Other Requirements ISO 14001 Sec. 4.3.2 & 4.5.2

Step 14 Communication ISO 14001 Sec. 4.4.3

Step 27 Emergency Preparedness and Response ISO 14001 Sec. 4.4.7

Step 28 Nonconformance and Corrective and Preventive Actions, ISO 14001 Sec 4.5.3

Step 30 Management Review ISO 14001, Sec. 4.6

Step 29 Periodic Audits ISO 14001, Sec. 4.5.2 & 4.5.5

You can rearrange the sequence of these steps for your situation. To accelerate implementation and frontload the implementation metric requirements, you can postpone Steps 12, 13, and 14 until after the aspects and impacts analysis is completed. You can also perform many of these steps concurrently, if resources permit.

The concept of continual improvement is critical to the EMS. The entire EMS is periodically reviewed and revised to improve performance and address changes in mission or installation operations.

Step 9. Identify mission focus.

To create a mission-enhancing EMS, the CFT members need to develop a clear understanding of the installation's mission focus. One way is to meet with leaders from the major organizations on the installation to help determine installation-level mission priorities. Regardless of the process for developing the information, you should accomplish the following objectives:

- Identify and prioritize actions that installation units and organizations currently perform to maintain readiness or to accomplish the organization's day-to-day missions.

- Identify and prioritize anticipated (future) mission requirements (3 to 5 years in the future).

- Identify future large-scale issues that might affect the installation mission (10 or more years in the future).

- Identify environmental roadblocks or impediments that affect mission capabilities.

- Identify the installation's sustainability goals and initiatives.

An essential step in designing an EMS is understanding the mission priorities of the units and organizations on the installation. The warfighting, training, and sustaining missions are the top priorities of any installation: these missions are why the installation exists. The challenge is to identify, manage, and mitigate the environmental impacts of mission-related activities. By proactively managing these impacts, you can continue to train and perform critical activities now and in the future. Clearly identifying sustainability goals and initiatives, future missions, and large-scale issues early allows greater time and flexibility for identifying impacts and finding solutions. A well-designed EMS supports realistic, effective, and sustainable training and operations, and helps the installation prepare for new mission requirements.

The Army Strategy for the Environment is based on the "triple bottom line" of sustainability: mission, environment, and community. Understanding how the installation is integrating this triple bottom line into its mission priorities is key to implementing a successful EMS that focuses on supporting the long- and short-term mission priorities of the installation.

Every installation has a unique set of mission priorities based on the different organizations residing, operating, and training on the installation. Recommended steps for gathering information and meeting with organization leaders follow.
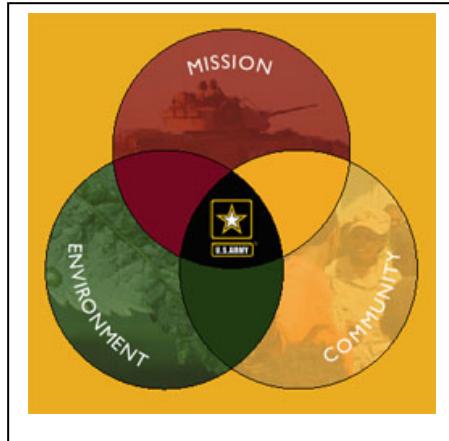
A. Develop an inventory of all units and organizations on your installation.

This will help you make sure that no organization is left out, set completion milestones, and schedule meetings:

- Get copies of organizational charts and learn the chain of command so you understand the hierarchy of the military organizations.

- As you develop the inventory, you should consider all units, organizations, and tenants on the installation, including Table of Organization and Equipment (TOE), Table of Distribution and Allowances (TDA), active, Reserve, and ARNG.

- If your installation has multiple units with the same organization and mission (three infantry battalions, for example), save time by limiting the interview to one of those units.

- Identify unit environmental compliance officers (ECOs) in military units and their respective level of training per AR 200-1.

- In preparation for meeting with organization representatives, review recent notices of violation (NOVs), environmental enforcement actions, and Environmental Program Assessment System (EPAS) findings. Be certain to meet with the leaders of organizations where environmental problems or issues have been identified.

B. Notify leaders and ECOs to be contacted.

When scheduling meetings, begin with the GC, senior mission commanders, and directors of non-TOE activities on the installation. Include senior leaders of any non-Army organizations that are tenants on the post.

Explain the purpose of the meeting, provide read-ahead materials, and request completion and return of the unit information sheet along with a copy of the unit mission-essential task list (METL), if available.

The read-ahead materials should include an EMS information brochure, organization information sheet and instructions, and the meeting agenda and instructions.

C. Select participants and schedule the meetings.

Be certain to match the CFT member's experience and knowledge with the organization being interviewed. Persons meeting with commanders of military units should have a good understanding of Army units and operations and should spend time reviewing the organization information sheet before holding the meeting.

D. Meet with organization representatives.

Begin each meeting by explaining the purpose and how the results will be used to develop a mission-enhancing EMS. Use a written format sheet to guide the discussion and record information. Click here to view a recommended meeting format. Click here to view the instructions for using the meeting template. Try to achieve the following major meeting objectives:

- **Identify current missions and mission priorities.** What are the unit's most important missions and mission-related activities? One technique for determining priorities is to perform a hypothetical resource allocation. If the leader had 100 "resource units" to fund mission priorities, how would they be distributed?

- **Identify and prioritize anticipated future missions (3 to 5 years out).** What new missions or weapons systems will be assigned to the unit in the near future? Where do they fall in the priority scheme?

- **Identify future large-scale issues that might affect the installation and its missions (10 or more years out).** Ask the leader to discuss any situations that might significantly limit future mission capabilities. Examples include regional issues, such as water shortages and power grid or infrastructure limitations, and military issues, such as increased training space requirements for new longer-range weapons systems.

- **Discuss environmental "roadblocks" or issues that negatively affect the mission.** These should be issues that are difficult to work around or that cause significant impairments to the mission or

training. Examples include endangered species habitats, noise re-
strictions, and air emission restrictions (dust, smoke, etc.).

E. Determine the installation's top mission priorities.

After gathering input from all the organizations, combine the results into
broad mission categories. Examples include "basic infantry training," "ar-
tillery training," "rebuilding tactical armored vehicles," and "biomedical re-
search." What happens if mission activities cannot be performed on our
installation?

Ask for input from the GC and staff to help determine installation-level
mission priorities. After a priority list is developed, the CFT (with assis-
tance from the environmental office) reviews and verifies the results,
which are used in the aspects and impacts analysis (Steps 16 through 19).
To determine the significance of environmental aspects and impacts, you
need to consider the mission priority of the activities associated with the
environmental aspects and impacts.

Step 10. Revise and sign installation environmental policy statement (by 30 September 2003).
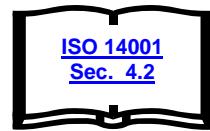
Army EMS Implementation Metric

Policy. A policy statement consistent with ISO 14001 and the Army Management Action Memorandum has been developed, signed by the Garrison Commander, and made available to installation personnel and the public.

Installations must complete an installation environmental policy statement that conforms to ISO 14001 requirements. This environmental policy is the installation's statement of the overall direction and principles of action regarding its environmental responsibility. "It sets the goal as to the level of environmental responsibility and performance required of the organization, against which all subsequent actions will be judged."[7]

ISO 14001 defines an *environmental policy* as a statement of overall intentions and direction of an organization related to its environmental performance as formally expressed by top management.

Your installation probably already has an installation environmental policy. Use this opportunity to review it and make sure it fulfills the requirements described below. The EMSMR will need to work with the CDR and CFT to review and revise, or create, a suitable environmental policy statement.

A. Review the policy content.

To conform to ISO 14001, and be relevant to an Army installation, the policy must apply to the defined scope of its environmental management system. It must also have the following key features:

- **Pertain to the nature, scale, and environmental impacts of the installation's activities, products, or services.** This is one reason why we examined mission focus in Step 9. The policy must refer to the installation's mission.

- **Include a commitment to continual improvement and prevention of pollution.** Nothing elaborate is required—just a brief statement that commits the installation to these two concepts.

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[7] International Organization for Standardization, *Environmental management systems—General guidelines on principles, systems and supporting techniques*, ISO 14004, 2004, Section 4.2, p.8.

ISO 14001 defines *continual improvement* as a recurring process of enhancing the EMS to achieve improvements in overall environmental performance consistent with the organization's environmental policy.

ISO 14001 defines *prevention of pollution* as the use of processes, practices, techniques, materials, products, services, or energy to avoid, reduce, or control the creation, emission, or discharge of any type of pollutant or waste to reduce the environmental impacts.

- **Commit to comply with applicable legal and other requirements to which the installation subscribes that relate to its environmental aspects.** If the installation has already made this commitment, it can be stated in one sentence in the policy.

- **Provide the framework for setting and reviewing environmental objectives and targets.** Again, no elaborate explanation is required. You could state that you are setting objectives and targets in the same sentence as continual improvement.

- **Be documented, implemented, maintained, and communicated to everyone working for or on behalf of the organization.** The policy must be managed and controlled in accordance with your document control procedures (Step 13). It must be signed by the CDR and reissued following changes of command (some installations make the initial signing ceremony a media event or press release). It must also be communicated to and understood by everyone in the organization. Some installations have used wallet cards to assist in this effort. Getting employees and other appropriate installation personnel to understand the installation's environmental policy is key to a successful EMS.

- **Made available to the public.** [8] Your installation may choose to publish the policy in a newspaper or on your website. Additionally, the installation PAO should be made aware of this ISO requirement because they likely will be the organization designated to deal with inquiries on the EMS from the public, as established in your external communications procedures (Step 14).

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[8] International Organization for Standardization, *Environmental management systems—Requirements with guidance for use*, ISO 14001, 2004, Section 4.2, p. 4.

B. Optional content.

Your environmental policy may include other goals for which your installation strives, for example,

- minimize any significant adverse environmental impacts of new missions or processes through the use of the integrated environmental management procedures and planning;

- incorporate sustainability and life-cycle thinking in planning decisions;

- participate in affirmative procurement practices and buy environmentally friendly or recycled products, when possible;

- reduce waste and the consumption of resources (materials, fuel, and energy) and commit to recovery and recycling, as opposed to disposal, when feasible;

- improve environmental education and training of the workforce;

- share environmental experience;

- promote involvement of and communication with interested parties;

- work with local communities toward sustainable development; and

- encourage the use of EMS by suppliers and contractors.[9]

Anything you include in the policy is subject to audit. If you commit to something, you must follow through and be able to prove that the system supports attainment of the stated goals. **For this reason, many EMS experts suggest avoiding lengthy policy statements.**

C. Staff and finalize.

In most cases, the EMSMR is responsible for drafting a new or revised environmental policy. As senior leadership changes, the policy should be reviewed, revised as necessary and re-signed to ensure currency. After completing the draft, staff the policy according to your installation's staffing guidance. Staffing is essential for obtaining constructive input and commitment from those who implement the policy. The GC needs to ensure that key subordinates and the installation's major tenant commanders understand and support the environmental policy.

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[9] ISO 14004, Section 4.2, p. 9.

[Click here](#) to view examples of ISO 14001–conformant, installation-level environmental policies from Fort Lewis and Tobyhanna Army Depot.

Step 11. Establish and implement awareness training procedures (by 30 March 2005).

**ISO 14001
Sec. 4.4.2**
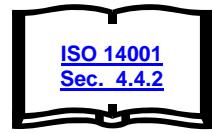
Army EMS Implementation Metric

Training. Appropriate facilities have established a documented procedure and followed it to ensure that appropriate installation personnel have received EMS awareness training consistent with Army EMS policy.

ISO 14001 REQUIREMENTS

ISO 14001 addresses awareness and competency training in the same section, but does not clearly distinguish between the two. The Army has decided to address awareness training early in the implementation process to prepare and educate installation personnel on the **basic concept of the EMS** and **how it might generally affect them**. Competency-based training addresses job-specific issues and occurs later in the implementation process, after key elements of the EMS are already in place.

EMS Awareness Training is *not* the same as the *competency-based* environmental training, covered in Step 24, which ISO 14001, Section 4.4.2, also requires.

One of the great benefits of implementing an EMS is that it educates and empowers employees so *everyone* (not just the environmental staff) takes it upon themselves to find a way to improve environmental performance. The purpose of EMS awareness training is to create a basic awareness and understanding of EMS principles and to communicate the installation's environmental policy to all appropriate personnel. The EMS awareness training procedure was required to be completed and implementation begun by 30 March 2005. Implementation of awareness training is an ongoing requirement and installations should review and revise the procedure as necessary to ensure that their EMS awareness training program is effective.

The purpose of this general environmental awareness training is to

- communicate general EMS concepts and principles;

- communicate the environmental policy to all appropriate installation personnel;

- communicate that installation leadership supports the EMS;

- gain commitment to meeting installation environmental objectives and targets; and

- instill a sense of individual responsibility for the success of the installation EMS.[10]

The EMSMR should work with the CFT to plan and provide EMS awareness training, as needed, for installation personnel to ensure continual awareness. Awareness training is never totally finished and should be considered a recurring requirement. As the installation population changes through staff and unit turnover or expansion, the installation should develop an effective program for indoctrinating new personnel. Take a multimedia approach to developing awareness training procedures suitable and adequate for your installation. During internal EMS audits, installations should judge the effectiveness of their awareness training procedures and adjust them to ensure that all appropriate personnel have received EMS awareness training.

> Take a multimedia approach to developing awareness training procedures suitable and adequate for your installation.

Awareness training does not have to be a classroom style event where all appropriate personnel that attend the training are documented as attending; instead, it should be provided in a variety of ways. Your installation has to determine the most efficient and effective media for ensuring that all appropriate personnel receive awareness training. The training can take many different forms:

- Post newspaper articles

- Posters in break rooms, post exchanges, or commissaries

- Wallet cards or "smart" cards (click here for a sample smart card)

- Installation websites, intranet, or message boards

- Videos

- Classroom training

- Computer-based training (CBT)

- Part of in-processing briefings and orientation packages.

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[10] ISO 14004, Section 4.4.2, p. 21.

Regardless of the types of media the installation chooses for disseminating awareness training, it needs to ensure that the procedure is suitable and adequate for the installation.

> New personnel continually arrive at the installation, so awareness training is a continuous requirement that is never completed.

APPROPRIATE PERSONNEL

The Army metric specifies that *appropriate installation personnel* receive EMS awareness training. Click here to view the Army memo on awareness training. Appropriate installation personnel should include everyone who works for or on behalf of the installation: civilians, military, vendors, suppliers, and contractor personnel working directly for the installation or working as a tenant on the installation. Installations may also consider including family housing in their definition of appropriate personnel, as family housing members can contribute to an installation's environmental aspects and impacts. Regardless of whether an installation chooses to include members of family housing, it should clearly define whom they deem appropriate personnel in their awareness training procedures. Click here for a sample awareness training procedure.

BROAD TRAINING ELEMENTS

Awareness training is intended to be general: individuals whose work may significantly impact the environment receive specialized competency-based training later. The recommended elements of EMS awareness training include the following:

- The installation's environmental policy and the importance of support for the policy and its associated procedures

- A broad definition of an EMS

> **Examples**
>
> Some ARNG organizations use a smart card, or a brochure sized to fit in a military uniform cargo pocket. The smart card summarizes the required EMS awareness information and can be used as a memory jogger during an audit. Click here to view the ARNG smart card.
>
> At some facilities, all EMS awareness training is provided via CBT. The training materials have been placed on the facility's main computer server. Employees log on and go through the training materials, which typically requires about an hour.

- Reasons why the installation is implementing an EMS

- Leadership support for the initiative

- The concept that everyone on the installation has a role to play in implementing an EMS and protecting the environment

- What individuals can (and are expected to) do to protect the environment and support the mission[11]

- An introduction to the installation's broad environmental objectives and targets, if known (such as water conservation, energy conservation, and participation in recycling programs).

PITFALLS

Awareness training is exactly what the name implies, making all installation personnel generally aware of what an EMS is and how it is being implemented on the installation to gain their support. When preparing and presenting the awareness training, try to avoid the following:

- Making everyone an EMS or environmental expert

- Using overly technical EMS or ISO terms

- Including specific regulatory requirements or references

- Including competency training (which will be provided separately to those who require it)

- Maintaining records of every person who has received the training

- Testing the students at the conclusion of the training.

KEY ACTIONS

A. Meet with the training managers at your installation.

Discuss the requirements for EMS awareness training, the resources available, and what needs to be done. In most cases, they will assist you in scheduling and arranging appropriate training and notifying personnel. You may choose to incorporate EMS awareness training into regularly scheduled training events, such as unit training days. You may also have access to CBT resources or closed circuit television systems. As a fully integrated element of the installation's business processes, EMS should be a standard part of the installation's training requirements.

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[11] ISO 14001, Section 4.4.2, p. 5.

B. Schedule and initiate awareness training.

Develop an EMS awareness training procedure as soon as the environmental policy has been updated and signed. You can develop multimedia training to ensure that the awareness training has reached all the appropriate personnel on your installation.

Your awareness training procedure should define the media you use and frequency of presentation. During internal and external audits, your installation is judged as to whether your awareness training procedure has been followed as well as on the effectiveness of your procedures.

C. Document the EMS training procedure.

To meet the requirements of the metric, you must document a procedure for providing awareness training to all appropriate personnel on the installation. This procedure can be centrally managed at the installation's training office or elsewhere. The procedure must be kept current and readily available for review or audit, and its location must be specified in the EMS records procedures (Step 26).

> Only the awareness training procedure requires documentation. Installations *are not* required to document that all appropriate personnel have received formal awareness training.

Installations are not required to document that all appropriate personnel have received formal awareness training, but if an installation has already begun to document personnel who have received awareness training and still feels it is appropriate, it should continue the effort. At a minimum, the procedure should include

- information addressing when the procedure needs to be reviewed and updated;

- a definition of the installation "appropriate personnel" who will receive the training;

- a method of identifying and training new personnel;

- the various means or media by which you intend to provide the training;

- the frequency of the various types of training;

- the focus of the training in each of the various means or media; and

- the person responsible for developing and maintaining the procedure.

to see a sample awareness training procedure.

D. Ensure the continuing adequacy of EMS training.

Your awareness training procedures should identify the media your installation uses to provide awareness training and the training frequency. Training should be offered frequently to reach new personnel, new contractors, and military units using the training areas. Most installations provide a monthly or quarterly "newcomers orientation" for new personnel and military transfers. This is one venue that can be used to provide EMS awareness training to the target audience. EMS brochures can also be included in in-processing materials to target new personnel. At range areas, some installations add an EMS briefing to the required safety brief.

