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DOE G 450.1-1A  
10-24-05

# Implementation Guide for Use with DOE O 450.1, *Environmental Protection Program*

*[This Guide describes suggested nonmandatory approaches for meeting requirements. Guides are not requirements documents and are not to be construed as requirements in any audit or appraisal for compliance with the parent Policy, Order, Notice, or Manual.]*

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Office of Environment, Safety and Health

## **PREFACE**

DOE G 450.1-1A, *Implementation Guide for Use with DOE O 450.1, Environmental Protection Program*, is the first of a series of Guides issued to provide suggested approaches for meeting the requirements of DOE O 450.1. DOE O 450.1 requires Department of Energy (DOE) elements to establish an Environmental Management System (EMS) that is integrated into DOE's Integrated Safety Management System (ISM). DOE G 450.1-1A provides an overview of this integration process. Subsequent Guides in this series will provide details regarding the integration process.

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## **1. PURPOSE**

This document provides discretionary guidance for implementing the requirements of DOE O 450.1, *Environmental Protection Program*. DOE O 450.1 requires implementation of sound stewardship practices that are protective of the air, water, land, cultural and ecological resources impacted by DOE operations and by which DOE meets or exceeds compliance with applicable environmental, public health, and resource protection laws, regulations, and DOE requirements in a cost-effective way. This objective is to be accomplished by implementing Environmental Management Systems (EMSs) as part of existing Integrated Safety Management Systems (ISMSs) established pursuant to DOE P 450.4, *Safety Management System Policy*, at DOE facilities. This Guide provides suggested approaches for meeting the requirements of DOE O 450.1.

## **2. APPLICABILITY AND SCOPE**

This Guide is for use by all DOE elements, including the National Nuclear Security Administration (NNSA) and contractors required to implement DOE O 450.1.

## **3. USE OF GUIDANCE**

DOE Guides are not requirements documents and may not be construed as requirements in any audit or assessment of compliance with the associated Policy, Order, Notice, or Manual. The information in this Guide will be useful for the implementation of DOE O 450.1, *Environmental Protection Program*. This Guide provides information on acceptable methods for meeting the requirements of DOE O 450.1. Alternatively, other methods that are equally effective in meeting desired levels of environmental protection and that satisfy the requirements of DOE O 450.1 may be used.

## **4. INTRODUCTION**

DOE O 450.1 requires DOE elements to establish an EMS that is integrated into DOE's ISMS. This document provides background information, an overview of the integration process, and guidance relating to the preliminary steps that DOE sites should undertake to meet the requirements of DOE O 450.1. Detailed guidance regarding how to implement the four phases of an EMS and guidance on subject matter topics (e.g., cultural resources, watershed management) will be issued in the near future.

The guidance contained in this document recognizes that many DOE sites have already implemented ISMSs, and therefore, should have most if not all of the elements of an EMS already in place. This document focuses on providing guidance to assist DOE sites in identifying

those missing EMS elements and integrating them into the site ISMS. A brief description of the primary sections of this Guide is set forth below.

The remainder of this Guide is organized as follows. Section 5, “Background,” provides a brief description of EMSs, ISMSs, and an ISMS/EMS. This section also provides a brief discussion of implementing an ISMS/EMS at closure sites. Section 6, “Integrating Environmental Management Systems into Integrated Safety Management Systems,” explains the parallels between an EMS and ISMS and summarizes the ISMS/EMS integration process. Section 7, “Preparing to Integrate an Environmental Management System into an Integrated Safety Management System,” provides guidance on the preparatory tasks that a DOE site should undertake before integrating an EMS into the site’s existing ISMS. Section 8, “Integrated Safety Management System/Environmental Management System Frameworks,” provides guidance regarding possible options that a DOE site can use to meet the requirements of DOE O 450.1. Section 9, “Assessing and Reporting Implementation of the Management System Requirements of DOE O 450.1,” provides guidance on how a DOE site can demonstrate that its EMS meets the requirements of DOE O 450.1.

## **5. BACKGROUND**

In April 2000, Executive Order (E.O.) 13148, *Greening the Government Through Leadership in Environmental Management* was issued, requiring Federal agencies to implement EMSs at all appropriate facilities by December 31, 2005. Responsive to E.O. 13148, DOE issued DOE O 450.1, *Environment Protection Program*, which requires each DOE element to establish an EMS that is integrated into the site’s ISMS.

### **5.1 INTEGRATED SAFETY MANAGEMENT SYSTEMS**

An ISMS represents DOE’s overall umbrella framework for managing environment, safety, and health (ES&H). It was developed in response to recommendations 95-2 and 98-1 issued by the Defense Nuclear Facilities Safety Board and was implemented at virtually all DOE sites by October 2000. The framework for ISMS is provided in DOE P 450.4, *Integrated Safety Management System Policy*, and guidance is provided in DOE G 450.4-1B, *Integrated Safety Management System Guide . . .*, dated 3-1-01. In addition, ISMS is incorporated in DOE contracts through several Department of Energy Acquisition Regulations (DEAR) clauses. Within ISMS, the term “safety” is defined to encompass ES&H, including pollution prevention.

### **5.2 ENVIRONMENTAL MANAGEMENT SYSTEMS**

An EMS is a systematic and structured approach for addressing the environmental consequences of an organization’s activities, products, and services. DOE O 450.1 defines an EMS as “a continuous cycle of planning, implementing, evaluating, and improving processes and actions undertaken to achieve environmental missions and goals.”

Although several recognized EMS frameworks exist, most are based on the International Organization for Standardization (ISO) 14001 EMS standard. As a result, ISO 14001 is the

framework upon which organizations most frequently choose to base their EMSs, and this is proving to be the case with U.S. Federal facilities. However, DOE O 450.1 does not prescribe the type of EMS framework that DOE elements must use (see Attachment 3 of this Guide for a list of the EMS elements required by DOE O 450.1).

The basic ISO 14001 EMS model (see Figure 1) consists of the following four phases.

### PHASE I: PLANNING

The organization identifies how its operations interact with the environment and develops objectives and programs to manage these interactions/environmental aspects.

### Phase II: Implementation and Operation

The organization implements programs to manage environmental interactions/aspects as well as other procedures for general system administration.