During internal EMS audits (addressed in Step 29), your audit team should determine the effectiveness of your awareness training procedure. It should be evident during this process whether the media that your installation has used for awareness training is effectively reaching all appropriate personnel. Your awareness training procedures should be revised, as appropriate, to ensure that they effectively provide awareness training.

E. Update and maintain training materials.

Establishing standardized training materials, and periodically reviewing and updating them, ensures that the training provided remains relevant as situations, missions, and organizations change. It also helps keep the training consistent, even if different instructors or presentation media are used. It provides a good overview of training content for auditors or other interested parties. Your awareness training procedures should address a schedule for reviewing and updating the training materials, which should be included as part of your EMS documentation (Step 13).

> We address *Competency Training* in Step 24. Competency-based environmental training and skill validation are required only for personnel whose work activities can significantly impact the environment. Competency training most likely requires the installation to document training required and actual training received by each employee identified as having a job that has the potential to create a significant impact.

to access awareness training materials and training sources.

Step 12. Initiate EMS documentation.

The installation designs a standardized framework to use in developing and organizing the various types of documentation required by ISO 14001. Complete, well-organized documentation is essential for describing, managing, evaluating, and improving the EMS. This documentation is a written description of your installation's EMS and directions for how things should be done.

Developing EMS documentation is an ongoing process. Some of the required documentation already exists on your installation—you just need find it and manage it in accordance with your document control procedures (Step 13). Some of the documentation required by ISO 14001 takes time to develop.

The following subsections describe the types of EMS documentation required. As you design and implement the required elements of your EMS, think about the required documentation and begin building and organizing it as you develop each element of the EMS.

ISO 14001 REQUIREMENTS

The ISO 14001 standard specifically requires

- environmental policy, objectives, and targets;

- a description of the scope of the EMS;

- a description of the main elements of the EMS and their interaction and reference to related documents;

- documents, including records, required by the ISO standard; and

- documents, including records, required by the installation to ensure effective planning, operation, and control processes that relate to its significant aspects.

Limit your documentation to that required to meet ISO 14001 and Army requirements. When you designate electronic or hardcopy documents to be maintained under the EMS, you must manage and maintain them under the document control procedures you develop in Step 13. Unnecessary documentation means unnecessary work and additional potential for nonconformance with the ISO 14001 standard.

Think of EMS documentation as a tiered system (Figure 2-2).

Figure 2-2. EMS Document Hierarchy
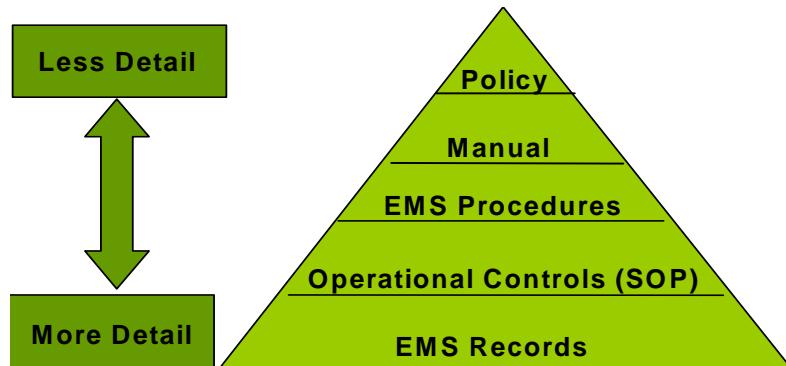
Five types of EMS documentation typically constitute the hierarchy. Records are a special type of documentation (Step 26). As you move down the pyramid, the amount of information, degree of specificity, and number of pages generally increase.

Environmental Policy

The first level of documentation is the environmental policy—a statement of the installation's mission, intentions, and principles related to its environmental performance. (You complete the environmental policy in Step 10.)

EMS Manual

The second level of documentation is the EMS manual. The manual is the central document that describes the scope of the EMS, its core elements, and how they fit together. The ISO 14001 specification does not require a manual, but a manual provides a simple, effective solution for conforming to ISO 14001 EMS documentation requirements. The manual is a road map of the installation's EMS, briefly addresses each of its elements, and clearly outlines the processes the installation uses to run it (think of it as an EMS concept of operations). You should now develop an outline for your EMS manual, which typically contains the following:

- Environmental policy

- An outline of the installation environmental management programs (EMPs)

- EMS roles, responsibilities, and authorities

- EMS procedures

- The location of current EMS objectives and targets

- The location of other documentation, such as emergency response plans, training plans, and standard operating procedures (SOPs) (consider using a flowchart)

- The location of operational controls (SOPs) and records.[12]

As you continue implementation of your EMS, you develop the information and procedures described above. Think about organizing the manual along the lines of the EMS elements shown in Figure 2-1, which address the requirements in ISO 14001. This can help you check your conformance with the ISO 14001 standard.

The EMS manual is not a comprehensive *physical* collection of all the detailed operational controls (SOPs) developed throughout the EMS implementation. Try to keep the EMS manual short, no more than one page per EMS element, and as simple as possible.[13] You do not need to describe every detail of your EMS in the manual: refer to other documents or procedures so that you can revise individual procedures without revising the entire EMS manual. The EMS manual can be a useful tool for explaining the installation's EMS to new employees, auditors, or other interested parties, if desired. Review and update the manual according to your document control procedure (Step 13) to account for any changes in your EMS. Click here to view a sample EMS manual.

As you continue the implementation process, you create EMS procedures for certain elements of the EMS that are described in the specific steps throughout this guide. These procedures are part of the EMS, and your manual should either include the procedure or provide directions to them. As you create area- or activity-specific operational controls (SOPs) for certain operations or activities, you may also choose to provide directions to their locations in the EMS manual.

You cannot complete the manual until you finish EMS implementation, but starting it now helps you organize and document ongoing efforts.

EMS Procedures

The third level of documentation is EMS procedures, which describe how to operate and maintain the EMS and define the authority, responsibility,

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[12] Concurrent Technologies Corporation for the U.S. Army, *Environmental Management System Guidance Manual: Implementing ISO 14001,* p. 40; and ISO 14004, Section 4.3.3.2, p. 19.

[13] NSF-ISR, p. 47.

and accountability for implementation and follow-through. The procedures are the core elements that describe how your EMS operates. A large portion of the EMS manual comprises procedures addressing various facets of the installation EMS. The manual does not have to physically include the procedures: as an alternative, it can refer to their location, or, if maintained electronically, it can provide a hyperlink.

ISO 14001 requires documentation of some EMS procedures, and the Army requires or recommends documenting others. Table 2-1 lists all required or recommended procedures, whether required by ISO 14001 or Army policy, and whether they must be documented. Although ISO 14001 and Army policy do not require documentation of all procedures, we recommend documenting those listed in Table 2-1.

Table 2-1. EMS Procedures

Procedure	ISO Reference Section	ISO 14001		Army	
		Required Procedure	Required Documented Procedure	Required Documented Procedure	Recommended Documented Procedure
Significant environment aspects	4.3.1	√			√
Legal and other requirements	4.3.2	√			√
Objectives and targets	4.3.3				√
EMPs	4.3.3				√
Operational controls	4.4.6		√		
Awareness training	4.4.2	√		√	
Competency training	4.4.2	√			√
Emergency preparedness and response	4.4.7	√			√
Monitoring and measuring	4.5.1	√			√
Internal communications	4.4.3	√			√
External communications	4.4.3	√			√
Document control	4.4.5	√			√
Records management	4.5.4	√			√
Addressing nonconformances	4.5.3	√			√
Compliance Audits	4.5.2	√			√
EMS audits	4.5.5	√			√
Management review	4.6			√	

Developing and maintaining EMS procedures is mainly the responsibility of the CFT. This guide will prompt you to develop the required EMS procedures as you continue implementation. When you reach the end of this guide, most of your EMS procedures should be completed. As you operate and refine your EMS, you will probably see a need to revise some of the procedures or add new ones to address emerging issues.

Operational Controls (SOPs)

The fourth level is the collection of EMS operational controls. ISO 14001 requires that you identify and plan for operations associated with the installation's significant aspects by establishing operational controls. Operational controls consist of documents such as SOPs, pollution prevention plans, spill plans, and solid waste management plans. Your installation already has SOPs and plans for most major processes or activities. Supervisors and leaders are responsible for the SOPs in their functional areas.

As you implement the EMS, the goal is to ensure the SOPs direct employees to perform their jobs in ways consistent with the installation's environmental policy and the goals and objectives of the EMS. The SOPs should incorporate significant environmental aspects (Step 19), objectives and targets (Step 20), and monitoring and measurement procedures (Step 25) into the daily activities or job practices of installation personnel. The operational controls are a key component of the EMPs you develop in Steps 21–26.

CFT members and environmental personnel should work with unit leaders and civilian supervisors to produce SOPs that support the EMS. These SOPs give specific, detailed instructions that describe the methods for attaining environmental goals and hence complying with environmental policy.

Although most SOPs are already in place, reviewing and revising them can be a lengthy process. We recommend you develop a prioritized schedule that starts with environmentally significant processes or activities on your installation and maintain steady progress toward revising the SOPs. Step 23 gives detailed guidance for developing and revising SOPs.

EMS Records

Records provide a written history of EMS performance and actions completed. Records include internal and external documents such as training records, audit reports, and various forms of correspondence with regulators. We detail the EMS records and related ISO 14001 requirements in Step 26. Click here to view a summary of ISO 14001 and Army requirements for EMS documentation and records.

Step 13. Develop EMS Document Control Procedures.
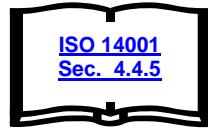
ISO 14001
Sec. 4.4.5

Written procedures ensure proper management of EMS documentation and conform to the ISO 14001 standard. To effectively implement and operate the EMS, installation personnel must have access to the information they need to do their jobs properly. They need correct and current procedures, instructions, and other reference documents. "Without a mechanism to manage these EMS documents, the organization cannot be sure that people are working with the right tools."[14] To ensure everyone works with the proper documents, you need a procedure to describe how the documents are controlled. Click here to view a sample document control procedure.

ISO 14001 requires organizations to "establish, implement and maintain" document control procedures. We recommend writing and maintaining these procedures as part of the EMS documentation. According to the ISO standard, the installation develops document control procedures to

- approve documents for adequacy;

- review and update, as necessary;

- ensure that changes and current versions are maintained,

- ensure that relevant versions are available for use,

- ensure the documents are legible and readily identifiable,

- ensure that external documents are identified and their distribution controlled, and

- prevent the use of obsolete documentation and ensure documents are suitably identified if retained for any reason.

Try to keep your system as simple as possible, including only documents that need to be controlled. You can quickly overwhelm the system by including unnecessary documents. Ensure that everyone knows how to use the system and understands their individual responsibilities for maintaining it.

Click here to view a document control worksheet that summarizes key questions regarding the document control process. By answering the questions on the worksheet, you can build a framework for your EMS document control procedures.

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[14] NSF-ISR, p. 50.

The ISO 14001 standard requires that EMS documentation include

- the environmental policy, objectives, and targets;

- a description of the scope of the EMS;

- a description of the main elements of the EMS, their interaction, and reference to related documents;

- documents, including records, required by the ISO 14001 standard, and

- other documents, including records, identified by the installation as needed to ensure effective planning, operation, and control of processes that relate to its significant environmental aspects.

Click here to view a document index spreadsheet for listing and tracking the status of controlled EMS documents.

Document Control System Hints

- Keep the document control procedure simple. Consider other document control procedures on the installation when developing yours.

- Limit document distribution—make only the copies you need.

- Consider using the local area network (LAN) or Intranet as a paperless system. Consider commercial document control software packages, but make sure the system meets your needs.

- Prepare a document control index that shows all your EMS documents, their location, their revision history, and the date of the next review. Include a reference to the index in the EMS manual, **but do not include the index in the manual,** because the index requires frequent revisions. If you use a paper-based system, prepare a distribution list that shows who has copies of the documents and their location.

- When revising documents, highlight the changes (using highlight, bold, underline, different colors, etc.) or use a change sheet to show the changes.

Source: NSF-ISR, Ltd., *Environmental Management Systems—An Implementation Guide for Small and Medium-Sized Organizations*, 2001.

Step 14. Establish communications procedures.
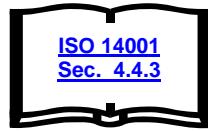
Good communication, within the installation and with interested external parties, is essential in developing and implementing the EMS. The installation must establish and maintain procedures for

- internal communications between the various levels and functions on the installation and

- external communications.

Most installations already have basic communications procedures in place. If that is the case at your installation, you need only revise the procedures to address EMS information.

ISO 14001 requires only that the organization *establish, implement, and maintain* procedures for communication and does not require documentation. However, we recommend that you document communication procedures if you want personnel to universally understand and consistently follow them.

INTERNAL COMMUNICATIONS

Internal communications include verbal communication (staff meetings, brown bag lunches, training, etc.), e-mail, intranet, memoranda, newsletters, posters, and bulletin boards. When developing the procedures, take advantage of existing communications channels and consider how different target audiences on the installation access or distribute information.

Some employees may not have consistent access to a computer for e-mail and intranet-based information, so multiple types of communication may have to be used. The following needs to be communicated internally:

- Information on day-to-day EMS operations, including the environmental policy and how it will be publicly available

- General EMS education and awareness information, including the process for receiving and responding to the concerns of employees and other interested parties

- Environmental regulatory reporting requirements

- How to achieve objectives and targets

- Environmental incidents

- Environmental aspects

- Personnel responsible for various parts of the EMS

- How the EMS will be monitored

- EMS audit reviews and the results, including the process for making all personnel aware of those results (communicated through the EQCC)

- The management review cycle.

EXTERNAL COMMUNICATIONS

You need an effective procedure for external communications. ISO 14001 requires only that the environmental policy be made available. It also states that the installation must decide whether to externally communicate its significant environmental aspects and to document its decision. The installation must establish procedures describing how it distributes information to the public and how it receives, documents, and responds to relevant communication from different types of external interested parties. The procedure should clearly identify the information to be made available to the public. Information the installation may consider making available to the public includes the following:

- Environmental aspects and impacts

- Installation environmental objectives and targets

- Meeting minutes

- Permits

- Compliance information, such as fines and NOVs.

Consult the PAO, legal office, security, operations, and other involved staff elements before deciding what information to release.

In addition to listing the publicly available information, document how you make it available and how frequently your installation updates it.

The PAO likely coordinates external communications and is probably the best external point of contact (POC). If no external POC exists, establish one and require the POC to coordinate and maintain records of external communications. ISO 14001 requires documenting or keeping records of communications with external parties. The procedure for recording exter-

nal communications can be as simple as stapling an inquiry to the response and then filing them together.[15]

Installation leadership determines whether the installation initiates and establishes external communication of the installation's significant aspects (see Step 19). Army installations are *not required* to publicly communicate this information. We recommend choosing in advance the information to be shared with the public and recording your decision. If you choose to do so, you can share EMS information by various means:

- Reports and newsletters

- Press releases in newspapers, in magazines, or on television

- Websites

- Public meetings.

Although not an ISO 14001 requirement, we recommend documenting the internal and external communications procedures, including

- who manages inquiries and the flow of information,

- who is responsible for preparing and approving responses, and

- types of information to be communicated.

Written communications procedures should be maintained in accordance with the installation's document control procedures.

Effective internal and external environmental communication and reporting has the following characteristics:

- It is two-way.

- Information is understandable and adequately explained.

- Information is verifiable.

- It presents an accurate picture of the organization's performance.

- Information is presented in a consistent form (for example, similar units of measure to allow comparison of two periods).[16]

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[15] NSF-ISR, p. 44.
[16] ISO 14004, Section 4.4.3, p. 24.

[Click here](#) to view a sample internal communications procedure document.
[Click here](#) to view a sample external communications procedure document.

Step 15. Compile legal and other requirements.
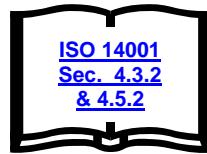
ISO 14001 requires that the organization *establish, implement, and maintain* procedures pertaining to legal and other requirements and to determine how these requirements apply to its environmental aspects. We recommend documenting these procedures to ensure they are periodically reviewed and revised as needed. Click here to view a sample procedure for legal and other requirements.

Legal and other requirements are part of the baseline for your EMS. As your installation performs its mission activities, everyone should be aware of the environmental regulations and other requirements that they must meet. The ISO 14001:2004 standard emphasizes the evaluation of compliance with legal and other requirements and suggests that an organization combine its evaluation of legal requirements with that of other requirements, and together these result in an evaluation of compliance with all requirements. The ISO 14001:2004 standard states that applicable legal and other requirements shall be taken into account when establishing, implementing, and maintaining an EMS. Identifying applicable legal and other requirements are an integral part of implementing the various facets of your EMS in the steps ahead, such as identifying significant aspects and developing objectives and targets.

In addition, the revised environmental policy (Step 10) requires a commitment to legal and other requirements. To fulfill this commitment, the installation needs to know the legal and other requirements that apply to your operations, activities, or services and how they affect what you do.[17]

Your installation probably already has a process for identifying legal and other requirements that pertain to environmental issues. In this step, you review the process to ensure that it captures all the applicable laws and regulations.

Your installation does not have to commit to additional voluntary requirements not mandated by law or Army policies. However, if it has previously volunteered or subscribed to other requirements, you must follow through on that commitment. This commitment also holds if you plan to participate in such activities in the future.[18]

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[17] See Note 1.

[18] Concurrent Technologies, p. 16.

Legal requirements include all federal, state, and local legislative and regulatory environmental requirements that apply to your operations. They also include administrative requirements, such as permits, authorizations, licenses, records, reporting, and environmental plans.

Other requirements include voluntary obligations to which the organization commits, such as the following:

- Army policies and regulations

- Industry standards of practice, such as American National Standards Institute (ANSI) and ASTM standards

- Agreements with public authorities, such as consent decrees and U.S. Environmental Protection Agency (EPA) programs

- Internal installation requirements, such as ISO 9001

- Environmental management principles.

Source: *U.S. Army Guidance Manual*, p. 16.

We recommend that your process for identifying legal and regulatory requirements meet the following criteria:

- Identifies relevant requirements, including state and local.

- Identifies proposed requirements and changes to existing ones.

- Describes a process for reviewing and analyzing requirements to determine potential impacts on installation activities, including who reviews it and how results are recorded and communicated.

- Is properly documented and sufficiently detailed.