### PHASE III: CHECKING AND CORRECTIVE ACTION

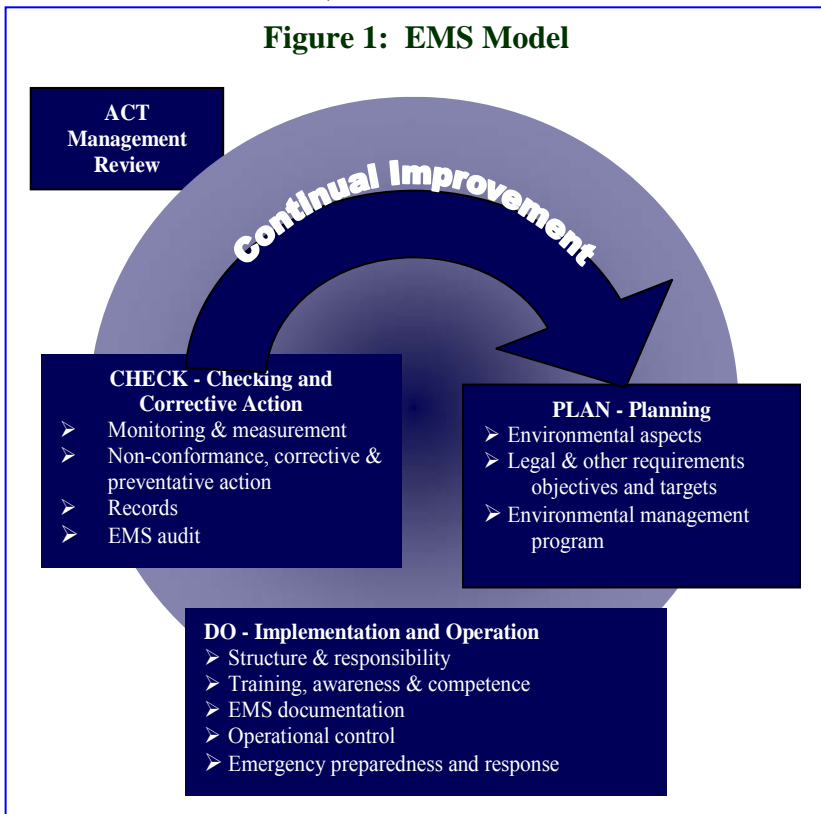
The organization assesses the effectiveness of the programs it established to manage environmental interactions/aspects, in addition to general system operational effectiveness.

### PHASE IV: MANAGEMENT REVIEW

Senior management determines what changes to the EMS are necessary based on a performance assessment of the system's effectiveness (Phase III).

Phase IV may indicate that adjustments to programs, objectives, and procedures are necessary. Output from this phase is fed back into Phase I, Planning, to make necessary changes and additions designed to bring the EMS to the desired level of effectiveness. This system feedback propels the continual improvement of the EMS.

The EMS continually moves through this cycle, fine-tuning its management of those areas of the organization's operations that interact with the environment. This continual improvement cycle is a core tenet of the EMS that allows the system to adapt to the dynamic nature of the organization's operations.



Implementing an EMS brings a number of benefits to DOE sites. It will enable sites to cost effectively protect the environment while executing their primary organizational missions. The inherent flexibility provided by these EMS elements allows users to implement EMSs at facilities of varying size, complexity, and missions, whether they be offices, laboratories, facilities, programs, or Agencies. Moreover, the EMS provides consistency and reliability in the management, assessment, and continuous improvement of environmental programs and controls. Finally, in contrast to crisis management, an EMS approach incorporates top management involvement, employee participation, and other mechanisms that shift the culture of the organization toward the establishment of the environmental ethic that results in the continual improvement of environment, safety, and health performance.

### **5.3 ISMS/EMS**

DOE O 450.1 requires DOE elements to ensure that site ISMSs include an EMS which meets several listed requirements. In those instances where ISMS is not applicable, DOE elements must ensure the implementation of an EMS. The integration of an EMS into an ISMS (hereinafter referred to as ISMS/EMS) provides a unified strategy for the management of resources, the control and attenuation of risks, and the establishment and achievement of the organization's environment, safety, and health goals. The ISMS/EMS should be viewed as an enhancement of ISMS that adds those EMS elements not previously included in the ISMS. For example, elements dealing with document control and records management have already been integrated into the ISMS and need not be replicated. The elements dealing with the identification of significant environmental aspects on the other hand may need to be added to the ISMS. Ultimately, the ISMS/EMS is intended to fully address the environment, safety, and health risks at DOE sites.

### **5.4 ISMS/EMS AT CLOSURE SITES**

Several sites within the DOE complex are designated as closure sites (i.e., sites that have ceased operations and have identified near term closure activities and schedules). Most of the sites are conducting cleanup and closure activities under the regulatory requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) or other legal agreements with the Environmental Protection Agency (EPA) and/or State environmental agencies.

A site conducting near term closure activities may have most of the elements of the ISMS/EMS available or completed. For example, identification of significant environmental aspects and impacts may have been identified in the remedial investigation/feasibility study (RI/FS) process under CERCLA. Environmental impact statements conducted pursuant to the National Environmental Policy Act may also yield important information.

Sites in the near term closure phase should consider how well environment was integrated in their existing ISMS and use a graded approach to supplement their existing ISMS to meet the requirements of DOE O 450.1.



## **6. INTEGRATING ENVIRONMENTAL MANAGEMENT SYSTEMS INTO INTEGRATED SAFETY MANAGEMENT SYSTEMS**

ISMS and EMS both strive for continual improvement through a **plan-do-check-act** cycle. This cycle calls for defining the scope and purpose of the system followed by a planning (**plan**) step to develop programs and procedures that must then be implemented (**do**). Once implemented, programs must be assessed (**check**) and any problems corrected (**act**) to improve the effectiveness of the management system and to achieve improved ES&H performance.

An EMS should consist of the following elements.

- Environmental Policy Statement
- Planning
- Implementation and Operation
- Checking and Corrective Action
- Management Review

Under ISMS, the term “safety” also encompasses health and environment (DOE P 450.4). Therefore, the guiding principles and core functions in ISMS are as applicable to the protection of the environment and employee health as they are to safety. The ISMS guiding principles and core functions are as follows.

### **Guiding Principles**

- Line management responsibility for ES&H
- Clear roles and responsibilities
- Competence commensurate with responsibilities
- Balanced priorities
- Identification of ES&H standards and requirements
- Hazard controls tailored to work being performed
- Operations authorization

### **Core Functions**

- Define scope of work
- Analyze hazards
- Develop and implement hazard controls
- Perform work within controls
- Provide feedback and continuous improvement

This section provides a description of the similarities between EMSs and ISMSs and provides a summary of the integration of these two systems. Figure 2 depicts how EMSs and ISMSs relate to each other.

**Figure 2. Overlap of ISMS Core Functions and EMS**



## 6.1 POLICY STATEMENT

An environmental policy statement addresses several of the core management system themes, such as:

- Showing clear management commitment is a critical element of nearly all recognized EMSs, and essential in practice for an effective EMS. A policy statement sends a message to employees, contractors, suppliers, regulators, and the general public that management is committed to the system.
- The policy statement can be the core framework for the entire EMS. It sets out broad principles such as regulatory compliance, pollution prevention, and continual improvement and describes the approaches by which the principles will be achieved and communicated to interested parties.

- Although organizations usually measure their EMS performance by assessing progress toward reducing identified environmental risks, it is the environmental policy that usually provides the ultimate benchmark of the system's performance. In a periodic management review, the ultimate question is whether the system is achieving the principles and spirit of the policy.

The core functions and guiding principles of ISMS do not address the development of a policy statement. However, it is not inconsistent with the principles of ISMS to develop an environment, safety, and health policy statement. As part of the integration of EMS into ISMS, senior management should issue a policy statement for a site or facility addressing environment, safety, and health. Further guidance on what a policy statement should contain and how it may be developed is provided in section 7.5.

## **6.2 SUMMARY OF ISMS/EMS INTEGRATION**

Paragraph 4a. of DOE O 450.1 requires that all DOE elements must ensure that a site's ISMS/EMS does the following.

1. Provides for the systematic planning, integrated execution, and evaluation of programs for:
  - public health and environmental protection,
  - Pollution prevention (P2), and
  - compliance with applicable environmental protection requirements.
2. Includes policies, procedures, and training to identify activities with significant environmental impacts; to manage, control, and mitigate the potential impacts of these activities; and to assess performance and implement corrective actions where needed.
3. Includes measurable environmental goals, objectives, and targets that are reviewed annually and updated when appropriate.

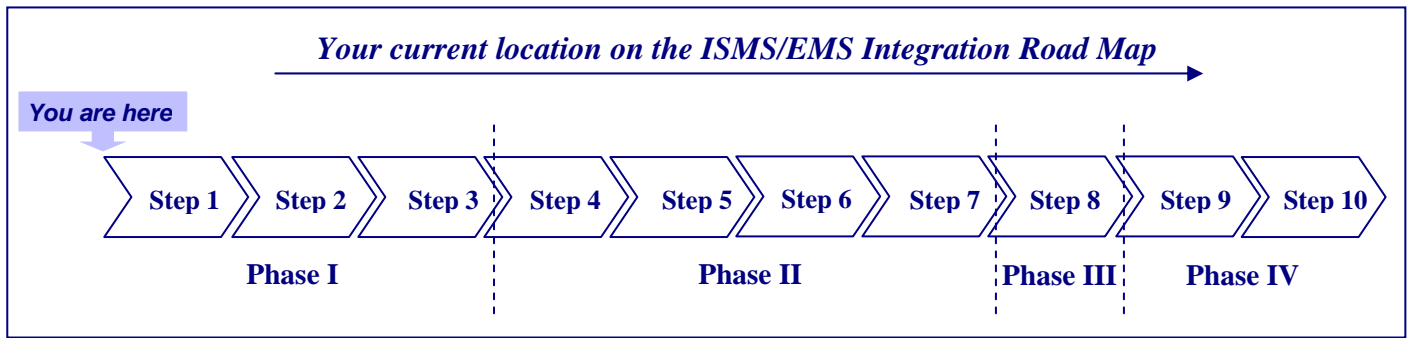
A complete list of all EMS elements required by the Order to be included in a site's ISMS/EMS is contained in Attachment 3 of this Guide.

To comply with the requirements of DOE O 450.1, the ISMS/EMS team (see section 7.2 for information on establishing an ISMS/EMS team) should progress through a typical EMS implementation schedule, integrating EMS elements into the existing ISMS where needed. The four major phases of this process are:

- Planning
- Implementation and Operation
- Checking and Corrective Action
- Management Review

Each of these four phases consists of steps that integrate EMS elements into a site's existing ISMS. This process should be carried out step-by-step for implementation to be efficient and for the ISMS/EMS to operate as expected. There are ten steps that comprise the four phases of implementation (see Figure 3). This section of the Guide discusses the similarities between the four phases of EMS implementation and the guiding principles and core functions of ISMS (see Figure 4 for a description of the major parallels between ISMS and EMS). This section also provides a brief summary of the steps in each phase as an overview of the entire integration process. Detailed guidance on the steps in each phase will be issued in the near future. For definitions, see Attachment 5 of this Guide.

**Figure 3. ISMS/EMS Integration Road Map**



### 6.2.1 Phase I—Planning

Paragraph 4a(1) of DOE O 450.1 requires that DOE site ISMSs include an EMS that provides for systematic planning, integrated execution, and evaluation of programs for public health and environmental protection, pollution prevention, and compliance with applicable environmental protection requirements. The planning function of EMS can be addressed in the first three core functions of ISMS: define the scope of work, analyze the hazards, and develop and implement hazard controls.

Part of the planning process under paragraph 4a(3) of DOE O 450.1 is the identification of measurable environmental goals, objectives, and targets. This requirement parallels the process of developing and implementing hazard controls under ISMS where certain hazards (or impacts) are identified for special focus and management in order to achieve continual improvement. These hazards and impacts are monitored to establish whether objectives and targets are being achieved as planned.