- Is stored and maintained in accordance with your EMS document control procedure.[19]

The environmental management office should be able to provide a list of applicable environmental regulations. The following sources can also help identify legal and other requirements:

- AR 200-1, 200-2

- DENIX

- IMA/MACOM

- U.S. Army Environmental Center (USAEC) regional environmental offices (REOs)

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[19] ISO 14004, Section 4.3.2, p. 14.

- Federal, state, and local governmental agencies

- Industrial trade associations, societies, and other related groups

- Commercial databases

- Professional services, including environmental consultants and law firms

- EPAS (TEAM guide, active Army supplement, state supplements)

- Publications that pertain to self-compliance audits or environmental checklists.[20]

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[20] Concurrent Technologies, p. 17.

COMPLETE ASPECTS AND IMPACTS ANALYSIS AND DEVELOP PRIORITIZED ASPECT LIST (STEPS 16–19) (BY 30 MARCH 2005)
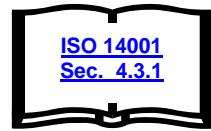
**ISO 14001
Sec. 4.3.1**

Army EMS Implementation Metric

Prioritized List of Aspects. A prioritized list of environmental aspects consistent with ISO 14001 and Army EMS policy has been developed for installation-wide activities and briefed to the GC.

STEPS 16 THROUGH 19 collectively identify the significant environmental aspects resulting from your installation's activities, products, and services:

- Step 16. Identify all mission and installation activities, products, and services.

- Step 17. Identify the environmental aspects of your installation's activities, products, and services that can be controlled or influenced.

- Step 18. Identify the environmental impacts of each aspect.

- Step 19. Identify significant environmental aspects.

After completing Steps 16–19, you have a list of prioritized environmental aspects from which you can determine the significant ones. The identification of significant environmental aspects is critical in developing your EMS because they provide key information for establishing objectives and targets, developing EMPs, identifying training requirements, determining requirements for operational controls and work procedures (such as SOPs), and completing periodic management reviews.

As we go through the Steps 16–19, we identify various installation activities, products, and services; discern the environmental aspects and impacts associated with each of them; and, finally, determine the significance of the aspect on the basis of a recommended scoring system. The examples used in Table 2-2 for activities associated with vehicle maintenance operations may help us to see how we get to the final product: a list of significant environmental aspects. We show you how we populated the table as we go through each of these steps, with examples to help show how we determined which of our aspects are significant.

Table 2-2. Identifying Significant Environmental Aspects

Activity, product, or service	Environmental aspect	Impacts	Significance score[a]						Overall significance (>25)
			Frequency	Environmental severity	Mission impact	Regulatory Impact	Community concerns	Overall score	
Vehicle mechanical repair and maintenance (Building 5100)	Air emissions (VOCs)	Air pollution (ozone depletion)	4	3	3	4 (Sig)	0	28 (Sig)	Significant
	Noise generation	Nuisances to the surrounding community	2	2	1	0	1	7	
	Waste generation (solvents)	Increased hazardous waste generation and storage	4	3	1	4 (Sig)	1	21	Significant
	Discharges and spills (oils and grease)	Surface or ground water contamination (decrease in dissolved oxygen content)	2	3	2	4 (Sig)	1	15	Significant
	Energy consumption	Energy source depletion	5	1	1	1	0	11	
Body repair and painting (Building 5100)	Air emissions (VOCs)	Air pollution (ozone depletion)	4	3	3	4 (Sig)	0	28 (Sig)	Significant
		Surface water contamination (increased toluene concentration from discharged scrubber water.)	3	3	1	2	0	14	
	Noise generation	Nuisances to the surrounding community	4	3	1	1	1	18	
	Waste generation (solvents)	Increased hazardous waste generation and storage	4	3	1	4 (Sig)	1	21	Significant
	Discharges and spills (oils and grease)	Surface water contamination (decrease in dissolved oxygen content)	2	3	2	4 (Sig)	1	15	Significant
	Energy consumption	Energy source depletion	5	1	1	1	0	11	
Vehicle washing (Building 5125)	Waste generation (domestic solid waste)	Increased solid waste storage requirements	5	1	0	4 (Sig)	0	9	Significant
	Discharges and spills (oils and grease)	Surface water contamination (decrease in dissolved oxygen content)	5	2	0	4 (Sig)	1	15	Significant
	Energy consumption	Energy source depletion	5	1	1	1	0	11	
	Natural resource alteration (potable water use)	Source water depletion	5	2	2	1	1	22	

Note: VOC = volatile organic compound.

[a] *Significance score (SS) = frequency $\times$ (environmental impact + mission impact) + regulatory impact + community concern.*

These steps have proven the most difficult for organizations to implement because the methods used can vary widely in detail and complexity. This can quickly snowball if you don't tailor your approach to capture the most significant aspects before you exhaust available time and resources. The recommended procedures that follow will help you achieve maximum effectiveness with minimum complexity.

ISO 14001 requires that organizations *establish, implement, and maintain* procedures to identify environmental aspects, but because this is a DA implementation metric, we *strongly recommend* that you develop written documentation for these procedures to help ensure consistency and understanding.

Step 16. Identify all mission and installation activities, products, and services.

Activities, products, and services provide the basis for identifying environmental aspects and impacts. In Step 9, the CFT members identify and document the installation-level mission priorities. Knowing these priorities and the associated sustainability initiatives greatly facilitates the accomplishment of this step.

This step will particularly challenge the CFT because of the sheer number of organizations on an installation and the variety of missions and functions they undertake. Executing assigned missions and functions usually involves undertaking a number of different activities; procuring, using, and developing specific products; and providing services daily in support of the operational readiness mission and routine base operations functions.

MISSION OR FUNCTIONAL AREAS AND ASSOCIATED PROCESSES

To identify your installation activities, products, and services, follow the simple hierarchy below.

Mission or functional area	→	Associated processes	→	Activities, products, and services

Before defining activities, products, and services, you need to understand the various mission and functional areas and associated processes that both tactical and nontactical organizations undertake across the installation. Table 2-3 shows typical mission and functional areas and associated processes at the installation level.

ACTIVITIES, PRODUCTS, AND SERVICES

Within each mission or functional area, a number of major processes are likely. For example, in the vehicles and transportation functional area, a typical installation process is to conduct vehicle maintenance operations. At the next level, conducting vehicle maintenance operations might involve a number of specific activities, products, and services.

> Because virtually all Army installations have motor pools that perform some level of vehicle maintenance, we use this process as our example in the following steps as we identify activities, products, services, and their associated aspects and impacts and develop objectives, targets, and environmental management programs to manage and control the significant aspects.

Table 2-3. Mission or Functional Areas and Their Processes

Mission or functional area	Description of associated processes
Weapons system acquisition	Major systems acquisition phases of concept and technology development, system development and demonstration, production and deployment, operations and support, and demilitarization and disposal. *Example: Demilitarization and disposal of excess or waste munitions*
Logistics support	Acquisition, storage, distribution, and recovery of all classes of supply; maintenance of materials and equipment; transportation of personnel and materiel; property disposal. *Example: Ammunition supply operations*
Military training Click here to view the range guidance	Providing and conducting individual, functional, and organizational (tactical and nontactical) training. *Example: Basic Infantry Training*
Public works	Maintaining and operating the total system of facilities; buildings; structures; horizontal transportation facilities (roads, railroads, bridges, dams, and airfields); utility, transport, and communication systems; ranges and other training areas; ports; airfields; and associated lands and equipment. *Example: Road maintenance*
Industrial operations	Manufacture of commodities, equipment, and weapons systems. *Example: Manufacture of small arms ammunition*
Community and troop support	Providing basic necessities to the on-post population—housing, dining facilities, commissaries, laundries, etc. *Example: Providing and maintain housing*
Medical and laboratory support	Providing general health care and medical and dental support to personnel, as well as the operation and maintenance of Army hospitals, medical centers, dental and veterinary clinics, medical treatment facilities, and supporting laboratories. *Example: Providing outpatient medical and dental services*
Vehicles and transportation	Operation of tactical and nontactical vehicles, rail systems, watercraft, and supporting maintenance operations. *Example: Perform vehicle maintenance*
Aircraft and flight operations	Aircraft or airport operations *Example: Helicopter takeoff and landing operations*
Recreation management activities	Morale, welfare, and recreation (MWR) and other recreational activities provided for soldiers and their families. *Example: Operation of beaches and swimming pools*
Research, development, testing, and evaluation (RDT&E)	Testing and evaluation of materiel, equipment, and weapons systems at Army proving grounds, laboratories, and related facilities. *Example: Development of new flameless ration heater*
Natural resource management	Restoring, maintaining, and protecting natural resources on Army lands. *Examples: Timber harvesting and forest management*

Note: The list is not all inclusive and varies from one installation to another.

Activities related to vehicle maintenance include mechanical repair and maintenance and body repair and painting. Products that might be used or provided include oil, solvents, grease, paints, and repair parts.[21] Provided services could include vehicle washing and operator maintenance training.

Examples of processes in the public works functional area are wastewater treatment, heat generation, and waste disposal. Activities include operating a wastewater treatment plant or septic tanks, a boiler plant or residential boilers, and a sanitary landfill or a waste to energy incinerator. Possible products produced include treated waste water, sludge, and steam, and products used include water, fossil fuels, and various chemicals. Provided services include electric power and recycling.

As illustrated by these examples, "activity" generally refers to a *major* element of a process undertaken to achieve the mission, a desired objective, or end state. "Product" refers to any commodity or item used, consumed, or created (for example, ammunition manufactured at an industrial facility) during a process. "Service" refers to useful labor or efforts that do not necessarily produce a tangible commodity, but otherwise provide value to a customer.

A fine line distinguishes an activity, product, or service. What one views as an activity, another may see as a product or service. The CFT needs to determine the level of detail that supports the analyses without it becoming a burden to the installation. Do not allow this to become problematic. On an Army installation, focusing on "activities" usually works. Identifying all key elements of the major installation processes for subsequent use in aspects and impacts analysis is the key.

A. Determine the scope.

Clearly, the total number of processes, activities, products, and services on the typical installation can be very large. At least one Army installation reports having identified over 600 activities across all mission and functional areas, possibly because the compilers went into too much detail or listed specific tasks as activities. The goal is to keep the number of activities as concise as possible by identifying major processes where practicable. Although the total number of activities may seem large at first, many of them are similar. For example, most installations have numerous motor pools or vehicle maintenance facilities. Grouping similar installation-wide activities, such as vehicle maintenance or forestry management, makes the task more manageable.

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[21] Products can also be defined as tangible results of a process that turns inputs (such as raw materials) into outputs (such as a weapons system).

In previous versions of this guide, the examples gave a more detailed view of activities, products, and services. For example, our previous version used "changing fluids" as an activity, but we now use the more general "vehicle mechanical repair and maintenance". Either approach is acceptable, but the farther down you go into an operation you in defining the activity, product, or service, the larger the number is that needs to be evaluated and managed.

More realistic is 100 to 200 activities, but even that relatively small number engenders much work completing the aspects and impacts analysis and subsequent EMS implementation steps. For this reason, installations may decide to limit the scope of initial EMS implementation to one or two mission or functional areas, and then gradually expand the EMS to the other areas. Fort Lewis, WA, took this approach by starting EMS implementation in the DPW. Now that the complete system is in place at the DPW, Fort Lewis is working to include other organizations and functions across the installation.

Regardless of your approach, you must ensure that all missions and installation organizations, activities, and tenants are covered under the broad umbrella of the fenceline-to-fenceline installation EMS by 31 December 2005.

B. Compile key information.

To do a thorough job of identifying all installation activities, products, and services, start by compiling key information, first at the process level and then working down to the activities associated with each process. Identify every organization (tactical and nontactical) that resides in the installation fence line, including subinstallations. (You accomplished this in Step 9 when you identified mission focus.)

Once you have identified every organization, you should learn as much as possible about their assigned missions, functions, and inherent processes. (Again, you should have already done much of this in Step 9.) For example, you should already have copies of tactical unit mission statements and appropriate METLs or Army readiness training evaluation programs (ARTEPs). The METLs and ARTEPs in particular provide a wealth of information about the primary processes and activities involved in mission execution and maintaining operational readiness. You should be able to obtain similar mission and function information from nontactical support organizations, in hard copy or by interviewing key personnel. On industrial installations, contractual documents for GOCO facilities can provide valuable information for this effort. National Environmental Policy Act (NEPA) documents and other historical assessment records can also assist in defining processes and associated impacts and aspects.

Identify all missions, functions, processes, and activities subject to environmental regulations or permits. Members of the environmental staff can assist.

Most installations have numerous documents that can help in identifying the major missions and associated activities, products, and services. These documents include previous audits and inspection reports, pollution prevention plans, integrated natural resource management plans, storm water management plans, spill plans, and energy and water usage records. If your installation has implemented activity-based costing (ABC), documentation developed during ABC implementation can provide most of the information you need for the entire installation in a single package. In addition, this guide includes a matrix of typical DoD installation major processes and activities. Click here to view the matrix. Reviewing the major processes and activities that Fort Lewis identified in its analysis can also help.

USAEC has developed the *Environmental Management Systems Aspect and Impact Methodology for Army Training Ranges.*[22] Click here to view the range guidance. This document can be used in listing missions and activities associated with range operations. ACSIM has provided guidance on the use of this document by installations that conduct training activities on their operational ranges. At minimum, the analyses must capture range-specific facility category codes (FCCs). Click here to view the ACSIM memo.

The EPAS program continues to evolve as a useful tool that an installation should consider as a source of information when identifying its activities, products, and services. As installations perform their annual internal compliance inspections, they will begin to populate and verify the facilities, activities, and tasks (FAT) list within the EPAS software. The FAT list is a logical method that the installation can customize to drill down from the installation level to a single fundamental task, activity, or process that interacts with the environment. The FAT helps to group tasks at the appropriate level of detail to facilitate an effective and efficient aspect and impact analysis. The installation's FAT list can serve as a starting point for identifying all of the installation's activities and services. Leveraging the information contained in the EPAS program can help integrate traditional compliance programs into your installation's EMS.

You can assign responsibility for specific mission or functional areas to CFT members. When feasible, CFT experts in functions (such as logistics, operations, and training) should be assigned responsibility for compiling information on those functional areas. Unfortunately, since the number of functional areas usually exceeds the number of CFT members, some members must compile information on areas with which they are less familiar. They have to do the best they can by gathering as much information as possible with the time and resources available. Regardless

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[22] USAEC, *Environmental Management Systems Aspect and Impact Methodology for Army Training Ranges*, March 2004.

of the approach and sources used, the goal is to compile a comprehensive listing of all *major* activities, products, and services by mission or functional area and process.

C. Capture information and keep records.

The CFT members need to compile activities, products, and services for their assigned mission or functional areas using a simple Excel spreadsheet to capture information. This will enable the CFT to readily compile, revise, and manipulate information to perform various analyses or future revisions. When compiling the list of activities, products, and services, you need to document their location by unit, organization, or building number. This is especially important for activities such as vehicle maintenance because numerous motor pools may be conducting similar activities on the installation.

Step 17. Identify the environmental aspects of your installation's activities, products, and services that can be controlled or influenced.

Once you've listed the installation's major activities, products, and services, you identify the environmental aspects associated with them. ISO 14001 defines environmental aspects as "elements of an organization's activities, products, and services which can interact with the environment." An environmental aspect signifies the potential for an environmental impact, whether good or bad.

Environmental aspects are the cause component of a cause-and-effect relationship (the resulting environmental impact is the effect, discussed in the next step). Generally, the environmental aspects of Army installation activities, products, and services fall into one or more of the following categories:

- Air emissions (vapor, particulate matter, or gas)

- Waste generation (hazardous, solid, or other special waste products)

- Discharges, spills, or other releases (leaching) to soil or the surface or ground water, including intentional applications of pesticides, fertilizers, and herbicides

- Noise, vibration, heat, light, or radiation generation

- Natural resource or ecological system alteration (conservation or consumption)

- Cultural resource alteration (conservation or degradation)

- Energy consumption (depletion or conservation).

The range guidance lists environmental aspects similar to those above. Click here to see these aspects. Both lists have examples of generic environmental aspects, but you can define your aspects as you deem appropriate for your situation.

QUALIFYING ASPECTS

Qualifiers can help in determining how you identify and manage your environmental aspects. Qualifiers are a logical partitioning of an aspect to effectively manage the programs. For instance, the aspect of waste generation may have three major divisions: nonhazardous waste, hazardous waste, and regulated medical waste, and particular waste types are

further identified as necessary. The qualifiers are used for two purposes: first, to help manage this aspect in the future and, second, to help identify the issue that caused this activity to warrant further analysis. Qualifiers should be detailed enough to provide clarity or meaning to an aspect, but you should avoid becoming too detailed, which can make the analysis unmanageable.

As you develop the aspects associated with each activity, product, or service, you become more specific. For example, rather than listing the aspect as "air emissions," you list the actual contaminants emitted. Each of the specific air emissions (VOCs, SOx, particulate matter, etc.) represents a separate environmental aspect. Likewise, rather than listing "waste generation" as the aspect, you may want to list specific wastes or categories of wastes generated (domestic solid waste, solvents, asbestos, etc.). Each represents a different aspect. A more specific listing of aspects is necessary when different risks and associated management requirements pertain to each of the aspects. For example, the risks and associated management requirements for domestic solid waste greatly differ from those for a listed hazardous waste.

CONSOLIDATING ASPECTS

In most cases, the environmental aspects from installation-wide or similar activities should be the same. When similar activities have the same environmental aspect, they can be grouped together or consolidated and assessed as one environmental aspect. For example, if all the vehicle maintenance activities have VOC emissions, the cumulative effect of this aspect can be evaluated. When you consolidate environmental aspects, you have to evaluate the cumulative impact rather than the impact from each individual aspect. This may create a greater impact, which we discuss in the next step when we look at the impacts associated with each aspect.

Situations may arise where the aspects for similar activities, such as vehicle maintenance, differ—but this should be the exception. Environmental aspects for similar activities may differ, for example, because of differences in location, proximity of sensitive wildlife or impaired watersheds, or operations conducted within the activity.

> **Time-Saving Tip**
> When possible, group the same environmental aspects from similar activities together and evaluate them collectively.

Using our motor pool example, consider the environmental aspects of vehicle maintenance activities, products, and services presented and discussed in . Table 2-4 summarizes them.