**Figure 4. Major parallels between ISMS and EMS**

	<b>Integrated Safety Management System</b>	<b>Environmental Management System</b>
		➤ Policy
<b>PLAN</b>	<b>Analyze Hazards</b>	<b>Planning</b>
	<ul style="list-style-type: none"> <li>➤ Identification of Safety Hazards and Requirements                             <ul style="list-style-type: none"> <li>▪ Analyze Hazards</li> </ul> </li> <li>➤ Safety Standards and Requirements</li> <li>➤ Balanced Priorities</li> <li>➤ Line Management Responsibility</li> <li>➤ Clear Roles and Responsibilities</li> </ul>	<ul style="list-style-type: none"> <li>➤ Environmental Aspects                             <ul style="list-style-type: none"> <li>▪ Determine Significant Aspects</li> </ul> </li> <li>➤ Legal and other Requirements</li> <li>➤ Measurable Environmental Goals, Objectives and Targets</li> <li>➤ Environmental Management Programs</li> </ul>
<b>DO</b>	<b>Develop &amp; Implement Hazard Controls</b>	<b>Implementation &amp; Operation</b>
	<ul style="list-style-type: none"> <li>➤ Hazard Controls Tailored to Work</li> <li>➤ Perform Work Within Controls</li> <li>➤ Clear Roles and Responsibilities</li> <li>➤ Competence Commensurate with Responsibilities</li> </ul>	<ul style="list-style-type: none"> <li>➤ Structure and Responsibility</li> <li>➤ Training, Awareness, and Competence</li> <li>➤ Communication</li> <li>➤ Document EMS</li> <li>➤ Document Control</li> <li>➤ Operational Control</li> <li>➤ Emergency Preparedness and Response</li> </ul>
<b>CHECK</b>	<b>Provide Feedback &amp; Continuous Improvement</b>	<b>Checking &amp; Corrective Action</b>
	<ul style="list-style-type: none"> <li>➤ Provide Feedback on Adequacy of Controls</li> <li>➤ Continuous Improvement in Defining and Planning Work</li> </ul>	<ul style="list-style-type: none"> <li>➤ Monitoring and Measurement</li> <li>➤ Nonconformance Corrective/Preventive Action</li> <li>➤ Records</li> <li>➤ EMS Audit/Self-assessment</li> <li>➤ Management Review</li> <li>➤ Continuous Improvement</li> </ul>
<b>ACT</b>	<b>Annual ISMS Review</b>	<b>Management Review</b>
	➤ Continuous Improvement	➤ Continuous Improvement

*Step 1—Identifying Environmental Aspects*

Identify how the activities, products, and services of the organization may interact with the environment. For example, some activities can cause ground water contamination as a result of spills; others may create habitats for flora and fauna. These potential interactions (e.g., spills, habitat creation) are environmental aspects (ground water contamination and increased diversity of flora and fauna are the impacts).

*Step 2—Determining Significant Aspects*

For each environmental aspect, determine the consequence of its occurrence and the likelihood that it will occur. Combined, these two characteristics describe the potential impact of an environmental aspect. Next, an organization should determine whether the environmental aspect is significant. Significant environmental aspects are those aspects that have or could have a significant impact on the environment, the organization, or to the organization's mission.

*Step 3—Setting Measurable Environmental Goals, Objectives, and Targets*

Set measurable goals, objectives, and targets which address all significant environmental aspects and achieve the commitments made in the ES&H policy (e.g., pollution prevention goals such as reductions in waste generation and releases to the environment).

**6.2.2 Phase II—Implementation and Operation**

In an EMS, implementation and operation developing and maintaining programs and procedures, conducting training, establishing operational controls and other elements. This EMS element is addressed in ISMS core functions three and four: develop and implement hazard controls and perform work within controls. Training is also addressed in ISMS guiding principle three: competence commensurate with responsibilities. The results of an EMS gap analysis should assist a site in determining the extent to which existing ISMS elements satisfy the requirements of DOE O 450.1 or whether they will need additions or amendments (see section 7.3 for a discussion on conducting a gap analysis).

*Step 4—Documenting the ISMS/EMS*

The ISMS description should be modified to make reference to additional documents and procedures developed to ensure that the elements of an EMS are integrated into the site's ISMS.

*Step 5—Developing Environmental Management Programs (EMPs)*

As needed, develop or revise existing programs to include plans for the achievement of measurable goals, objectives, and targets. These programs should specify the resources (human and financial) designated for specific activities, controls, and procedures needed to achieve the goals, objectives, and targets.

*Step 6—Developing Operational Controls*

As needed, develop or revise existing operational controls. Operational controls can be either administrative or engineering controls and are used to control potential environmental impacts. For example, operational controls could be applied to transporting waste drums to reduce the opportunity for spills. Adherence to these controls will support the achievement of goals, objectives, and targets.

### *Step 7—Developing ISMS/EMS Procedures*

In many cases, DOE sites will not need to develop new procedures, but can use existing ISMS procedures or revise them to include missing EMS elements. For example, a site may need to develop procedures on how to identify environmental aspects.

### **6.2.3 Phase III—Checking and Corrective Action**

In an EMS, checking and corrective action includes maintaining procedures to monitor and measure the characteristics and progress of the EMS on a regular basis. This element is addressed in the fifth ISMS core function: provide feedback and continuous improvement. The ISMS description (DEAR 970.5223-1) requires the contractor to provide feedback on adequacy of operational controls, on continuing to improve ES&H management, and on measuring system effectiveness. Again, the results of a gap analysis should assist sites in determining whether any revisions need to be made to existing feedback and corrective action processes.

### *Step 8—Establishing the ISMS/EMS Assessment Program*

The site's existing ISMS assessment program should be modified to include a structured, formal self-assessment of all elements of the ISMS/EMS, including the level of implementation and operational effectiveness of procedures, programs, and controls, in addition to the level of progress made toward objectives and targets. Assessments should identify nonconformity, root causes, trends, and corrective actions. Assessments should also be consistent with DOE O 226.1, *Implementation of Department of Energy Oversight Policy*, dated 9-15-05.

### **6.2.4 Phase IV—Management Review**

An EMS management review is a periodic assessment (at a predetermined frequency) by senior management of how well the management system is functioning and whether the established environmental goals, objectives, and targets are being achieved. This EMS element is covered in the fifth ISMS core function: provide feedback and continuous improvement. The adequacy, suitability, and effectiveness of the management system processes should be reviewed for opportunities to improve the system's effectiveness. DEAR clause 970.5223-1 requires an annual review of the ISMS by the contractor and by DOE; this review should assess the adequacy, suitability, and effectiveness of the ISMS/EMS. The gap analysis will ascertain whether other provisions for this element are needed.

### *Step 9—Developing the Management Review Process*

Develop a process whereby management can assess ISMS/EMS performance based on available evidence and make decisions that drive continual improvement of the system. Present management with findings and analyses that fully describe ISMS/EMS performance elements such as the effectiveness of the ISMS/EMS, overall improvement of environmental performance, successful and unsuccessful programs, nonconformity with procedures and operational controls, and the level of achievement of objectives and targets. This process should be integrated with the annual ISMS review.

*Step 10—Developing a Plan to Keep the ISMS/EMS Updated*

Develop a plan that includes a schedule to review and update, as needed, all elements of the ISMS/EMS. In addition, develop approaches to maintaining the momentum of the ISMS/EMS, including management involvement and employee participation and interest (see also DOE G 450.4-1B, Chapter IV).

## **7. PREPARING TO INTEGRATE AN ENVIRONMENTAL MANAGEMENT SYSTEM INTO AN INTEGRATED SAFETY MANAGEMENT SYSTEM**

Integrating EMS elements into ISMS will lead organizations to follow much the same process they would if implementing a freestanding EMS.

There are some important preparatory tasks that an organization should carry out initially to facilitate the ten steps to full integration, including:

Preparatory tasks

**Task 1—Selecting the ISMS/EMS team leader**

**Task 2—Establishing the ISMS/EMS team**

**Task 3—Conducting the ISMS/EMS gap analysis**

**Task 4—Defining the Scope of the ISMS/EMS**

**Task 5—Writing the ES&H policy statement**

These tasks can have a substantial impact on the efficiency of implementation and the value provided by the ISMS/EMS. Therefore, it is critical that they be carefully considered and completed.

### **7.1 TASK 1—SELECTING THE ISMS/EMS TEAM LEADER**

DOE operations/field/site office managers and cognizant contractor managers should select the team leaders for their organizations/sites. These managers should also choose the remainder of the ISMS/EMS integration team.

The team leader should be selected for his or her knowledge of site operations, EMS, ISMS, and existing ES&H controls. He or she should preferably be someone with the leadership skills necessary to promote an initiative that requires cooperation, coordination, and change management across the many entities, functions, and interests at a DOE site. The following are some of the characteristics of a suitable ISMS/EMS team leader.

- **Employee trust.** The team leader should be someone employees trust, relate to, and feel comfortable with.



- **Management trust.** The team leader should be someone that senior management trusts to make wise decisions and wise, pragmatic use of resources, including employee time.
- **Energy and creativity.** The team leader should be energetic and creative in leading the team and ultimately the entire organization in investigating the environmental consequences of the organization's activities, products, and services and implementing procedures and programs as part of a system that establishes the environmental ethic and continuously addresses the environmental impacts of the organization.
- **Confidence and organizational skills.** The team leader should be someone who has confidence and organizational skills to lead and direct the ISMS/EMS team.

## 7.2 TASK 2—ESTABLISHING AN ISMS/EMS TEAM

Senior management will need to establish site ISMS/EMS teams, drawn from a cross-section of internal functions, to take on the responsibility for developing the ISMS/EMS. The team size and makeup will vary by individual sites and should include those individuals that have knowledge of site operations, those with extensive understanding of EMS and ISMS, and those with experience of environmental programs and issues. The team can include representatives from the appropriate program offices, environmental, health and safety, quality, personnel, legal, documents and records management, communications, facilities, and design functions, among others.

### 7.2.1 ISMS/EMS Team Training

Once the team is established, team members should review available information on the elements of EMS, ISMS, and the requirements and approaches for integration. Many commercial and government training organizations offer training on EMSs.

## 7.3 TASK 3—CONDUCTING THE ISMS/EMS GAP ANALYSIS

As a first step, the ISMS/EMS team should conduct a gap analysis to establish the existing site EMS baseline. This is achieved by comparing the requirements set out in DOE O 450.1 against existing site management system descriptions, policies, and procedures. The gap analysis will determine what EMS elements are already in place and to what degree EMS requirements are addressed by existing ISMS procedures. For example, the gap analysis will determine whether there is a documented procedure for providing training and whether programs and procedures are effectively integrated and operating as parts of a comprehensive, coordinated system. Having done this comparison, the ISMS/EMS team can determine which elements must be expanded, supplemented, or established to fully conform to DOE O 450.1. (Note that this gap analysis does not identify the organization's environmental aspects; this is done later, in the early stages of planning.) In general the gap analysis should do the following.

- Assess whether existing programs, procedures, and controls fully address the EMS elements required by DOE O 450.1.
- Identify any need for new or revised programs and procedures.

- Establish whether the significant environmental aspects (operational influences on the environment) of site/organization activities, products, or services have been identified.
- Identify whether measurable goals, objectives, and targets have been established to address the significant environmental aspects of the site's activities, products, and services.

Attachment 1 provides an example of a gap analysis questionnaire that is based on the ISMS/EMS integration process discussed in section 6 and which also includes requirements from DOE O 450.1. The gap analysis may include more detailed questions to assess the operational status of system components and other arrangements for regulatory compliance or for control of environmental exposures. DOE sites have the option of conducting a gap analysis as part of their annual ISMS review.

## **7.4 TASK 4—DEFINING THE SCOPE OF THE ISMS/EMS**

### **7.4.1 Organizational Scope**

Organizational scope refers to the set of facilities or activities covered by an ISMS/EMS. DOE O 450.1 does not prescribe the organizational scope of an EMS that is integrated into a site's ISMS. An ISMS/EMS may include one or more geographic sites within one management organization. For example, Western Area Power Administration has implemented an EMS for its entire system across 15 States, the Strategic Petroleum Reserve's ISMS/EMS covers sites in Louisiana and Texas, and the Kansas City Plant's EMS covers one single large building. On the other hand, separate major contractors at Hanford each have a separate ISMS/EMS.

The organizational scope of the ISMS/EMS should usually parallel the scope of the existing ISMS and should include all activities that occur within that scope, including DOE field offices, contractors (with appropriate flow-down to subcontractors), and other tenant organizations. The ISMS/EMS at the Savannah River Site includes the DOE field office, all DOE facilities on site, the Savannah River Ecology Laboratory, the U.S. Forest Service activities on site and the General Services Administration activities on site.

Implementation of an ISMS/EMS at a large site with multiple, semiautonomous divisions may best be approached by taking advantage of the divisional structure on the site. This approach was successfully employed at Brookhaven National Laboratory. The ISMS/EMS was developed centrally for the entire laboratory, and many of the functions of the ISMS/EMS, such as document control and records management, were executed through a centralized, online management system. However, each division was given responsibility to analyze its own separate activities, products, and services; to identify the environmental aspects that were present in those activities, products, and services; to select those aspects that were significant; and, importantly, to define their EMPs and all the details that go into them such as operational controls, objectives and targets, performance indicators, roles, authorities and responsibilities, and training needs. These divisional subsystems were tested and approved individually (primarily through third-party audits) and were later integrated into a site-wide ISMS/EMS,

although each division still retains responsibility for its own environmental aspects and the EMPs that address those aspects.

Where separate ISMS/EMS systems exist for different entities on one site, the ISMS/EMS documentation should clearly identify the organizational and geographic boundaries to indicate that which is included and that which is not included in the ISMS/EMS. The ISMS/EMS team should review this documentation to ensure that all site-wide issues and cumulative impacts are addressed and that no activities or impacts are overlooked.