Table 2-4. Environmental Aspects of Vehicle Maintenance Activities

Activity, product, or service	Environmental aspects (qualifiers)
Mechanical repair and maintenance (Building 5100)	Air emissions (VOCs)
	Noise generation
	Waste generation (solvents)
	Discharges, spills, or other releases to soil or surface or ground water (oils and grease)
	Energy consumption
Body repair and painting (Building 5100)	Air emissions (VOCs)
	Noise generation
	Waste generation (solvents)
	Discharges, spills, or other releases to soil or surface or ground water (oils and grease)
	Energy consumption
Vehicle washing (Building 5125)	Waste generation (domestic solid waste)
	Discharges, spills, or other releases to soil or surface or ground water (oils and grease)
	Energy consumption
	Natural resource alteration (potable water use)

Table 2-4 does not completely list aspects associated with vehicle maintenance facilities. It is simply an example of some of the qualifiers that would be associated with these facilities. In the example, we selected one specific qualifier (VOCs) for the air emissions aspect, but additional qualifiers may be associated with the air emission aspect, such as particulate matter, nitrogen oxides (NO_x), or sulfur oxides (SO_x). Similarly, the environmental aspect of waste generation may have, in addition to solvents, domestic solid waste and other listed categories of hazardous waste. You are only required to identify the aspects (and related impacts) that you can control or influence.

STRATEGIES FOR IDENTIFYING ENVIRONMENTAL ASPECTS

Now that you understand environmental aspects in general terms, what is the best way to go about identifying them? Once again, you primarily rely on the CFT members who are identifying the activities, products, and services information. In instances when they are in fact mission or functional area experts, they should be able to readily identify the environmental aspects for the various activities, products, and services. If they are not experts themselves, then they have to consult other installation experts and have them describe how their activities, products, and services may interact with the environment. In addition, other information sources are available to gain insight into environmental aspects:

- Physical walk-through of the facilities

- Previous aspects and impacts evaluations

- Process flow charts and hazard analyses

- Air emissions inventories

- NEPA studies (environmental assessments or environmental impact statements)

- Product economic analyses

- Design for the environment (DFE) documentation

- Facility pollution prevention and waste minimization audits

- EPAS reports and corrective action plans

- Environmental site assessments

- Risk assessments

- Environmental cost accounting records

- Project safety and hazard reviews.

PROCESS FLOW CHARTS

It may be helpful to prepare simple process flow charts that capture inputs and outputs for the various activities, products, and services. For example, Figure 2-3 shows a logistics process, fuel storage and dispensing operations, which includes the activities of fuel receipt, storage, and shipping and dispensing.

*Figure 2-3. Fuel Storage and Dispensing Operations*
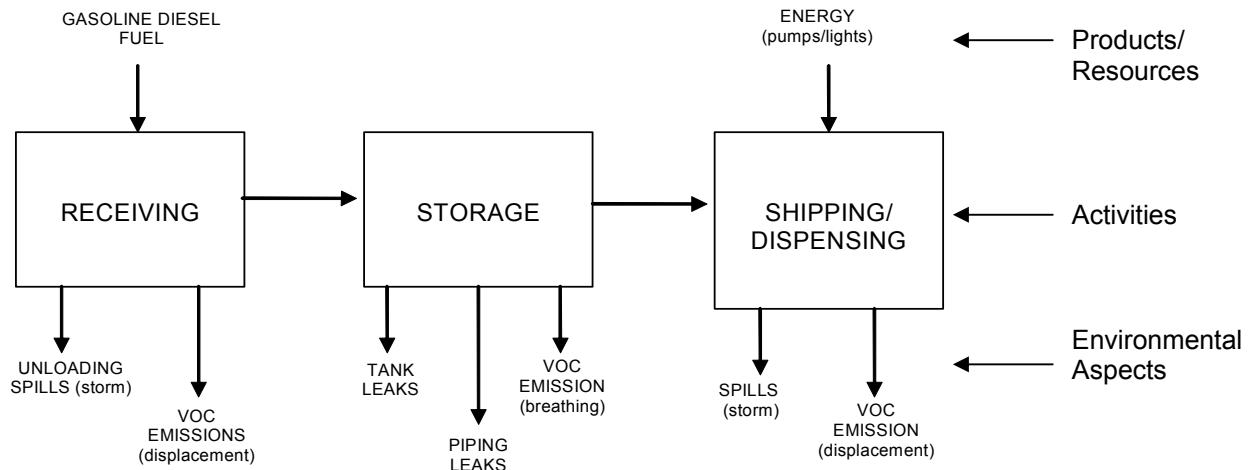
Figure 2-3 shows the products or resources used in the process, specific activities, and resulting environmental aspects associated with each activity. By laying the process out in this way, you can easily conceptualize the resource inputs to each activity and the environmental aspects, or the manner in which each activity interacts with the environment. Using this approach is purely a matter of preference.

TIPS AND TOOLS

Regardless of your approach, as you identify specific aspects, you should try to capture as much related quantitative information as possible. For example, if an activity generates waste solvent, estimate the total amount (for example, 100 gallons per month). Quantitative information helps in evaluating the risk or impact of the aspect. For example, a 100-gallon solvent spill has the potential for a much greater risk or impact than a 1-gallon spill. Likewise, the individual air emissions for small sources such as individual housing units do not have the same potential risk or impact as the emissions from a central heating plant.

As you identify environmental aspects, you must include *all* mission and functional areas. A key mission area you must evaluate is the training that supports METL and ARTEP skills. Click here to view a tool specifically designed to identify the activities and associated aspects for training and range operations. Click here to view a matrix that outline typical cantonment area activities and associated aspects.

Click here to view a sample environmental aspects worksheet completed for one of the previously presented vehicle maintenance activities.

Step 18. Identify the environmental impacts of each aspect.

Once you have identified the environmental aspects of the installation's major activities, products, and services, you then identify the environmental impacts associated with them. ISO 14001 defines an environmental impact as "any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspect". For example, Table 2-5 summarizes some of the environmental aspects and impacts of the vehicle maintenance activities, products, and services discussed in Steps 16 and 17.

Table 2-5. Environmental Aspects and Impacts of Vehicle Maintenance Activities

Activity, product, or service	Environmental aspect	Environmental impact
Mechanical repair and maintenance (Building 5100)	Air emissions (VOCs)	Air pollution (ozone depletion)
	Noise generation	Nuisances to surrounding communities
	Waste generation (solvents)	Increased hazardous waste generation and storage
	Discharges, spills, or other releases to soil or surface or ground water (oils and grease)	Surface or ground water contamination (decrease in dissolved oxygen levels)
	Energy consumption	Energy source depletion
Body repair and painting (Building 5100)	Air emissions (VOCs)	Air pollution (ozone depletion) Surface water contamination (increased toluene concentration from discharged scrubber water)
	Noise generation	Nuisances to surrounding communities
	Waste generation (solvents)	Increased hazardous waste generation and storage
	Discharges, spills, or other releases to soil or surface or ground water (oils and grease)	Surface or ground water contamination (decrease in dissolved oxygen levels)
	Energy consumption	Energy source depletion
Vehicle washing (Building 5125)	Waste generation (domestic solid waste)	Increased solid waste storage requirements
	Discharges, spills, or other releases to soil or surface or ground water (oils and grease)	Surface or ground water contamination (decrease in dissolved oxygen levels)
	Energy consumption	Energy source depletion
	Natural resource alteration (potable water use)	Source water depletion

As illustrated by this example, environmental impacts are the effect component of a cause-and-effect relationship. Similar activities, such as vehicle maintenance, may have some common environmental impacts, but do not automatically assume this to be the case. Site-specific situations, such as where storm water drains or proximity to other activities or installation boundaries, may alter the impact from similar activities. Generally,

the environmental impacts of Army installation activities, products, and services include the following:

- Air pollution and associated reductions in environmental quality (such as ozone depletion)

- Surface and ground water contamination

- Soil contamination or alteration

- Increased solid or hazardous waste treatment, storage, and disposal

- Energy source/natural resource depletion (or conservation)

- Cultural resource damage or destruction

- Damage to the natural environment (such as ground disturbance, erosion, tree and vegetation loss, and disturbance or destruction of wildlife and their habitats)

- Nuisances to surrounding communities.

Like the environmental aspects, these are general categories of impacts (such as air pollution); you need to identify more detailed impacts that reflect your site-specific situation (such as ozone depletion or increased NOx levels). Each environmental aspect can potentially create a number of different impacts. This is shown in the body repair and painting activity example, where the air emissions (VOCs) result in multiple impacts. Click here to see the list of typical environmental impacts in the range guidance.

Above, we list generic environmental impacts. Different organizations are likely to have different environmental impacts for the same environmental aspect. The impact to the installation for the aspect of generating domestic solid waste may be increased storage requirements, whereas the impact for the activity that disposes of the solid waste may be reduced landfill space, surface or ground water contamination, or increased air pollution (if the waste is incinerated).

STRATEGIES FOR IDENTIFYING ENVIRONMENTAL IMPACTS

Now that you have a general picture of environmental impacts, what is the best way to identify them? As with previous steps, the expertise you need primarily resides with the CFT members. Representatives from the environmental functional area probably know the most about environmental issues, applicable regulatory requirements, resource (air, water, soil) sensitivities to harmful emissions or discharges, local community concerns, etc.

One approach is to have the environmental staff members facilitate a structured CFT brainstorming session to analyze each aspect for potential impacts, including a team review of the activities involved and process inputs and outputs. Although some team members are not environmental professionals, with a little probative questioning and group discussion, those who know the activity itself should be able to lend insight into how it affects the environment. Have a staff member take detailed minutes of the discussion, review decisions, and action items.

The CFT should work through the process by mission and functional area, capturing the results as they are developed. For example, begin by looking at the logistics support mission and functional area, evaluating each activity, product, and service and its identified environmental aspects. After you identify and document all associated environmental impacts, move on to the next mission and functional area (for example, training).

As you did when identifying activities and their associated environmental aspects, group installation-wide or similar impacts together when feasible. In most cases, the impacts will be the same from similar activities. However, be conscious of factors—such as geographical location, proximity of sensitive wildlife or impaired watersheds, or differences in specific processes—that may lead to different impacts from similar activities. Evaluating the impacts from similar activities collectively results in a more efficient aspect and impact analysis.

DOCUMENTING POSITIVE IMPACTS

ISO 14001 defines an environmental impact as "any change to the environment, whether adverse or beneficial." Although the aspect and impact analysis is inherently focused on identifying risks, you should also attempt to identify any potential positive impacts to the environment. For example, the installation may decide to let a 50-foot buffer strip grow alongside a stream. This can have a positive impact on the environment, such as reducing storm water flow and sediment loading to receiving waters. Another activity is controlled burning, which may have both negative impacts (air pollution) and positive impacts (improved wildlife habitat). In this case, both impacts need to be identified. Positive impacts actually improve the

environment, not just minimize a negative impact. For example, recycling paper is not a positive impact because it simply lessens the negative impact of generating solid waste.[23]

> **Positive Impacts**
> Identifying and documenting positive impacts allows them to be incorporated into your environmental management programs and systematically managed.

As in previous steps, compile your results on a spreadsheet. Click here to view a sample environmental aspects and impacts worksheet with a few data entries for the vehicle maintenance process. This spreadsheet includes columns on the far right used to evaluate the significance of environmental impacts and related aspects. You should ignore those columns until you get to the next step.

EVALUATING CUMULATIVE ENVIRONMENTAL IMPACTS

After identifying the impacts associated with all the activities, products, and services, review the list and group identical impacts (such as nitrate contamination of surface water). In Step 19, we consider whether these individual impacts should be evaluated as a cumulative impact on the environment. In some cases the impacts from individual activities may not seem significant, but when evaluated cumulatively their impacts may be much greater.

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[23] See Note 22.

Step 19. Identify significant environmental aspects.

Once you have identified all environmental aspects and associated impacts for your activities, products, and services, you determine which environmental aspects are *significant.* Although the ISO 14001 standard does not require documenting the procedure, we recommend that you do so to ensure consistency in execution. Click here to view a sample procedure for identifying significant environmental aspects.

A significant environmental aspect is one that has or can have significant environmental impact. As stated earlier, your significant environmental aspects form the basis for developing objectives and targets (Step 20) and establishing your EMPs (Step 21) to achieve those objectives and targets.

ISO 14001 does not specify how an organization should determine which impacts are significant because the relative significance of an impact can vary widely from one organization to another, depending on environmental and business concerns and other site-specific considerations. However, the ISO 14004 companion document to ISO 14001 does list several environmental and business-related factors that an organization can consider in evaluating the significance of an environmental impact, including the following:

- Environmental considerations

  - ➤ Scale or quantity of the impact

  - ➤ Severity of the impact or potential impact

  - ➤ Probability of occurrence

  - ➤ Duration of the impact

  - ➤ Frequency of the impact or potential impact

  - ➤ Location of the facility (for example, in an environmentally sensitive area)

  - ➤ Scope of the impact (local, regional, or global)

- Business considerations

  - ➤ Potential regulatory and legal exposure

  - ➤ Difficulty of changing the impact

  - ➤ Cost of mitigating the impact

> ➤ Effect of change on other activities and processes

> ➤ Concerns of interested parties

> ➤ Effect on the organization's public image

> ➤ Return on investment of the cost to mitigate the impact.

Army installations must also consider the affect on mission accomplishment, and its sustainability goals and initiatives, of any restrictions imposed because of the impact (for example, operational noise levels may restrict your ability to fire weapons, conduct demolition training, or employ aircraft).

CUMULATIVE IMPACTS AND SIGNIFICANCE

Identifying and addressing impacts that may have a cumulative effect—especially when a large number of different activities, products, or services produce a common impact—is important. Individually, the impacts from these activities may be low, but in some cases, the cumulative impact may be significant. The assessment of cumulative impacts is an installation-specific determination.

Air emissions are an environmental aspect that typically results in cumulative environmental impacts. Air emissions from individual sources such as housing heating units or individual industrial operations such as paint spray booths many not be significant but collectively may have a significant impact. Another example of an environmental impact that may become more significant when evaluated cumulatively is storm water discharges from individual activities. When the impact of these individual discharges is evaluated cumulatively at the point they merge and enter a receiving water or leave the installation, it may be significant.

Addressing cumulative impacts is critical because compliance with the provisions of many of an installation's permits is based on the installation's impact on the environment. Clean Air Act Title V permits are installation-wide permits based on the installation's cumulative impact on the air quality. Clean Water Act National Pollutant Discharge Elimination System (NPDES) permits specify discharge limits to receiving waters from installation outfalls that may result from numerous activities on the installation. Although we monitor the emissions or discharges from individual activities for internal operational controls, many of our compliance requirements are based on cumulative impacts from numerous activities.

IDENTIFYING RATING FACTORS AND NUMERICAL RATINGS

A commonly used approach to determining the significance of environmental impacts employs a simple numerical rating system. You identify a

number of rating factors (considerations), define numerical ratings, and use an algorithm incorporating those factors and ratings to calculate a significance score for each impact. You then can sort and rank impacts by a relative significance score and make a combination of objective and subjective judgments to determine the significant impacts.

The greater the number of rating factors used, the more difficult it is to develop an easy-to-use, structured process for impact evaluation. As a starting point, try limiting the number to five. Good choices are the following:

- Environmental impact frequency or likelihood

- Environmental impact severity

- Mission impact severity (if the impact constrains the mission or if the organization cannot perform, produce, or provide the activity, product, or service at all)

- Regulatory impact

- Community concerns.

You can select the rating factors you deem appropriate, but the above rating factors are consistent with, and support, *The Army Strategy for the Environment* triple bottom line of sustainability: mission, environment, and community.

After selecting your rating factors, define the numerical ratings that apply. For the five rating factors shown above, Tables 2-6 through 2-10 suggest some numerical ratings. You can modify these as appropriate on the basis of your unique situation or experience.

FREQUENCY OR LIKELIHOOD

The probability that an impact might occur, or how often it actually occurs, affects the significance of the impact. **We are evaluating the frequency or likelihood of the impact occurring, not the frequency of the activity that is causing the impact.** Table 2-6 suggests a numerical rating for the frequency or likelihood of environmental impacts.

Table 2-6. Sample Rating Factors for Frequency or Likelihood of Environmental Impact

Frequency or likelihood (F) scale
5 = Continuous—ongoing or daily.
4 = Frequent—more than once per month.
3 = Infrequent—more than once per year, less than once per month.
2 = Rare—once every year or two.
1 = Never—never or highly unlikely.

ENVIRONMENTAL IMPACT SEVERITY

Table 2-7 suggests a numerical rating for scoring the potential severity of environmental impacts, assuming they occur. When evaluating environmental impact severity, consider the following:

- Proximity of the impact to people or environmentally sensitive areas

- Toxicity of substances involved

- Quantities of substances involved

- Effects from startup and shutdown conditions

- Duration of exposure or effects

- Size of the area affected

- Potential for migration of the hazard.

Table 2-7. Sample Rating Factors for Severity of Environmental Impacts or Consequences

Environmental impact severity (E) scale
5 = Severe—immediate threat likely to result in widespread damage to human health or the environment and requiring great effort to remediate or correct.
4 = Serious—no immediate health threat, but likely to significantly damage the environment and difficult but possible to remediate.
3 = Moderate—somewhat harmful, but correctable.
2 = Mild—small potential for harm to environment, correctable.
1 = Insignificant—trivial consequences, easily correctable or not impact.

MISSION IMPACT SEVERITY

In Table 2-8, the rating factors describe how the mission would be affected if the environmental impact actually occurred (for example, groundwater was contaminated by a fuel spill). The severity of the impact on mission accomplishment can be influenced by the following:

- Priority or importance of the impacted missions (Step 9)

- Restriction of specific activities (digging, using smoke, etc.)

- Duration restrictions (such as limiting boiler operations to 12 hours per day)

- Permanent versus temporary closure or restrictions of training areas or industrial processes

- Availability of alternative training sites or training techniques.

Table 2-8. Sample Rating Factors for Severity of Mission Impacts

Mission impact severity (M) scale
5 = Loss of ability to accomplish critical mission or near mission failure.
4 = Severely degraded mission capability or serious mission restrictions.
3 = Moderate mission restrictions.
2 = Minor mission impacts or restrictions.
1 = Insignificant mission impacts or restrictions and alternative courses of action available.
0 = No mission impacts or restrictions.

REGULATORY IMPACT

Table 2-9 suggests a numerical rating for evaluating the regulatory impact. ISO 14001:2004 emphasizes evaluating compliance with applicable legal and other requirements. When evaluating regulatory impact, consider the following:

- Federal, state, and local statutes and regulations

- Federal, state, and local permit requirements or compliance agreement provisions

- Host nation statutory requirements and agreements

- Executive orders

- Army and DoD regulations, policies, and directives.