#### **7.4.2 Subject Matter Scope**

The ISMS/EMS should address all of the subject matter areas covered in paragraph 4b(1) of DOE O 450.1, (e.g., cultural resource protection, watershed management) unless they are not applicable to the site. If they are not applicable, a site is expected to make an affirmative declaration that certain subject matter areas are not applicable. The subject matter areas identified in DOE O 450.1 constitute the minimum scope of “environment” for the purposes of an ISMS/EMS. For example, if site activities have the potential to affect cultural resources, then cultural resources should be included within the policies, programs, and procedures of the ISMS/EMS. Potential impacts to cultural resources should be identified, appropriate programs and controls should be established, and monitoring and feedback on the accomplishment of objectives and targets should be provided. If the site’s operations do not affect any cultural resources, the ISMS/EMS should note that the issue was considered but found unnecessary to include. Additional guidance will be provided in the near future on subject areas covered by DOE O 450.1.

#### **7.4.3 Closure Sites**

A graded approach may be the best process to implement the ISMS/EMS at a closure site. For example, the Fernald Environmental Management Project shut down production activities in 1989. The cleanup is being conducted under CERCLA, and in accordance with approved Records of Decision (RODs), work plans and legal agreements with EPA and the State of Ohio. Completion of cleanup is scheduled for 2006. Much of the systematic approach of an EMS is realized through the CERCLA investigation, planning, stakeholder review, implementation, and monitoring process.

The major elements of an ISMS/EMS, are: planning, implementation and operation, checking and corrective action, and management review, and are discussed in section 6 of this Guide. For example, identifying environmental aspects and impacts, which is part of the planning element, may have been accomplished during the RI/FS process. The site’s objectives and targets, which are also part of the planning element, may have been determined through pathway analysis and establishment of cleanup levels and programs/activities approved in RODs and work plans. Elements of implementation and operation and checking and corrective action would be part of the site’s CERCLA cleanup program. Closure sites may be further along in the implementation of many elements of an ISMS/EMS than many operating sites. They have conducted extensive planning and analysis activities that can be incorporated into their ISMS/EMS.

## 7.5 TASK 5—WRITING THE ENVIRONMENT, SAFETY, AND HEALTH POLICY STATEMENT

Each site implementing an ISMS/EMS should develop an ES&H policy statement. The policy statement should reflect the nature and scale of the organization's activities, products, and services and embody the organization's commitment to—

- compliance with laws and applicable requirements,
- pollution prevention,
- continual improvement of the management system and of ES&H performance, and
- integration of environmental accountability into decision making processes.

The understanding gained in the training, in conducting the gap analysis, and in developing the ISMS/EMS scope will assist the ISMS/EMS team in its development of the ES&H policy statement. Sites may also base their ES&H policy statements on any existing ISMS policy statements or other policy statements at the site. The site ES&H policy statement should express management's commitment to identifying and addressing potential environmental, safety, and health risks from site activities. The site's ES&H policy statement should serve as a framework for setting and reviewing a facility's environmental goals, objectives, and targets. The ISMS/EMS team should review and reference as appropriate, DOE Directives listed below and implemented through DOE Orders (particularly DOE O 450.1) to develop the site's ES&H policy statement.

- DOE P 450.2A, *Identifying, Implementing and Complying with Environment, Safety and Health Requirements*, dated 5-15-96
- DOE P 450.4, *Safety Management System Policy*, dated 10-15-96
- DOE P 450.7, *Department of Energy Environment, Safety and Health (ES&H) Goals*, dated 8-2-04
- DOE P 141.2, *Public Participation and Community Relations*, dated 5-2-03
- DOE O 226.1, *Implementation of Department of Energy Oversight Policy*, dated 9-15-05

The following are examples of language that can be used in policy statements to address various environmental areas applicable to DOE sites.

- **Regulatory Compliance**

We will identify and comply with all applicable environmental laws and regulations at each location where we conduct business.

- **Pollution Prevention**

We will seek, first, to cost effectively avoid the generation of pollution and waste from our processes and services and, second, to manage remaining waste through safe and responsible methods and vendors. We will also seek to avoid the release of hazardous substances into the environment by using environmentally preferable products in our processes and services whenever cost-effectively feasible.

- **Conservation**

We will strive to diminish our consumption of natural resources through cost-effective reuse of materials and use of recycled-content materials, and conservation of energy and water.

- **Emissions and Effluents**

We will work to reduce our emissions and effluents by employing cost-effective operational controls, by diligently monitoring operational indicators to determine when corrective actions are needed, and by implementing corrective and preventive actions whenever necessary.

- **Design for Environment**

We will develop or procure products that have been designed to prevent pollution and that are safe for their intended use, efficient in their use of energy, protective of the environment and that can be recycled or disposed of safely.

- **Responsible Neighbor**

We will be an environmentally responsible neighbor in the communities where we operate and act quickly and responsibly to correct incidents or conditions that endanger health, safety, or the environment, report them to authorities promptly, and inform everyone who may be affected by them.

- **Cultural Resources**

We will be attentive in our operations and activities to avoid unnecessary harm to cultural resources (e.g., an action that threatens, disturbs, damages, or destroys historic properties, cultural landscapes, cultural items, archeological resources, Indian sacred sites, cemeteries).

- **Organizational Planning**

We will incorporate environmental considerations into our organizational planning processes.

- **Responsible Partnerships**

We will work with stakeholders to address mutual environmental concerns and will encourage suppliers, vendors, and contractors to comply with similar environmental protection goals.

- **Ecology, Habitats, Endangered Species**

We will be attentive in our operations and activities to avoid unnecessary harm to endangered species, natural habitats and ecologically sensitive areas.

- **Communication**

We will communicate this policy to all employees and make it available to the public and our stakeholders, and consider public input, and incorporate or otherwise respond to stakeholder views when making decisions. We will also alert potentially affected individuals and authorities of any environmental incident in a timely manner to empower participation at appropriate stages of the decision making process.

It may be appropriate for the Program Secretarial Office, the head of a DOE field office, and the head of a DOE contractor organization to each issue a policy statement, with appropriate scope. Alternatively, the DOE field office and contractor can jointly issue a policy statement. Once senior management has endorsed the policy statement, it should be communicated to all staff and made available to the public. DOE sites should use existing mechanisms to communicate the policy statement to its staff and the public.

## **8. ISMS/EMS FRAMEWORKS**

DOE O 450.1 does not require DOE elements to implement any specific EMS model or standard. The Order does include the EMS elements (see Attachment 3 of this Guide) that are required to be included in an ISMS/EMS. DOE elements implementing the requirements of the Order may opt to use the ISO 14001 standard or any other model that meets the requirements of the Order. To ensure a high-level commitment to the establishment of the EMS portion of ISMS, Program Secretarial Officers (PSOs), the Administrator for National Nuclear Security Administration, and Administrators for the Power Administrations, in consultation with DOE operations/field/site office managers should make the decision regarding whether a DOE site's EMS will follow the ISO 14001 standard or another EMS framework. Regardless of which model is chosen, the EMS elements must still be compatible with, and integrated into, the site ISMS.