Table 2-9. Sample Rating Factors for Regulatory Impact

Regulatory impact (R) scale
4 = Federal, state, or host nation statutory requirements or regulations apply.
3 = Likely to be regulated in future by federal, state, or host nation agency.
2 = Army or DoD requirements apply.
1 = Best management practice (BMP) applies.
0 = No requirements apply.

COMMUNITY CONCERNS

When determining the community concern ratings in Table 2-10, consider the following actions or situations:

- Lawsuits

- Obstruction efforts

- Negative or positive press coverage

- Number and scope of citizen complaints

- Community-generated political or regulator interest

- Level of positive interaction with the local community.

Table 2-10. Sample Rating Factors for Community Concern

Community concern (C) scale
4 = Public outcry or lawsuits.
3 = Serious community concern, political or activist inquiries, intense negative media.
2 = Moderate community concern, some media coverage.
1 = Community not currently concerned, but could become so.
0 = Community ambivalent or unconcerned.

CALCULATING IMPACT SIGNIFICANCE SCORE

Calculate the impact significance score (*SS*), in the following example, as

SS = *frequency* × (*environmental impact severity* + *mission impact severity*) + *regulatory impact* + *community concern.*

With the rating factors shown, the maximum possible *SS* for any given impact is

$$5 \times (5 + 5) + 4 + 4, \text{ or } 58.$$

The range guidance contains directions for determining significance that are almost identical to the method presented here. Click here to see the range guidance on determining significance.

Using our vehicle maintenance operations example, we would score each of the environmental impacts we identified. This may seem like a cumbersome or time-consuming process, but you will discover—once you have scored a few impacts and get comfortable with the process—that you can score them rather quickly. You may be able to combine some of the impacts; for example, if a common air pollutant or waste material is generated from both vehicle mechanical repair and maintenance and body repair and painting, you may be able to score them collectively.

Let's determine a significance score for the VOC air emissions from our vehicle maintenance operation. In this situation, the vehicle mechanical repair and maintenance and body repair and painting are in the same building and can be scored cumulatively. When you score the VOC emissions, you do so for a specific environmental impact or air pollutant, which in our example is ozone depletion. The vehicle maintenance facility routinely operates 5 days a week during normal duty hours, and the VOC emissions occur primarily from the paint spray booth, which is operated a few times during the month but not continuously. The paint spray booth has a water scrubber on the exhaust air and is included in the installation's Clean Air Act Title V permit. VOC emissions from other motor pool operations, such as solvent use, are not controlled. You are located in a nonattainment area for ozone; consequently, your operations are under considerable regulator scrutiny. No major issues about your motor pool operations exist within the surrounding community.

Applying the appropriate rating for each of the five factors yields the following:

SS = *frequency* × (*environmental impact severity* + *mission impact severity*) + *regulatory impact* + *community concern.*

$$SS = 4 \times (3 + 3) + 4 + 0 = 28.$$

Table 2-11 (page 2-72) shows the score from this example. Similarly, you would score the remainder of the impacts and enter the scores into the table. Because the two vehicle maintenance activities are located in the same building, you may be able to combine some of the impacts as we did for the VOC emissions and score their collective impact. Consider the cumulative effect from similar environmental impacts such as discharges or spills to a common receiving water that may occur from activities other than the motor pool.

As in all previous steps, you should record the results of significance scoring as we have done on Table 2-11. Click here to view the example aspects and impacts worksheet presented earlier with a few sample entries (the spreadsheet calculates the significance score automatically on the basis of the values you input). Ignore the far right column on the worksheet until you get to the end of this step.

DETERMINING SIGNIFICANT IMPACTS

Once you determine the significance score for each impact, you then decide which impacts are in fact significant.

Because ISO 14001 emphasizes compliance with legal and other requirements, we strongly recommend that environmental impacts subject to statutory requirements or regulations (score of 4) be considered significant regardless of the overall significance score.

Likewise, if an environmental impact has the potential to severely degrade mission capability or create serious mission restrictions (score of 4 or higher), we strongly recommend that it too be considered significant regardless of the overall significance score.

In addition to determining significance by regulatory or mission impact, you should rank all impacts by significance score and sort them from high to low. This ranking helps identify those that are not regulated and don't have significant mission impacts but that still may be significant and helps establish priority among all the significant impacts and aspects.

You have considerable flexibility in determining the impacts and aspects that are significant, but you need to document the procedure you use to determine significance. You can set a threshold (such as *SS* = 25) at or above which the *SS* is significant. Using this approach, our example (VOC air emissions) would result in a significant impact designation (degraded air quality or ozone depletion) because of a score of 28.

The impacts associated with the environmental aspects of waste generation and spills and discharges to receiving waters are regulated as part of the installation Resource Conservation and Recovery Act (RCRA) or

NPDES permits. If we use the criteria that any environmental impacts subject to regulatory requirements are significant (score of 4), these impacts would be considered significant. Likewise, the impacts associated with the VOC air emissions would also be considered significant on the basis of being regulated under the installation's Clean Air Act Title V permit. Tracking this back to the associated environmental aspects would then result in air emissions (VOCs), spills (oils and grease), and waste generation (solvents) being significant aspects as shown in Table 2-11. When you determine the significant environmental impacts at your installation, you are doing so for the specific air pollutants and wastes generated that have the potential to discharge or spill into receiving waters.

This approach can be applied to any individual rating. For example, you might decide that any actual or potential impact receiving one or more ratings as follows would be considered significant regardless of its overall significance score:

- Environmental impact severity rating of 4 or higher

- Mission impact rating of 4 or higher

- Regulatory impact rating of 4 (anything regulated is significant)

- Community concern impact rating of 3 or higher.

The scoring system is a useful tool in this process, but you are not obligated to use the numerical scores as the sole criteria for determining significance. Use good judgment, and tailor the system to your needs.

Table 2-11. Recording the Significance Score

Activity, product, or service	Environmental aspect	Impacts	Significance score[a]						Overall significance (>25)
			Frequency	Environmental severity	Mission impact	Regulatory impact	Community concerns	Overall score	
Vehicle mechanical repair and maintenance (Building 5100)	Air emissions (VOCs)	Air pollution (ozone depletion)	4	3	3	4 (Sig)	0	28 (Sig)	Significant
	Noise generation	Nuisances to the surrounding community	2	2	1	0	1	7	
	Waste generation (solvents)	Increased hazardous waste generation and storage	4	3	1	4 (Sig)	1	21	Significant
	Discharges and spills (oils and grease)	Surface or ground water contamination (decrease in dissolved oxygen content)	2	3	2	4 (Sig)	1	15	Significant
	Energy consumption	Energy source depletion	5	1	1	1	0	11	
Body repair and painting (Building 5100)	Air emissions (VOCs)	Air pollution (ozone depletion)	4	3	3	4 (Sig)	0	28 (Sig)	Significant
		Surface water contamination (increased toluene concentration from discharged scrubber water.)	3	3	1	2	0	14	
	Noise generation	Nuisances to the surrounding community	4	3	1	1	1	18	
	Waste generation (solvents)	Increased hazardous waste generation and storage	4	3	1	4 (Sig)	1	21	Significant
	Discharges and spills (oils and grease)	Surface water contamination (decrease in dissolved oxygen content)	2	3	2	4 (Sig)	1	15	Significant
	Energy consumption	Energy source depletion	5	1	1	1	0	11	
Vehicle washing (Building 5125)	Waste generation (domestic solid waste)	Increased solid waste storage requirements	5	1	0	4 (Sig)	0	9	Significant
	Discharges and spills (oils and grease)	Surface water contamination (decrease in dissolved oxygen content)	5	2	0	4 (Sig)	1	15	Significant
	Energy consumption	Energy source depletion	5	1	1	1	0	11	
	Natural resource alteration (potable water use)	Source water depletion	5	2	2	1	1	22	

[a] *Significance score (SS) = frequency $\times$ (environmental impact + mission impact) + regulatory impact + community concern).*

2-72

DETERMINING SIGNIFICANT ASPECTS

As stated earlier, significant aspects are simply those that you determine to have significant impacts. All you have to do at this point is to apply your chosen approach to each impact and then document the results in the far right column of the aspects and impacts worksheet (click here).

> **Reminder**
>
> You have considerable flexibility in determining the impacts and aspects that are significant, but the Army recommends you document the procedure you use.

REVIEWING AND UPDATING SIGNIFICANT ASPECTS

The installation must have a process to systematically identify changes in activities, products, and services that might drive changes to the installation's significant aspects. Review all functional areas and processes at least annually to identify any changes. Ask the functional area experts to identify any new processes or activities, products, or functions that have not been subjected to an aspect and impact analysis.

UPDATING AWARENESS TRAINING

Now that you have identified your significant aspects, you should update and customize your awareness training to briefly describe how your installations mission activities can affect the environment.

Step 20. Establish environmental objectives and targets.
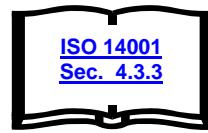
In this step, you develop and document objectives and targets for selected significant aspects, which are managed under the EMPs established in Steps 21–26. As stated in the introduction to the environmental aspects and impacts development steps, your significant aspects provide the basis for establishing objectives and targets, identifying training requirements, determining requirements for operational controls and work procedures (such as SOPs), and completing periodic management reviews.

Once an aspect is considered significant, the installation should review whether it is being controlled and, if not, what needs to be done to control it. Even if the aspect is being controlled, undertaking additional efforts toward reducing the risks associated with the aspect. Objectives and targets are developed for situations where actions are required to bring the aspect under control or where improvements are desired. Not all significant aspects require the development of objectives and targets, but the significant aspects must be considered when establishing and reviewing your objectives and targets. Your EMS ensures all significant aspects continue to have appropriate operational control procedures (Step 23). You are not prohibited from establishing objectives and targets that are not directly related to a significant environmental aspect. For example, you may develop an objective to reduce NOVs across the installation. This objective would apply to several environmental media and would support your commitment to compliance with legal requirements and continual improvement.

Reminder
Not all significant aspects require the development of objectives and targets, but they must be considered when establishing and reviewing your objectives and targets.

ISO 14001 defines an environmental objective as "an overall environmental goal, consistent with the environmental policy, that an organization sets itself to achieve." In other words, environmental objectives are goals the installation sets for itself, usually over the long term, at each relevant functional and organizational level. For example, an installation that identifies hazardous waste generation as one of its significant aspects might establish a quantifiable (measurable) reduction in hazardous waste generation as one of its long-term objectives.

Similarly, ISO 14001 defines an environmental target as "a detailed performance requirement, applicable to the organization or parts thereof, that arises from the environmental objectives and that needs to be set and met

in order to achieve those objectives." Like objectives, environmental targets should be specific and measurable, but they should also directly link to a specific time frame for accomplishment. Continuing with the example above, an installation might require a subordinate organization or organizations to reduce hazardous waste generation by a specific amount (such as 10 percent or 2,000 pounds) by a specific time (such as by 1 January 2006, or the end of FY06).

Generally, you want to establish at least one environmental target for each environmental objective. In addition, your objectives and targets must support mission accomplishment, be consistent with installation environmental policy, including commitments to pollution prevention and compliance with legal and other requirements. Most importantly objectives and targets should support and enhance mission accomplishment.

DETERMINING OBJECTIVES

When determining environmental objectives, the installation should consider the following:

- Mission priorities (Step 9) and the ability to enhance and sustain the mission

- Applicable legal and other requirements (Step 15)

- Installation strategic planning initiatives

- Identified significant environmental aspects and impacts, including known obstacles to effective mission accomplishment

- Installation sustainability (25-year) goals, if applicable

- Ability to control the activities, products, or services involved

- Ability to track, monitor, and measure results

- Overall cost to track, monitor, and measure results

- Technological options that are or will be available (such as green bullets, alternative fuels, and hybrid electric vehicles)

- Financial, operational, and functional requirements

- Views of interested parties

- Linkage to the environmental policy statement.

As a principle consideration, your objectives and targets (at the floor level) should facilitate mission accomplishment and help ensure continuous compliance with all applicable legal and other requirements. As a ceiling, however, installations can seek to go beyond compliance to ensure long-term sustainability and establish objectives and targets that help them achieve that end.

ESTABLISHING OBJECTIVES AND TARGETS

To establish objectives and targets, you first determine the level or levels to which they apply (for example, the entire installation, certain units or organizations, or individual functional areas) and who is responsible for establishing them. A typical installation-level scenario is to have the CFT that completed the aspects and impacts analysis recommend objectives and targets, which the CDR or a designated representative (such as the EMSMR) then reviews and approves. Another scenario has the CFT developing environmental objectives for the installation and designated subordinate leaders (such as appropriate civilian functional managers and tactical unit commanders) establishing environmental targets to ensure the objectives are accomplished. Many alternative scenarios are possible, so each installation should decide the roles and responsibilities that best meet their needs..

No "standard" environmental objectives and targets pertain to every installation. Your objectives and targets should reflect what your installation does, how well it is performing, and what you want to achieve. Sometimes, an objective and target can be as simple as maintaining the status quo. Other times you may want to establish much longer term and aggressive goals. Generally, you should take the following steps to develop objectives and targets:

A. Involve the CFT.

Quality input from the CFT expedites your installation's efforts to set realistic objectives and targets. Just as the team provided knowledge and insight during aspects and impacts analysis, it can quickly identify realistic and readily measurable objectives and targets consistent with command policy and guidance, mission-related legal and other requirements, available resources, and environmental aspects and impacts.

B. Review mission priorities.

To meet the intent of the Army EMS policy an EMS must focus on and enhance the installation's core mission. In Step 9 you identified mission priorities and in steps 16 - 19 you identified where environmental impacts created risks to the mission. By establishing mission enhancing objectives and targets you create an opportunity to mitigate those risks identified in the previous steps. You should establish objectives and targets that strengthen the installation's ability to accomplish the mission and you will need to revisit and work closely with mission representatives to gain their buy in and support.

C. Gather information from available sources.

A great deal of information should be readily available to the CFT from a number of sources (Table 2-12). In addition, you can take a physical walkthrough of facilities (such as heating plants, motor pools, weapons system production facilities, firing ranges, and maneuver training areas) to identify other potential information sources.

Table 2-12. Information Sources

Information source	Possible benefit
Identified environmental aspects	Identify and target significant impacts
Process maps	Identify process steps with environmental aspects
Waste and emission data	Determine current wastes and sources
Site maps	Identify environmentally sensitive areas
EPAS audit reports	Identify areas needing improvement
Installation status report (ISR), Defense Site Environmental Restoration Tracking System (DSERTS), etc.	Evaluate environmental performance history
Installation sustainability plan	Identify installation long-range plans and initiatives
Installation master plan	Identify installation building use, land use, and other future plans
Federal Register	Identify new or emerging legal and other requirements

D. Identify preliminary environmental objectives.

From the aspects and impacts of Steps 16–19, mission support requirements, and your assessment of other available information, compile a list of preliminary environmental objectives. Grouping them by category may be helpful (Table 2-13). You can prioritize your objectives, starting with those that relate directly to your significant environmental aspects and mission critical tasks and then adding others that are less significant but still have mission or environmental impact potential.

Table 2-13. Preliminary Environmental Objectives

Energy use	Raw materials	Air impacts	Water impacts	Land impacts	Mission impacts	Other (specify)
Increase alternative fuel vehicle use	Increase vehicle battery recycling	Reduce training restrictions due to air emission restrictions	Reduce fuel spills	Reduce hazardous waste disposal from vehicle maintenance facilities	Reduce training restrictions due to operational noise level complaints	Improve employee awareness
Decrease facility energy use	Increase use of recycled paper	Reduce visible emissions from power plant	Eliminate effluent from vehicle washing facilities	Reduce landfilling of solid waste	Address endangered species encroachment in training areas	

How many environmental objectives you should have? Historical EMS implementation project case studies suggest starting with a limited number of objectives, and then expanding the list over time. In other words, keep your objectives simple initially, gain some early successes, and then build on them. As a realistic starting point, consider limiting your initial list of major objectives to 5 to 10, fewer if possible, that focus on your significant environmental aspects.

E. Identify new or proposed regulatory requirements.

Identify new or proposed requirements that affect (or could potentially affect) the installation's operations or activities as discussed in Step 15. Also, identify potential objectives related to each requirement (Table 2-14).

Table 2-14. Regulatory Requirements and Objectives

New or proposed regulation or other requirement	Possible objectives
New CAA national ambient air quality standard (NAAQS) ozone standard New CAA NAAQS $PM_{2.5}$ standard	• Reduce petroleum fuel consumption in administrative vehicle fleet. • Reduce emissions of chlorofluorocarbons (CFCs) from vehicle air conditioning units. • Reduce off-road vehicle travel. • Reduce particulate emissions from coal-and oil-fired boilers.

F. Identify, review, and evaluate installation communications with interested parties.

Consider the need for additional environmental objectives related to views of installation neighbors, community groups, or other interested parties. By definition, an interested party is "an individual or group concerned with or affected by the environmental performance of the organization." You can hold an open house or establish an installation focus group that includes local community representatives. Table 2-15 shows an example of how a local concern might translate into an installation environmental objective.

Table 2-15. Installation Communications

Communication with interested party	Response	Possible objectives
Telephone discussion with Jim Evans, president of Old Bridge Estates subdivision HOA (3/15/03, 703-590-5002). Concerned with installation power plant operation and visible emissions potentially harming local residents.	Discussed installation policy regarding power plant operations and operating permit requirements for controlling and monitoring emissions. Advised that we would establish objectives to reduce emissions and volunteered to attend next HOA meeting.	• Reduce visible emissions from power plant. • Improve community outreach by establishing a community advisory panel.

G. Identify appropriate targets for achieving each objective.

Environmental targets are detailed performance requirements, quantified when practicable, that arise from the environmental objectives and that the installation must reach to achieve the objectives. For each environmental objective, you should identify at least one target (some objectives may have more than one). In addition to being measurable, they should have a specific time frame for completion. Targets should be difficult, but achievable. The idea is to motivate the organization to *improve* environmental performance. Table 2-16 shows a few examples.