Paragraph 3a(2) of DOE O 450.1, provides for those instances where requirements for ISMSs are not applicable. In those cases, DOE elements must ensure the implementation of EMSs. These DOE sites have the choice of using one of the implementation frameworks discussed below but do not have to integrate their EMS with ISMS.

## **8.1 FRAMEWORK 1: SELF-DECLARATION**

A DOE site can implement the elements of an ISMS/EMS within the context of its existing ISMS, which meets all the requirements of DOE O 450.1. The site can then self-declare conformity of its ISMS/EMS to the requirements of the Order (see section 9.1 for details on self-declaration). When selecting framework 1 or 2, DOE sites should clearly define the elements of the EMS as part of their ISMS.

## **8.2 FRAMEWORK 2: THIRD-PARTY REGISTRATION TO ISO 14001**

A DOE site can implement the elements of an ISO 14001 EMS within the context of its existing ISMS, which meets all the requirements of DOE O 450.1. The site may then seek third-party registration (see section 9.2 for details on third-party registration). Several DOE sites have already chosen this course, although it is not required by DOE O 450.1.

# **9. ASSESSING AND REPORTING IMPLEMENTATION OF THE MANAGEMENT SYSTEM REQUIREMENTS OF DOE O 450.1**

DOE O 450.1 requires PSOs, the Administrator for National Nuclear Security Administration, and Administrators for the Power Administrations to ensure that by December 31, 2005, all sites under their purview have implemented the management system requirements of the Order [paragraph 5c(1)]. Managers of DOE operations, field, or site offices are required by the Order to report by December 31, 2005, to the Cognizant Secretarial Officer (CSO) the status regarding whether the EMS requirements of DOE O 450.1 have been integrated into ISMSs by site contractors [paragraph 5d(1)]. This section provides guidance regarding how a DOE site can demonstrate that it has an ISMS/EMS that meets the requirements of the Order.

## **9.1 SELF-DECLARATION**

As discussed in section 8, DOE sites may choose between two frameworks for declaring conformity to the Order. Under framework 1, DOE sites can either self-declare conformity with the Order or use third-party registration to demonstrate conformance. Under framework 2, DOE sites obtain third-party registration to ISO 14001, but ISO 14001 registration alone does not satisfy the requirements of DOE O 450.1.

Self-declaration means that a site publicly asserts that its ISMS/EMS fully conforms to the requirements of DOE O 450.1. To be credible, the self-declaration process should be based upon a conclusion of conformity reached after the organization has completed an internal environmental management system evaluation and determined that its ISMS/EMS conforms to the requirements of the Order.

Under either approach, the process should be transparent, thus providing credibility to interested parties. The evaluation should be thorough and systematic.

The Office of Environment, Safety and Health has developed a self-declaration procedure that DOE sites may use (Attachment 2 of this Guide). This procedure was developed pursuant to the *Agency Self-Declaration Protocols for Appropriate Federal Facilities*, September 10, 2003, which was developed by the E.O. 13148 Interagency Working Group. This procedure should be used in conjunction with Attachment 3, *Elements of an ISMS/EMS Required by DOE O 450.1*, which contains the EMS elements required by DOE O 450.1 to be included in a site's ISMS/EMS. Attachment 3 can also be used to develop an evaluation checklist or lines of inquiry that can be used during the evaluation.

Alternatively, sites may use existing review/evaluation/audit processes already established under ISMS. However, sites using this option must comply with the reporting requirements of paragraph 5(d)(1) of DOE O 450.1 and should prepare a report letter pursuant to section 9.3.1 of this Guide. Sites using this option should also prepare a self-declaration statement that can be publicly issued on its site's web site (see Attachment 2 for a sample statement).

## **9.2 FIRST-PARTY, SECOND-PARTY,<sup>1</sup> OR THIRD-PARTY AUDIT (ASSESSMENT) OF ISMS/EMS**

An EMS audit (assessment) is a systematic and documented verification process of objectively obtaining and evaluating evidence to determine whether an organization's EMS conforms to the EMS audit criteria set by the organization and for communication of the results of this process to management. The three types of EMS audits (assessments) are first, second, or third party.

**First-party audits** are conducted by the participants within the scope of the EMS under consideration. A first-party audit (or assessment) serves the primary purpose of ensuring that an EMS is in place and functioning properly. It can provide the basis for a self-declaration of conformance with the requirements of DOE O 450.1.

It is appropriate for describing an assessment which forms the basis for a declaration of conformance to the EMS requirements of DOE O 450.1. The definition is provided here to ensure consistency in DOE reporting and will be used in reporting the Department's implementation of EMS in the Department's annual report to EPA [DOE O 450.1, paragraph 5a(2)(b)].

**Second-party audits (assessments)** are conducted by reviewers from outside the scope of the EMS in question. A second-party audit (assessment) can be conducted by members of the same organization, a sister organization, Federal or contractor personnel, etc., so long as the assessors are from outside of the scope of the EMS.

**Third-party audits (assessments)** of a site's ISMS/EMS are an option that DOE sites may choose. Registration is based on an audit by an independent third-party registrar, based on the ISO 14001 standard, and lasts for 3 years. During this period, the registrar will conduct periodic

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<sup>1</sup>The definitions for first- and second-party audits were developed for Federal agencies by the Federal Interagency Environmental Leadership Workgroup established under Executive Order 13148.



verification audits. Renewal after 3 years is based on the assessment of the registrar that may or may not include another full audit. **Third-party registration is not a requirement of DOE O 450.1.** An ISMS/EMS that conforms to all the requirements of the ISO 14001 standard must still meet all the requirements of the Order.

### **9.3 DOE O 450.1 REPORT LETTER REQUIREMENT**

This section outlines the information that should be included in the report letter from the operations, field, or site office manager to the CSO by December 31, 2005 [pursuant to DOE O 450.1, paragraph 5d(1)], with a copy to the Office of Environment, Safety and Health, reporting whether the EMS requirements of DOE O 450.1 have been implemented and integrated into the site's ISMS.