Table 2-16. Performance Measures for Final Objectives

Significant Environmental Aspect	Objective	Target	Performance Indicator
Waste generation *Example of mission enhancing objective and target*	Reduce solid waste disposal	Divert 40% of solid waste from landfilling NLT FY09	Tons of solid waste diverted vs. tons generated
		Reduce solid waste generated by 0.5 pounds per person per day by FY09 from the 2004 baseline	Pounds of solid waste generated per person per day
Air emissions	Reduce training restrictions due to air emission restrictions	Eliminate all restrictions on use of smoke pots by 2008	Revised Title V permit that removes smoke pots from opacity measurements
	Reduce VOC emissions	Reduce the average VOC content per gallon of paint used by 25% in FY06 from previous two FYs	Average VOC content per gallon of paint used in 2006 vs. Average VOC content per gallon of paint used (average FY04 and FY05)
Energy consumption	Reduce energy consumption	Reduce electricity use in the industrial by 10% NLT FY08 from the FY02 baseline	kWh used in FY08 vs. kWh used in FY02
		Increase number of miles driven by alternative fueled vehicles by 35% from FY06 baseline through FY20 (non tactical vehicles)	Baseline the number of miles driven by alternative fueled vehicles and the number of miles driven by conventional fueled vehicles for FY06 by 30 Dec 2006.
			Number of miles driven by alternate fueled vehicles in FY20 vs.number of miles driven by alternative fueled vehicles in FY06.
No specific aspect	Eliminate enforcement actions (ENFs)	Zero ENFs per FY	Number of ENFs received
	Improve employee environmental awareness	Verify if current EMS awareness training procedures are adequate by the end of FY06 and FY07	Results of random sampling of the installation population to determine the effectiveness of awareness training.
Example of mission enhancing objective and target		Conduct monthly awareness courses for new employees	Monthly training is conducted
		Revise awareness training procedures to address any issues identified in the random sampling	Revised Awareness Training Procedures.
Generation of noise	Reduce training restrictions due to operational noise level complaints	Reduce noise level complaints per "live-fire" training day by 50% NLT FY07 from FY04 baseline	Number of noise complaints received per day of live fire training FY07 vs. the number of noise complaints per live-fire training day in FY04
Example of mission enhancing objective and target		Develop/acquire a one mile Army Compatible Use Buffer (ACUB) adjacent to the small arms range by adding 1,000 feet every five years for the next 25 years	Acres of land developed/acquired per five-year timeframe
Cultural resource alteration	Reduce training restrictions due to cultural resource requirements	Decrease the number of days that ranges are removed from service due to cultural resource requirements by 50% NLT FY10 from 2005 baseline.	Number of inactive range days due to cultural resource requirements.
		Complete all mitigation actions listed in the 2005 Fort Swampy ICRMP for the "Maneuver Training Ranges" by FY08.	Number of mitigation actions completed and the number identified in the 2005 ICRMP.

H. Evaluate preliminary objectives and targets.

Carefully evaluate your preliminary objectives and targets to determine whether they are reasonable, technologically feasible, measurable, consistent with the environmental policy, and affordable. From your evaluation, compile a final list of objectives and targets (if you identify an objective but cannot determine an effective way to measure it, put it on hold for further analysis).

I. Establish performance indicators for final objectives and targets.

As stated earlier, you should quantify your environmental objectives and targets when practicable, and measure success by using appropriate environmental performance indicators (EPIs). An EPI is the information that is needed in order to determine whether or not an objective and target has been met. See table 2-16 for examples of objectives, targets, and performance indicators.

After developing your final list, the ISO 14001 standard requires that you document the environmental objectives and targets. We also recommend that you document the EPIs. To view a sample objectives and targets worksheet that you can use for this purpose, click here.

J. Identify responsible parties and ensure inclusion in appropriate EMPs.

For each objective and associated targets, designate CFT members (or other technically competent individuals) to be responsible for achieving them. Normally, this will be managed as part of an EMP that prescribes who, what, when, where, why, and how the specific objectives will be achieved (see Steps 21–26 for detailed guidance for preparing EMPs).

K. Document your procedure for developing environmental objectives and targets.

In addition to keeping records of your objectives and targets, you should formally document the specific procedure you used to develop them. You should then use the same procedure to complete periodic updates and revise the procedure as needed to ensure continual improvement. Click here to view a sample procedure for developing objectives and targets.

COMPLETE ENVIRONMENTAL MANAGEMENT PROGRAMS TO ACHIEVE OBJECTIVES AND TARGETS (STEPS 21–26)

**ISO 14001
Sec. 4.3.3**
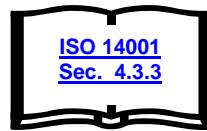
Steps 21 through 26 identify the content of each of your EMPs :

- **Step 21**. Determine the need for, and scope of, EMPs.

- **Step 22**. Describe resources, roles, responsibility, and authority.

- **Step 23**. Develop operational controls (SOPs) and work practices for activities associated with significant aspects.

- **Step 24**. Identify and fulfill environmental competency-based training requirements for installation personnel (garrison and tenants).

- **Step 25**. Establish monitoring and measurement procedures.

- **Step 26**. Establish procedures for maintaining EMS records.

For all objectives and targets, the installation should explain specifically how each will be accomplished, describing responsibilities, specific steps, milestones, and relevant metrics to be measured. ISO calls these detailed descriptions of how objectives and targets will be met EMPs.

> The ISO 14001 standard states, "The organization shall establish, implement and maintain a programme(s) for achieving its objectives and targets".

Collectively, the steps above constitute the contents of the EMPs. As a rule, the installation develops an EMP to achieve objectives and targets associated with each significant environmental aspect.

> In Step 19, you identify your significant environmental aspects. In Step 20 you develop objectives and targets, taking into account the significant aspects. In Steps 21–26, you determine your requirements for environmental management programs (addressing the objectives and targets for each significant environmental aspect) and develop a framework for EMP content. These steps provide guidance for developing the essential contents of your EMPs.

Step 21. Determine the need for, and scope of, EMPs.
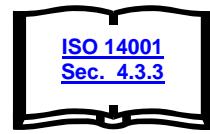
**ISO 14001
Sec. 4.3.3**

In this step, you determine which EMPs are needed and establish the framework for those programs. The ISO 14001 definition of "program" differs from the Army's. In ISO 14001, "environmental management program" refers to efforts smaller than Army program-level efforts. An EMP is a plan for addressing and managing the objectives and targets associated with each significant aspect. You should have an EMP for all environmental aspects for which you have developed objectives and targets. In this guide, we use the ISO terminology and meaning for EMPs.

The EMP is a convenient way to organize activities and information within your EMS. You are likely to have several EMPs—at least one for each significant environmental aspect for which you have developed objective targets (Step 20). The EMP contains your plans for achieving the objectives and targets developed for each those aspects. Most aspects you identify relate to specific environmental media for which most installations already have existing management programs. Consequently, we recommend you expand the content of the EMP beyond what is minimally required by ISO14001 to include the components of your existing management programs. Each EMP should include the following:

- **Objectives and targets.** How can we improve specific elements of environmental performance, and how can success be documented?

- **Regulatory and other requirements (if applicable).** What environmental regulations, guidelines, or other agreements apply to the significant aspect?

- **Responsibilities.** When appropriate, personnel (or positions) should be designated at each relevant function and level. Responsibilities should be identified for personnel, including individuals external to the installation, who can assist in the implementation of the EMP.

- **Operational controls.** What operational controls or SOPs are relevant in controlling the significant aspect? Where can they be found?

- **Training.** What training is required by ISO 14001, by environmental or other regulations, or to improve performance and reach specified targets?

- **Resources.** What human, technological, or financial allocations are needed? Include specific funding amounts and sources.

- **Action Plans, Milestones, and Timelines.** How will the target be achieved? Are there milestones and timelines to mark your progress? When are periodic reviews scheduled?

- **Measuring and monitoring.** What must be measured or checked to ensure EMP effectiveness, progress toward objectives and targets, or effective monitoring of significant aspects? How can you be sure the measurements are accurate?

- **EMS performance records.** What progress are we making toward achieving objectives and targets? Are required actions being performed?

Click here to view a sample blank EMP template. Click here to view a completed EMP template.

COORDINATION AND OVERSIGHT

The EMSMR should coordinate and oversee the EMPs. In many cases, Army installations are engaged in strategic planning efforts and have implemented systems to track installation-level goals and objectives. If this is the case on your installation, make sure that the EMS objectives and EMPs are included in the strategic planning effort and the EMSMR is involved.

UPDATING

Creating good EMPs is a challenge and may take several iterations to perfect. As you develop and use your EMPs, you acquire new insights on your significant aspects and associated processes and probably see the need to make changes. This is why EMSs are built around the concept of continual improvement. You need to modify your EMPs and related planning documents when

- activities, products, services, and related objectives and targets change;

- objectives and targets are added or revised;

- relevant legal and other requirements are introduced or changed;

- substantial progress in achieving your objectives and targets has been made (or has not been made); and

- services, process, or facilities change or other issues arise.

DOCUMENTATION AND RECORDS

Although the ISO 14001 standard only requires you to establish and maintain the EMPs, we recommend you develop and maintain documentation pertaining to your EMPs in accordance with your installation's EMS document control procedures. Records of EMP status and progress should also be maintained, including summary sheets, meeting minutes, status reports, in-process review (IPR) input, and other progress indicators. Keep it simple. You may find it useful to establish a standard form that summarizes the basic information for each EMP and its current completion status.

Step 22. Describe resources, roles, responsibility, and authority.

**ISO 14001
Sec. 4.4.1**
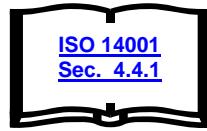
In Steps 6 and 7, you develop and gain approval of an EMS implementation plan to guide you through your EMS implementation. One of the key components of the plan is identification of the resources that would be required and specifying roles, responsibilities, and levels of authority. In this step, we identify the resources, roles, and responsibilities associated with each of our EMPs.

> Army installations already have the organization, staffing, programs, and resources to conform to the ISO requirements to describe resources, roles, responsibility, and authority. This step develops or provides documentation that describes the existing organization and how it implements and operates the EMPs.

APPOINTING A MANAGEMENT REPRESENTATIVE

ISO 14001 requires top management to appoint a specific management representative who, regardless of other responsibilities, has the responsibility and authority for

- ensuring that EMS requirements are established, implemented, and maintained in accordance with the ISO 14001 standard, and

- reporting on the performance of the EMS to top management for review and as a basis for improvement of the EMS.

We recommend selecting the EMSMR in Step 1.

ORGANIZATIONAL CHART

You probably already have one, and it is a very convenient tool for documenting and explaining your organizational structure and responsibilities. Include a *current* organizational chart with your EMS documentation for roles and responsibilities.

EMS ORGANIZATIONAL RESPONSIBILITIES TABLE

A table or matrix is a simple and effective way to summarize EMS responsibilities. The table should list the EMSMR, CFT members, and individuals responsible for the EMPs. You can then refer the reader to the individual EMPs for further information. ISO 14001 does not require a table or form, but it is probably the simplest way to summarize and document EMS-related responsibilities. Include a reference or direction to the

responsibilities table in your EMS manual. Click here to view a sample EMS responsibilities list.

REVIEW AND UPDATE

Your document control procedure (Step 13) should describe how information on structure and responsibilities is periodically reviewed and updated.

Step 23. Develop operational controls (SOPs) and work practices for activities associated with significant aspects.
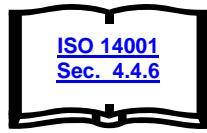
In this step, you systematically develop, revise, and document the SOPs associated with all activities, products, and services that have significant environmental impacts and associated aspects to describe the appropriate actions for managing those impacts and aspects.

Installations should already have SOPs or work practice instructions (called operational controls in the ISO 14001 standard) for most complex operations or mission activities, including those with associated significant environmental aspects. This step ensures that SOPs are in place and that they contain instructions that enable personnel to comply with the environmental policy and achieve environmental objectives and targets. This information should also be consistent with information presented in competency-based training (Step 24). Developing and keeping current all the SOPs or work practice documents required throughout the installation can be a huge and time-consuming part of implementing an ISO 14001−conformant EMS. Having good document control procedures helps manage this task.

> Not all significant aspects require the development of EMPs, but they must have operational controls.

WHERE TO START

Begin this step by reviewing your prioritized list of significant aspects and impacts. Start with the operations or mission activities at the top of that list (most significant impacts), and identify any SOPs that address those activities. Make sure the SOPs adequately address all the skills and procedures needed to perform the activity in an environmentally acceptable manner. If part of the process is not documented, the area supervisor needs to create a new SOP or modify the existing one.

WHAT TO INCLUDE

One of the central ideas of the EMS concept is to integrate sound environmental management practices in day-to-day operations. Here, you can affect how employees perform their routine daily tasks. For example, if the goal is to recycle certain used materials, make recycling a part of the relevant SOPs. The result should be SOPs that get the job done *and* mitigate environmental impacts.

SCHEDULING WORK

You may find it useful to develop a schedule for reviewing and revising SOPs from your prioritized list of significant aspects. Some installations have found it effective to coordinate the execution of Steps 23 and 24 so that SOPs are reviewed and updated immediately before or after competency-based training is conducted.

After all significant impacts and associated aspects are addressed in SOPs, you should continue by routinely reviewing all SOPs for environmental considerations as they are revised or updated. You can do so by modifying your installation's staffing procedures to include appropriate environmental review and approval.

Operational controls and SOPs and work practice instructions should

- be easy to understand and use,

- list personnel who should receive or have access to them, and

- identify the training needed for the appropriate personnel.[24]

Your document control procedure (Step 13) should include requirements and responsibilities for developing, maintaining, and reviewing operational controls, SOPs, and work practices.

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[24] Concurrent Technologies, p. 45.

Step 24. Identify and fulfill environmental competency-based training requirements for installation personnel (garrison and tenants).

ISO 14001 Sec. 4.4.2
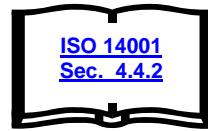
In this step, you establish and maintain a system or process to ensure job-specific competency for all employees whose work activities can cause real or potential significant environmental impacts.

> We address the *awareness* portion of this requirement in Step 11. Step 24 deals with ensuring and validating the competency of personnel. Competency-based environmental training and skill validation are required only for personnel whose work activities can significantly impact the environment.

WHO MUST BE TRAINED

The first step in meeting this requirement is identifying employees who need competency-based environmental training. Most installations already have a training office and a centralized system for managing individual training requirements. Try to work within your existing system. Your installation training coordinator can help complete this requirement. After looking at the existing training management process, review the list of significant environmental aspects and impacts (Step 19). Employees performing work or mission activities associated with these significant impacts need competency-based training. When reviewing significant impacts, look at the *entire* work process to identify *all* employees who need the training. Look at the various regulatory requirements that mandate special environmental training and include personnel working in those areas (Step 15). Include contract and temporary workers when assessing training needs.

WHAT MUST BE TRAINED

Competency-based training requirements must be relevant to specific work activities or job descriptions. The level of training required may also vary according the level of responsibility assigned to various grade levels or military ranks. We recommend that the competency-based training include at least the following:

- The significant environmental impacts, actual or potential, of their work activities and the environmental benefits of improved personal performance

- Specific objectives and targets related to their work activities

- The potential consequences of departure from specified operating procedures (Step 23)

- Environmental training required by applicable regulatory requirements

- Training necessary to obtain or retain required licenses or registrations

ORGANIZING COMPETENCY-BASED TRAINING

Since competency-based training is more specialized than awareness training, addressing competency-based requirements process by process, or mission by mission, is useful. Begin by examining the activities that contribute to your most significant aspect. Look at the processes, identify the employees and job descriptions involved, and determine what they need to know to perform their missions or jobs in an environmentally responsible manner. Get input from experienced employees or supervisors as you determine training needs. They are the real experts in their particular areas and can quickly tell you what will work and what will not.

It may take a while to address all significant impacts and processes, so develop a schedule and stick to it.

OPTIONS FOR PROVIDING THE TRAINING

Competency-based training does not always have to take place in a classroom. On-the-job training, brownbag sessions, and computer-based training are good alternatives.

TRAINING RECORDS

You must keep records of the training performed to conform to the ISO 14001 standard. We recommend that the training records include the following:

- Individuals and job descriptions requiring training

- Information or skills taught (lesson outline or plan)

- Requirements for completion (written test, hands-on exercise, etc.)

- Schedule or timetable

- Attendance records (include a sign-in sheet)

- Results of evaluation (pass or fail, go/no go).

The ISO 14001 standard also requires that you keep records that document the procedure to identify training needs and procedures. We recommend you develop training documentation that includes

- the process the installation uses to determine training needs,

- the location of the training plans and who is responsible for them, and

- how training is prioritized on the installation.

> The Army is one of the most experienced training organizations in the world.
>
> If you follow the training procedures the Army uses to teach soldier skills, you will meet the ISO requirements. Make maximum use of available assets, including the training management systems and expert training personnel on your installation.

Your training program is an ongoing function on the installation. You must continually assess and update installation-specific training needs. Keep procedures and records in accordance with your installation's document control and record-keeping procedures.

OBTAINING TRAINING MATERIALS

Because of the specialized nature of competency-based training, you may have to obtain information from a variety of sources or develop lessons "in house" to meet your needs. However, all Army installations share many similar functions, and good training materials will become readily available as more installations implement their EMS. Before developing training materials in house, check the sources that follow to see whether existing materials can meet your needs:

- Training posted on DENIX

- Other installations with similar missions

- Training workshops

- Training videos

- Internal trainers

- Experts

- Consultants

- Community colleges

- Vendors and suppliers

- Technical, trade, and business associations

- Self-study or study groups

- Training consortia (major command or IMA region meetings).

Step 25. Establish monitoring and measurement procedures.
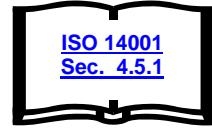
In this step, you establish, implement, and maintain documented procedures as required by ISO 14001, Sec 4.5.1, to

- regularly monitor and measure the key characteristics of your operations and activities that can significantly impact the environment;

> *Key characteristics* are the environmental performance indicators established for each target set in Step 21.
>
> Performance indicators should be simple and understandable, objective, measurable, verifiable, reproducible, and relevant to your installation's objectives and targets. They should also be practical, cost-effective, and technologically feasible. The identification of environmental performance indicators should be an ongoing process (ISO 14004, p. 21). Your performance indicators must provide top management with the information it needs to make decisions about the EMS (NSF-ISR, p. 62).

- track environmental performance (including progress toward meeting objectives and targets and conformance with SOPs);

- calibrate and maintain monitoring equipment and maintain records of the calibration process; and

- periodically evaluate compliance with relevant environmental laws and legislation.

WHAT SHOULD BE MEASURED?

Two major sets of activities or processes should be measured and monitored:

- Processes associated with significant aspects all require some sort of monitoring or measurement. Sophisticated techniques and automated systems are usually not required, but if a process is associated with a significant aspect, someone should be checking performance.

- The group of processes related to objectives and targets requires monitoring. These are actually a subset of the first group and are probably a higher priority since you specifically identified these areas for improvement. You can begin by reviewing your installation's list of objectives and targets and the associated and the associated performance measures (Step 21).

You must eventually define required measuring and monitoring for all significant aspects, but the first priority should relate to the objectives and targets.

Examine the performance measures (key characteristics) developed in Step 21. Do you already have an accurate and reliable way to monitor and measure these variables? At this point, check with the environmental management staff and with the supervisors in charge of these processes to determine what is already being measured and monitored. Some of the monitoring you need is probably already being done.

For each of the key characteristics you need to monitor, think about the following:

- Is the required monitoring already being done?

- If so, is the method

  ➤ providing accurate data? (Performed using valid, documented procedures and calibrated equipment?)

  ➤ reliable? (Performed successfully on a regular schedule, with data recorded and maintained according to documented procedures?)

  ➤ performed at an appropriate frequency? (You need multiple data points to track variables and interpret performance over a time period. Recommended frequency depends on the variable being measured and the changes you need to demonstrate.)

If your current monitoring procedures do not satisfy these requirements, you should examine the procedures and equipment to determine needed improvements. Likewise, if you need to implement new monitoring programs, be sure that the procedures meet these requirements and provide the data you need to effectively evaluate performance.

"Monitoring and measuring can be a resource-intensive effort."[25] Be certain to have clearly defined requirements for data collection and to avoid collecting data for "data's sake."[26]

Ensure your installation has a clear, well-communicated schedule for routine monitoring and measurement and equipment calibration. In your schedule, include time for proper data management and quality control procedures.

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[25] NSF-ISR, p. 60.
[26] See Note 25.

RECORDING, ANALYZING, AND UNDERSTANDING DATA

Monitoring programs are useless if you cannot correlate the measured data with performance. To do so, you must accurately record the data you collect and maintain it in format that illustrates any changes in performance. Involve the supervisors and employees who work in the process being measured; ensure they understand the data being collected and how it relates to both the performance measures and the objectives and targets.

Often, your performance measures accurately document performance but do not tell *why* the process is working better or worse. Understanding the variables or factors that affect performance is critical in analyzing your data and assessing your progress toward objectives and targets. A root cause analysis, such as those performed as part of EPAS audits, can be valuable. Also, supervisors and line employees can often provide quick analyses of process performance and the factors affecting it. They can help you identify what to change to obtain the results you want and can often explain how underlying or uncontrolled variables are influencing performance.

TRACKING PERFORMANCE

The ISO 14001 standard requires you to track performance of your significant processes using performance measure data and evaluate your progress toward objectives and targets. This periodic evaluation ensures that you are consistently moving toward the established objectives. If the process is not meeting the established objectives and targets, you must determine why and make changes to improve performance. For some processes, you can establish operating parameters that apply to your performance measures. Performance data that fall outside of your established operating parameters indicate subpar performance and should trigger evaluation of and adjustments to the process. Maintain performance records in accordance with your EMS records procedure.

Also, look at SOPs and make sure they accurately describe appropriate ways to perform duties and operate the process. After verifying that the SOP is correct, ensure that employees are following it.

CALIBRATION REQUIREMENTS

Some measurements involve equipment such as scales, meters, and other measurement devices. Proper and accurate functioning of these items is critical to your success. Review the manufacturer's recommendations and document a calibration and testing procedure. Maintain the procedures, required calibration and testing schedules, and calibration and

testing records in accordance with your document control and records maintenance procedures.

EVALUATING COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

In addition to meeting your objectives and targets, you need to periodically check your regulatory compliance status. From Step 15, you know the regulations and laws that apply to your installation and its activities. To meet the ISO requirement, you must establish, implement and maintain a procedure for checking compliance. We recommend documenting this procedure to ensure a consistent approach. Army installations have been doing this for many years, and you probably already have these procedures in place (such as EPAS, internal and external assessments, and ISR II). In most cases, your main task is to check the documentation and records for these processes and maintain the information in accordance with your established procedures.

Typical processes for ensuring compliance include periodic inspections, as well as daily, weekly, or monthly monitoring of critical process (wastewater treatment monitoring to satisfy NPDES permits, for example). Also, internal and external audits performed as part of the EPAS program can provide periodic snapshots of regulatory compliance. Be sure to check installation compliance action plans (ICAPs) to verify that existing compliance problems are being properly addressed. Results from your regulatory compliance status checks should be part of the management review discussed in Step 30.

Click here for sample measuring and monitoring procedures.

Step 26. Establish procedures for maintaining EMS records.
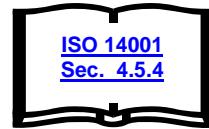
In this step, you develop and implement procedures for managing records that document EMS operation and performance. ISO 14001 requires organizations (such as installations and other appropriate facilities) to "establish, implement and maintain procedures for the identification, storage, protection, retrieval, retention, and disposal of records." The records are the information that must be maintained to document the performance of the EMS and to demonstrate conformance with the ISO 14001 standard (Figure 2-4). Keeping complete and well organized environmental records is critical, not only because of the ISO requirement, but also because the records help you track environmental performance and improve the EMS.

Figure 2-4. EMS Document Hierarchy

Less Detail

More Detail

Policy

Manual

EMS Procedures

Operational Controls (SOP)

EMS Records
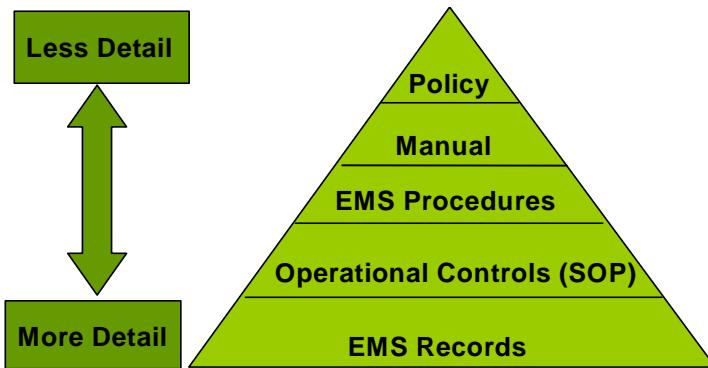
You can organize your records in a variety of ways, such as according to EMPs. Some types of records, like audit reports, include information covering multiple EMPs and might be stored in their own specific files. Using an electronic database with search capabilities greatly increases the flexibility of your record-keeping system and resolves most file location issues.

Hints for Records

- Begin by identifying the records required. Look at your procedures and SOPs to determine the evidence needed to demonstrate conformance. Also, consider records that must be generated due to various legal and other requirements.

- Focus on records that add value.

- If you generated forms in order to implement the EMS, the forms, once filled out, become records. Keep forms simple and understandable.

- Establish a records retention policy and stick to it. Include records retention requirements specified in applicable environmental regulations.

- When formulating your records management process, consider the people who need access to the records and the circumstances.

- Consider using an electronic EMS records management system.

- Think about which records need additional security or restricted access. Consider a remote backup of critical records at another location.

Records must be

- legible;

- identifiable and traceable to the activity, product, or service involved;

- stored and maintained to be readily retrievable and protected against damage, deterioration, or loss; and

- kept in accordance with established and recorded retention times.

Make sure your records policy answers the following questions:

- What records are kept?

- Who keeps them?

- Where are they kept?

- How are they kept?

- How long are they kept?

- How are they accessed?

- How are they disposed of?

In addition to training records and audit results, records may also include the following:

- Legislative and regulatory requirements

- Compliance records

- Job descriptions

- Permits, licenses, and other approvals

- Environmental aspects and their associated impacts

- Environmental training records

- Equipment inspection, calibration, and maintenance activity and re-cords

- Sampling and monitoring data

- Information on emergency preparedness and response

- Details of nonconformance, incidents, complaints, external communications, and follow-up action

- Supplier and contractor information[27]

- Results of EMS audits and management reviews.

"The effective control of these records is essential to the successful implementation of an environmental management system."[28]

Click here for samples of EMS record maintenance procedures used successfully at other Army installations.

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[27] Concurrent Technologies, p. 50.
[28] ISO 14004, Section 4.5.4, p. 31.

Step 27. Develop and review emergency preparedness and response documents and procedures.
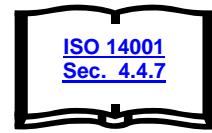
ISO 14001
Sec. 4.4.7

In this step, you establish, implement, and maintain procedures as required by ISO 14001 to

- identify potential for accidents and emergency situations;

- respond to accidents and emergency situations;

- prevent and mitigate the environmental impacts that may be associated with accidents and emergencies;

- review and revise emergency preparedness and response procedures when necessary, especially after the occurrence of an accident or emergency; and

- conduct drills and tests of emergency preparedness and response procedures.

Potential environmental accidents and emergency situations include

- accidental emissions to the atmosphere,

- accidental discharges to water and land,

- specific environment and ecosystem effects from accidental releases, and

- fire.

(ISO 14004 and Concurrent Technologies Corporation for U.S. Army, *Environmental Management System Guidance Manual: Implementing ISO 14001*)

You should also consider emergency situations resulting from terrorist or other intentional acts that might impact the environment when developing and reviewing emergency preparedness and response documents and procedures.

On most Army installations, the required plans and procedures are already in place as required documentation per Army policy, so reviewing and documenting the location and maintenance of the plans constitutes most of your work.

KEY TEAM MEMBERS

Emergency preparedness and response normally involve multiple organizations on and off the installation. All participants should work together to develop detailed plans and execute quick, coordinated responses. The

CDR is ultimately responsible for these operations but, in most cases, relies on the staff to coordinate and execute the technical aspects of the response. On medium and large installations, key individuals in this process are the heads of the fire and emergency services organizations. They are most likely to manage the execution of any response. Other key organizations include the following:

- Medical services (casualty management)

- Military police or public safety (traffic control)

- Public works (infrastructure and utility systems)

- Preventive medicine and environmental health (human health risk issues)

- Safety

- Environmental management

- Public affairs

- Off-post responders—local hospitals, fire departments, and hazardous materials (HAZMAT) units

- Counter-terrorism officials (if applicable).

A. Determine emergency plans and procedures.

First, determine the plans and procedures required by law and regulations. Depending upon the nature of their missions and operations, Army installations are often required by law to maintain the following:

- Risk management plan (a CAA Section 112r requirement for installations that stock certain chemicals above threshold quantities)

- Spill contingency plan (SCP) and spill prevention, control, and countermeasures plan (SPCCP) to address potential oil spills

- RCRA contingency plan

- Facility response plan (FRP)

- Chemical accident/incident response and assistance (CAIRA) plan.

In addition, your state may require specific plans covering certain contingencies. Check your state's requirements during this process.

To complete your list of required response plans, look at other areas or operations on your installation that have the potential for environmental accidents or releases not covered by laws and regulations. One way is to look at the hazardous or regulated materials used on the installation. In most cases, they are addressed under the laws and regulations discussed earlier and included in an existing plan. If not, you should make sure they are included.

B. Review and update your response plans.

Your document control procedures ([Step 13](#)) must include requirements and responsibilities for reviewing and updating emergency response plans. We recommend doing so annually. Key team members should participate in the review, and the results should be recorded as part of the review process. The major purpose of the review is to identify changes on the installation that affect plan execution. Review attachments to the plans, such as contact names and phone numbers, maps, facility floor plans, and material safety data sheets (MSDSs). These details often change and can seriously compromise the plan. As you review the plans, ensure that they meet the ISO 14001 requirements listed at the beginning of this step.

C. Post and distribute plans.

Make sure that employees can easily access plans and that they under-stand what they are expected to do in case of an emergency. Maintaining the plans on your intranet helps document control issues, but you may also want to post hard copies of the plans in affected organizations and work areas to ensure easy access. Observe document control procedures and remove outdated versions of the plans from the involved organiza-tions and work areas. Include off-post responder organizations.

D. Train and exercise.

When feasible, you should conduct no-notice drills or exercises to test the ability of employees and responders to react quickly and correctly in case of emergencies. When you conduct an exercise (or after an actual emer-gency), hold an after-action review (AAR), keep records of the results, and revise the affected plans as required.

E. Document procedures.

Maintain the following documentation in accordance with your EMS document control procedures:

- A procedure for identifying the potential for environmental accidents and emergencies (risk assessment)

- All installation environmental accident and emergency response plans and procedures, including agreements with outside organizations that offer emergency response or medical support.

- Documentation on how the installation works to prevent such incidents and the associated environmental impacts (provide the location of procedures for fire, safety, HAZMAT storage, and hazardous waste accumulation point inspections)

- Mitigation procedures for impacts associated with accident and emergencies (covered in your response plans)

- Emergency preparedness and response document review and testing processes.

Click here for sample procedures covering emergency preparedness and response.

Step 28. Establish procedures for nonconformance and preventive and corrective actions.

**ISO 14001
Sec. 4.5.3**
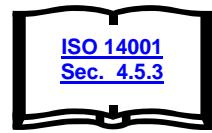
At this point, you have taken great strides in establishing and implementing the EMS, but your EMS is not perfect. To deal with imperfections—some of which may have been identified from measuring, monitoring, audits, and other reviews—and to adapt to changes on the installation, you must develop procedures for dealing with nonconformance.

In this step, you develop and implement procedures that meet the ISO 14001 requirements for

- identifying and correcting nonconformances and taking actions to mitigate their environmental impacts;

- investigating nonconformances, determining their causes, and taking actions to avoid their recurrence;

- evaluating the need for actions to prevent nonconformances and implementing appropriate actions to avoid their occurrence;

- recording the results of corrective actions and preventive actions taken; and

- reviewing the effectiveness of corrective and preventive actions taken.

Nonconformance refers to situations or actions that do not meet or comply with the requirements established in your installation's EMS or the ISO 14001 standard. Nonconformance can also mean that implementation is not consistent with the EMS description.[29]

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[29] NSF-ISR, p. 65.

> Typical causes of nonconformance include
>
> - poor communication,
>
> - faulty or missing procedures,
>
> - equipment malfunction (or lack of maintenance),
>
> - lack of training,
>
> - lack of understanding requirements,
>
> - failure to enforce rules, and
>
> - corrective actions that fail to address root causes of problems.
>
> (NSF, p. 66)

Means of identifying potential or real nonconformance include

- findings, conclusions, and recommendations reached as a result of measuring and monitoring;

- audits and other reviews;

- accidents;

- employee comments; and

- changes in installation activities or structure.

RESPONSIBILITIES AND AUTHORITIES

You must establish, implement, and maintain procedures for dealing with actual and potential nonconformities and taking corrective and preventive actions. Whatever the format, everyone on the installation, from the CDR and supervisors to individual employees, must understand what they can and must do to address nonconforming situations.

GENERAL PRINCIPLES

In any nonconformance situation, the parties responsible for addressing the nonconformance must perform several key activities to correctly assess and respond to the problem. Ensure that your nonconformance procedures define requirements for

- identifying and correcting nonconformities and taking actions to mitigate their environmental impacts,

- investigating nonconformities to determine their cause and taking actions in order to avoid their recurrence,

- evaluating the need for actions to prevent nonconformities and implementing appropriate actions designed to avoid their occurrence,

- recording the results of corrective and preventative actions taken, and

- reviewing the effectiveness of the corrective and preventive actions taken.

By analyzing system deficiencies, attempting to determine the root cause, or identifying why the problems are actually occurring, you may be able to detect patterns or trends. These trends may lead to root causes that are outside the control of the installation, but still within its sphere of influence. For example, a significant environmental impact may be tied to a weapons system being maintained at the installation. Although your installation cannot directly control the weapons systems and associated Technical Manuals (TM) assigned, it can notify the Product Manager (PM) for the weapon system of deficiencies with it or the TM. By raising awareness to the PM at the Army Level it becomes possible to influence future weapon systems acquisitions and TM revisions.

"Identifying trends allows you to anticipate and prevent future problems. Preventing problems is generally cheaper than fixing them after they occur (or after they reoccur)."[30] When a problem is documented, the installation commits to quickly resolving it. Your corrective and preventive action process must include responsibilities and completion schedules. If the action is going to be lengthy or resource intensive, review progress regularly.

The corrective action should

- resolve the immediate problem,

- consider whether the same or similar problems exist elsewhere, and

- prevent the problem from recurring.

The corrective action process should also define the responsibilities and schedules associated with these three steps.

(NSF, p. 66)

Furthermore, you must ensure that any actions taken are appropriate to the magnitude of the problem and the environmental impacts encountered. Changes in the EMS documented procedures that result from any corrective or preventive action must be implemented and recorded. In addition, the installation must ensure that these corrective and preventive actions have been implemented and that systematic follow-up ensures their effectiveness.[31]

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[30] See Note 29.
[31] ISO 14004, Section 4.5.3, p. 30.

If your installation has an ISO 9001 management system in place, use the ISO 9001 corrective and preventive action process as a model for this EMS corrective and preventive action procedure.[32] Consider incorporating parts of the corrective action process with the management review process. For example, use the management review meetings to review nonconformities, discuss causes and trends, and identify corrective actions and assign responsibilities.[33]

ISO 14001 requires only that organizations establish, implement, and maintain procedures for nonconformance and corrective and preventive action. We recommend that you document these procedures to ensure consistency and understanding across the installation.

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[32] See Note 29.

[33] See Note 29.

Step 29. Conduct periodic audits.
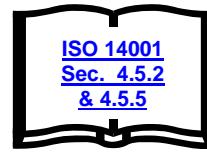
In this step, you establish, implement, and maintain programs and procedures for periodic audits to do the following:

- Determine whether the EMS operates in accordance with documented procedures and the ISO 14001 standard.

- Determine whether the EMS has been properly implemented and maintained.

- Provide audit results information to management.

- Base the audit coverage on environmental importance and previous audit results.

- Include the scope, frequency, methods, responsibilities, and requirements for conducting audits, measures to ensure auditor competence, and reporting results.

- Evaluate compliance with applicable legal and other requirements.

> Performing regular internal EMS audits is key to determining the progress made in implementing your installation-wide EMS.

ISO 14001 defines audits as "systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the environmental management system audit criteria set by the organization are fulfilled."

TYPES OF AUDITS

Audits fall into two broad categories—EMS audits of your EMS procedures and compliance audits focused on evaluating compliance with legal and other requirements. Internal installation personnel or external parties can perform these audits, which can be broad in scope, focusing on your entire EMS or all installations activities, or very narrow, focusing on one component of your EMS or individual installation activities.

EMS audits determine or provide information on whether the EMS conforms to established procedures and has been properly implemented and maintained. They can also be performed to identify opportunities for improvement in the installation's EMS. The results of EMS audits should be documented and used to correct or prevent specific nonconformities and provide input for management reviews.

Compliance audits evaluate compliance with the legal and other requirements that apply to environmental aspects, as part of the installation's commitment to compliance. The compliance audit can encompass single or multiple requirements.

Although these two types of audits have different purposes, the installation is not precluded from conducting them simultaneously. Part of the EMS audit evaluates whether the installation is following its procedure to ensure compliance with legal and other requirements, while the compliance audit evaluates how effectively that procedure is enabling the installation to actually comply with the legal and other requirements. Both audits should identify root causes of problems and deficiencies.

WHO PERFORMS AUDITS?

Audits can be performed by installation personnel or by external parties selected by the installation. EPAS, described later in this step, provides internal audit protocols and external audit support for Army installations. If your installation is ISO 9001–conformant, consider using your internal quality auditors as your internal auditors.[34] Regardless whom you choose to perform audits, they must be competent assessors who are properly trained. Training can come from a variety of sources, including on the job, on-line or correspondence courses, or classroom auditor training. Finally, your auditors must be able to audit objectively and impartially.[35] To help ensure objectivity, select auditors from outside the activity or chain of command of the activity being audited.

When selecting auditors, installations should use ISO 19011, Guidelines for Quality and/or Environmental Management Systems Auditing, Section 7 (Education, Work Experience, Auditor Training, and Audit Experience), as their selection criteria. The DA EMS self-declaration protocol memorandum also specifies qualifications for internal and external EMS auditors.[36] Click here to view the self-declaration memorandum. Some installations recommend pairing an auditor from an external organization (for objectivity) with an auditor within the activity (for process and procedural knowledge).

FREQUENCY AND SCOPE

The nature of the installation's environmental aspects and potential impacts, as well as the previous audit results, should guide the frequency of the audits. Each organization has considerable flexibility as to how and

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[34] NSF-ISR, p. 72.

[35] ISO 14004, Section 4.5.5, p. 31.

[36] Memorandum from Office of the Assistant Secretary of the Army (Installation and Logistics), OASA(I&L), Subject, *Environmental Management System (EMS) Self-Declaration*, February 2005.

when it conducts internal audits. Do not wait until the EMS is fully implemented and documented before conducting the first EMS audit. Audits can occur simultaneously with implementation.[37]

You are not required to audit the entire EMS or installation compliance status at one time. You may break each audit into discrete elements to allow for more frequent audits.[38] In general, each part of the entire EMS should be audited at least annually, more often if warranted. Audit coverage should be prioritized using two criteria: environmental significance and prior audit results. You should audit areas with significant environmental impacts early and often. Likewise, operations or processes with a history of nonconformance (discovered by audit results, regulatory violations, or other reporting) should also be a high audit priority.

OBJECTIVES OF EMS AUDITS

"Your EMS audits should focus on objective evidence of conformance. During an audit, auditors should resist the temptation to evaluate, for example, why a procedure was not followed–that step comes later."[39] The EMS "audit is a check on how well your system meets your own established EMS requirements. The new ISO 14001 standard has added a specific section addressing the evaluation of compliance, which should be an integral part of an audit. An EMS audit is not an assessment of how well employees do their jobs."[40] Audits, if done properly, can provide benefits beyond meeting the ISO requirement. They can identify and help correct nonconformities before any significant environmental impacts result. Audits can help you fine-tune your EMS to optimize environmental (and mission) performance. Figure 2-5 shows the linkage between EMS audits, corrective actions and management reviews.

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[37] Concurrent Technologies, p. 51.

[38] NSF-ISR, p. 71.

[39] See Note 34.

[40] NSF-ISR, p. 73.

Figure 2-5. Linkages among EMS Audits, Corrective Action, and Management Reviews
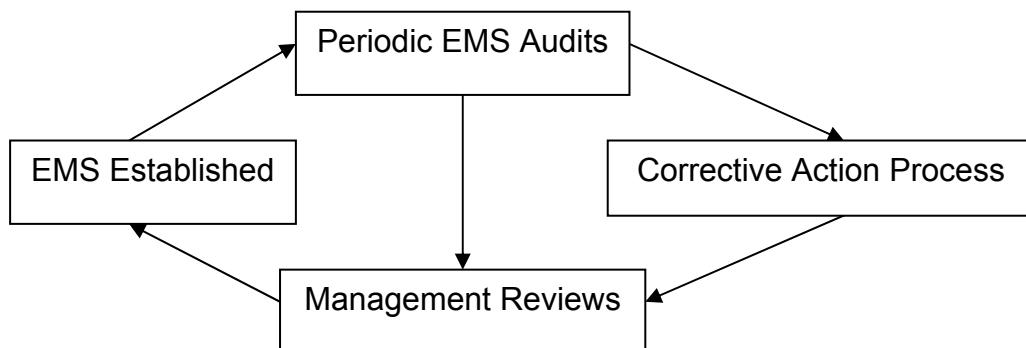
OBJECTIVES OF COMPLIANCE AUDITS

The compliance audit focuses on actual compliance with all applicable legal and other requirements, including permits, reporting, applicable fees, and compliance agreements. Identifying and correcting noncompliance with any of these requirements may avoid an enforcement action from a regulator such as a notice of violation or fine.

EPAS

The EPAS program will provide the Army's external auditing and can be used to help an installation objectively determine conformance to the ISO 14001 standard. Due to resource constraints, annual EPAS audits at all installations are unlikely, but audit protocols and other audit tools from EPAS are available to installations. The EPAS team leader schedules periodic EPAS external assessments with input from Army leadership, the IMA, and installation staffs. These EPAS audit tools can help you establish your internal EMS audit procedures. EPAS still provides compliance auditing support and protocols to help meet the compliance auditing requirements of EO 13148 and ISO 14001-2004.

Click here for EPAS audit procedures, checklists, and sample audit results.

RESULTS

Records of audit results must be maintained and communicated to conform to the requirements of ISO 14001. Audit results are one form of EMS performance information that must always be communicated to management, and the results need to be part of the management review discussed in Step 30. Recording audit results allows monitoring of corrective

actions.[41] Because audit results are EMS records, consider creating and using a template for documenting audit results. Although not a formal requirement, it may ease compliance with your EMS's records and documentation requirements. Furthermore, installations should "ensure that identified system gaps or deficiencies are corrected in a timely fashion and that corrective actions are documented."[42]

You need a documented audit procedure that addresses

- audit scope (including the activities and areas considered in audits),

- audit protocols,

- audit criteria,

- audit frequency,

- auditor training and competence requirements,

- responsibilities and requirements for managing and conducting audits, and

- responsibilities and requirements for documenting, reporting, and communicating results.

Source: ISO 14001

SELF-DECLARATION PROCEDURES

The ISO 14000 series of standards provide no formal guidance on the self-declaration process, nor any details about what kind of statement an organization can make. However, Section 1 (Scope) of ISO 14001 states that any organization that wishes to demonstrate conformity with the ISO 14001 standard can make a self-determination or self-declaration. Self-declaration is a process by which an organization that has implemented ISO 14001 publicly asserts that it conforms to the standard, without the involvement of certification bodies. Certification by an outside organization is expensive, and Army policy only allows an installation to pursue this when it provides clear and documented mission benefits.

In January 2004, the Office of the Federal Environmental Executive (OFEE) issued a self-declaration protocol to federal agencies and asked them to implement it by 31 December 2004. Click here to view the OFEE memorandum and protocol. In response, the Army developed a self-declaration protocol that addressed the requirements of the OFEE protocol and integrated existing Army policies, including the ISO 14001 standard. Click here to view the Army self-declaration protocol.

The Army protocol has two key purposes. First, it is used for evaluating and declaring compliance with Army and DoD metrics and the EMS re-

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[41] See Note 37.

[42] See Note 34.

quirements of EO 13148. Second, it is used to evaluate and, when appropriate, declare conformance with the ISO 14001 standard. Under the Army's protocol, installations can self-declare on the basis of results from an internal or external audit.

The self-declaration protocol provides guidance on determining organizational EMS requirements through the following:

- Establishing stakeholder responsibilities

- Establishing EMS audit planning guidance, including funding, audit scope, frequency of internal reviews, the frequency of external (independent) reviews, and the qualifications of the reviewers

- Establishing guidance on conducting, documenting and reporting the EMS audit

- Establishing a schedule for reviewing the Army's self-declaration protocol to ensure it reflects the Army's programs and mission needs

- Providing guidance to installations that desire to participate in a federal or state EMS recognition program.

> By implementing the Army's self-declaration protocol, an installation ensures the standardization and credibility of its self-declaration of compliance to EO 13148 and Army EMS policy of having an ISO 14001−conforming EMS in place.

Self-declaration can benefit an installation in numerous ways. Having an EMS in place assures neighbors of the installation's commitment to sound environmental management. In addition, many states have EMS recognition programs, which may result in increased regulatory flexibility for installations that have an EMS in place.

By implementing the Army's self-declaration protocol, an installation ensures the standardization and credibility of its self-declaration of compliance to EO 13148 and the Army EMS policy of having an ISO 14001−conforming EMS in place.

Step 30. Conduct periodic EMS management reviews (by 31 December 2005).
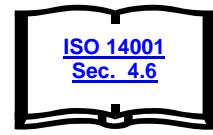
> **Army Management Review Metric**
> The GC and EQCC have conducted at least one documented annual review of progress on the EMS implementation plan to assure mission focus and ISO 14001 conformance

In this step, you establish procedures for top management to periodically review the performance of the EMS. As part of a continual improvement process, the ISO 14001 standard requires an organization's top management (EQCC or similar group) to review the EMS, at intervals that it determines, to ensure that the EMS is working (suitable, adequate, and effective, given the installation's needs).[43]

> Regular top management reviews to measure EMS implementation progress are critical to the success of your EMS.

MANAGEMENT REVIEWS, QUALITY MANAGEMENT, AND IPRS

The management review as described by the ISO standard is basically the same as the IPR commonly used in the Army. Consider holding management reviews at least once a year. Depending on the nature of your objectives and targets, hold IPRs semiannually or quarterly to track progress and make adjustments in a timely manner. You can combine management review meetings with other meetings, such as strategic planning or quality review meetings, or have a standalone EMS management review meeting."[44] Management reviews are one key to continual improvement and for ensuring that the EMS continues to meet your organization's needs over time."[45]

The review should be comprehensive, though not all elements of an EMS need to be reviewed at once and the review process may take place over time. The ISO 14001 standard specifies that input to management reviews includes

- results of internal audits and evaluations of compliance with legal and other requirements to which the organization subscribes;

- communications from external interested parties, including complaints;

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[43] NSF-ISR, p. 75.
[44] See Note 43.
[45] See Note 43.

- the environmental performance of the organization;

- the extent to which objectives and targets have been met;

- status of corrective and preventive actions;

- follow-up actions from previous management reviews;

- changing circumstances, including developments in legal and other requirements related to its environmental aspects; and

- recommendations for improvements.

Evaluate the need to change the environmental policy, objectives, targets, and other elements of the EMS due to the following factors:

- Changing mission

- Addition of new facilities

- Changing legislation

- Changing expectations and requirements of interested parties

- Changes in the products or activities of the installation

- Advances in science and technology

- Lessons learned from environmental incidents

- Reporting and communication.

Management reviews should assess both positive and negative findings and not only focus on the negative. Ensure the review focuses on the installation's environmental performance and evaluates the EMS's effectiveness. [Click here](#) to view a sample management review procedure.

Management Review Questions to Ponder

- Did we achieve our objectives and targets? If not, why not? Should we modify our objectives?

- Is our environmental policy still relevant to what we do?

- Are roles and responsibilities still clear, do they make sense, and are they communicated effectively?

- Does our EMS support mission accomplishment and sustainability goals?

- Are we applying resources appropriately?

- Are our procedures clear and adequate? Do we need other controls? Should we eliminate some of them?

- Are we fixing problems when we find them?

- Are we monitoring our EMS (such as via system audits)? What do the results of those audits tell us?

- What effects have changes in materials, products, or services had on our EMS and its effectiveness?

- Do changes in laws or regulations require us to change some of our approaches?

- What other changes are coming in the near term? What impacts (if any) will these have on our EMS?

- What stakeholder concerns have been raised since our last review? How are concerns being addressed?

- Is there a better way? What can we do to improve?

(NSF-ISR, *Environmental Management Systems—An Implementation Guide for Small and Medium-Sized Organizations, page 50*)

MANAGEMENT REVIEW OBJECTIVES

The management review should serve several functions:

- Providing general information about the EMS and current environmental issues to top management (continuing awareness)

- Discussing the relevancy of the installation's environmental policy, objectives, and targets in light of changing situations and making appropriate revisions

- Discussing EMS audit results and approving related plans and resources required to improve the EMS

- Reviewing progress toward objectives and targets, approving new or revised objectives and targets

- Making decisions and providing directions when needed to improve performance.

WHO PARTICIPATES

Two kinds of people should be involved in the management review process:

- Those who know and are responsible for specific aspects of the EMS and related environmental issues. This group extends beyond the environmental management office and should include individuals responsible for EMPs, as well as individuals in the various functional areas where significant impacts occur.

- Those who can make decisions about the organization and its resources (top management).[46] On an Army installation, these include the EQCC, chaired by the CDR.

DOCUMENTATION AND FOLLOW-UP

Record the minutes of the management review and document resulting observations, conclusions, and recommendations to prepare for necessary actions. In addition, "if any corrective action is taken, top management should follow up to ensure that the action was effectively implemented."[47] Consider maintaining a "due-out" list that documents required actions, responsible parties, and scheduled dates. Use this list to track required actions to completion. Maintain all management review documentation in accordance with your document control procedures.

CONTINUAL IMPROVEMENT

"The purpose and final outcome of the management review should be continual improvement of the EMS."[48] The continual improvement process should

- identify areas of opportunity for improvement of the EMS that lead to improved environmental performance,

- determine the cause or causes of nonconformance or deficiencies,

- develop and implement plans of corrective and preventive action to address root causes,

- verify the effectiveness of the corrective and preventive actions,

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[46] See Note 43.

[47] Concurrent Technologies, p. 53.

[48] See Note 47.

- document changes in procedures resulting from process improvement, and

- make comparisons with objectives and targets".[49]

Management reviews offer an opportunity to keep the EMS efficient and cost-effective. If your installation developed procedures or processes that are no longer needed, eliminate them.[50] "As your organization's EMS increases in its effectiveness and efficiency, your environmental performance will likewise increase."[51]

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[49] ISO 14004, Section 4.6.2.1, p. 33.

[50] See Note 43.

[51] See Note 47.

CONCLUSION

Congratulations! The basic elements of your EMS are now in place, and you can focus on continual improvement. As you continue to operate and examine the EMS and its procedures, you will undoubtedly find ways to streamline the EMS to increase both effectiveness and ease of use. You will also see that the environmental focus of the installation will shift from a defensive, reactive posture to one that is proactive and based on sound planning and informed decision-making. To keep the EMS relevant and effective, you must ensure that the mission remains the central focus of the management system and the EMS works to enhance readiness and develop sustainable processes and activities.

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Appendix A
Acronyms

AAR	after-action review
ABC	activity-based costing
ACSIM	Assistant Chief of Staff for Installation Management
AEDB-EQ	Army Environmental Database - Environmental Quality
ANSI	American National Standards Institute
AR	Army Regulation
ARIM	Army Reserves Installation Managment
ARNG	Army National Guard
ARTEP	Army Readiness Training Evaluation Programs
BMP	best management practice
CAA	Clean Air Act
CAIRA	Chemical accident/incident response and assistance
CBT	computer-based training
CDR	commander
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFCs	chlorofluorocarbon
CFR	Code of Federal Regulations
CFT	cross-functional team
CONUS	Continental United States
COTS	commercial off-the-shelf
CWA	Clean Water Act
DENIX	Defense Environmental Network Information Exchange
DFE	Design for the environment
DoD	Department of Defense
DPW	directorate of public works
DSERTS	Defense Site Environmental Restoration Tracking System
ECOs	environmental compliance officers

EMP	environmental management programs
EMS	environmental management system
EMSMR	environmental management system management representative
ENFs	enforcement actions
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPAS	Environmental Program Assessment System
EPCRA	Emergency Planning and Community Right-To-Know Act
EPI	environmental performance indicators
EPR	Environmental Program Requirements
EQCC	environmental quality control committee
ESA	Endangered Species Act
FAT	facilities, activities and tasks
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FRP	Facility response plan
FY	fiscal year
GC	Garrison Commander
GOCO	government-owned, contractor-operated
HAZMAT	hazardous material
HMTA	Hazardous Materials Transportation Act
HOA	homeowners association
HW	hazardous waste
ICAPs	installation compliance action plans
IMA	Installation Management Agency
IMRO	installation management regional office
IPR	in-process review
ISR	Installation Status Report
IT	information technology
METL	mission-essential task list
MSDSs	material safety data sheets
NAAQS	national ambient air quality standards
NCA	Noise Control Act

NEPA	National Environmental Policy Act
NLT	no later than
NOV	notices of violation
NOx	nitrogen oxides
NPDES	national pollutant discharge elimination system
OB/OD	open burn/open detonation
OCONUS	Outside Continental United States
ODCs	ozone depleting chemicals
OFEE	Office of the Federal Environmental Executive
PAO	public affairs office
PAIO	Program Analysis and Integration office
$PM_{2.5}$	particulate matter with diameter less than or equal to 2.5 microns
POC	point of contact
POL	petroleum, oil, or lubricant
POTW	publicly owned treatment works
RCRA	Resource Conservation and Recovery Act
RDT&E	Research, development, testing, and evaluation
REOs	regional environmental offices
RRC	Regional Readiness Commands
SCP	Spill contingency plan
SDWA	Safe Drinking Water Act
SOP	standard operating procedure
SOx	sulfur oxides
SPCC	Spill Prevention, Control, and Countermeasures
SPCCP	Spill Prevention, Control, and Countermeasures Plan
SRS	Strategic Readiness System
SS	significance score
TDA	Table of Distribution and Allowances
TEAM	The Environmental Assessment Manual
TOE	Table of Organization and Equipment
TSCA	Toxic Substances Control Act
USAEC	U.S. Army Environmental Center

USAES	U.S. Army Engineer School
USC	United States Code
VOC	volatile organic compounds