Attachment 4 of this Guide provides sample formats for the report letter. Site office managers may use an alternate format so long as it provides the following information:

- status of EMS implementation at the site;
- statement of the basis for EMS conformity declaration: first-, second-, or third-party assessment;
- information on incorporation of DOE O 450.1 into the site contract;
- status of integration of EMS into ISMS at the site; and
- confirmation that the contractor's ISM system description has been updated to include the EMS requirements of DOE O 450.1 [pursuant to paragraph 5d(2)].

If EMS is not fully implemented on December 31, 2005, sites are expected to continue reporting the implementation status on a quarterly basis to their designated program office point of contact until the operations/field/site office manager can formally report that the site fully conforms to the EMS requirements of DOE O 450.1.

#### **9.3.1 Report Letter—Framework 1**

The report letter should include an affirmation by the operations/site/field office manager that the site has implemented an ISMS/EMS which meets the requirements of DOE O 450.1 and that the following have been reviewed.

- ES&H (or environmental) policy statement
- Current approved ISMS description (including ISMS/EMS)
- Current list of significant aspects
- Current list of measurable environmental goals, objectives, and targets

Supporting documentation must be available on request by the PSO; the Office of Environment, Safety and Health; or the Office of Independent Oversight and Performance Assurance, but need not be attached to the letter.

### **9.3.2 Report Letter—Framework 2**

If the site ISMS/EMS is third-party registered to the ISO 14001 standard, the report letter from the operations/site/field office manager should include the following.

- The name and address of the third-party registrar, the date of registration audit, and the date of the most recent verification audit.
- An affirmation by the operations/site/field office manager that the site has implemented an ISMS/EMS that meets the requirements of DOE O 450.1.

Attachment 5 (Glossary) in this Guide defines the terms “first-party audits,” [assessments] “external second-party audits,” and “external third-party audits.” They are appropriate for describing the assessments which form the basis for a declaration of conformance to the EMS requirements of DOE O 450.1. The definitions are provided to ensure consistency in DOE reporting and will be used in reporting the Department’s implementation of EMS in the Department’s annual report to EPA [DOE O 450.1, paragraph 5a(2)(b)].

### GAP ANALYSIS WORKSHEET

Instructions: The left column of this worksheet includes all the requirements needed to conform to the elements of an Environmental Management System (EMS) and DOE O 450.1, *Environmental Protection Program*, dated 1-15-03. The right column has been left blank so that a DOE site can describe how each EMS element is covered under the site's ISMS or other relevant management system (including an existing EMS). All identified gaps should be identified in the right column.

EMS ELEMENTS (Based on Elements of an EMS and DOE O 450.1)	Gaps Remaining after Comparison to ISMS
<p><b>Environmental Policy</b></p> <p>An environmental policy has been developed by senior management that includes the following.</p> <ul style="list-style-type: none"> <li>• It is appropriate for the nature, scale, and environmental impacts of the site's activities, products, and services.</li> <li>• It includes a commitment to continual improvement in the prevention of pollution.</li> <li>• It includes a commitment to comply with relevant environmental legislation, regulations, and requirements.</li> <li>• It includes a commitment to promote long-term stewardship of the site's natural and cultural resources.</li> <li>• It provides a framework for setting and reviewing environmental objectives and targets.</li> <li>• It is documented, implemented, and maintained.</li> <li>• It has been communicated to all employees.</li> <li>• It is available to the public</li> </ul>	
<p><b>Planning (Phase I)</b></p> <p>The EMS does the following.</p> <ul style="list-style-type: none"> <li>• Provides for the systematic planning of programs for pollution prevention.</li> <li>• Provides for the systematic planning of programs for public health and environmental protection.</li> </ul>	

<p align="center"><b>EMS ELEMENTS</b> (Based on Elements of an EMS and DOE O 450.1)</p>	<p align="center"><b>Gaps Remaining after Comparison to ISMS</b></p>
<p><b>Environmental Aspects</b></p> <ul style="list-style-type: none"> <li>• A procedure exists to identify environmental aspects and determine which have significant impacts on the environment.</li> <li>• Procedure includes consideration of existing National Environmental Policy Act documentation to identify impacts.</li> <li>• Procedure promotes use of a comprehensive analysis that (1) accounts for all sources of release and contamination, (2) assesses composite impacts (e.g., impacts to all media from radiation) of operations and activities and their implications for near- and long-term environmental management of the site with regard to legal requirements and environmental performance objectives, and (3) integrates with other relevant site-wide natural and cultural resource processes (e.g., existing land-use planning processes) to ensure consistent management criteria are used throughout the site.</li> <li>• Significant aspects are considered when setting environmental objectives</li> <li>• This information is kept up-to-date.</li> </ul>	
<p><b>Legal and Other Requirements</b></p> <ul style="list-style-type: none"> <li>• A procedure exists to identify and have access to legal and other requirements pertaining to environmental aspects.</li> <li>• EMS includes systematic planning of programs for compliance with applicable requirements.</li> <li>• Consider the following (if applicable) when identifying legal requirements and other requirements: requirements relating to Clean Air Act General Conformity; implementation of a watershed approach for surface water protection; implementation of a site-wide approach for ground water protection; protection of natural resources, including biota; protection of site resources from wildland and operational fires; protection of cultural resources.</li> </ul>	

<p align="center"><b>EMS ELEMENTS</b> (Based on Elements of an EMS and DOE O 450.1)</p>	<p align="center"><b>Gaps Remaining after Comparison to ISMS</b></p>
<ul style="list-style-type: none"> <li>• Provides for reduction or elimination of waste generation, the release of pollutants to the environment, and the use of Class I ODS through source reduction, reuse, segregation, and recycling and by procuring recycled-content materials and environmentally preferable products and services.</li> <li>• Promotes the long-term stewardship of a site's natural and cultural resources throughout its operational, closure, and postclosure life cycle.</li> </ul>	
<p><b>Objectives and Targets</b></p> <ul style="list-style-type: none"> <li>• Objectives and targets have been established at each relevant function and level.</li> <li>• Establish measurable goals, objectives and targets.</li> <li>• Develop site-specific goals that contribute to the accomplishment of the DOE pollution prevention and energy efficiency goals.</li> <li>• Contractor ES&amp;H performance objectives, performance measures, and commitments include appropriate environmental elements based on the environmental risks, impacts of activities at the site and established Departmental pollution prevention/energy efficiency goals.</li> <li>• Legal and other requirements were considered in establishing them.</li> <li>• Significant environmental impacts were considered in establishing them.</li> <li>• Technological options were considered in establishing them.</li> <li>• Financial, operational, and business requirements were considered in establishing them.</li> <li>• The views of interested parties were considered in establishing them.</li> <li>• They are consistent with the environmental policy.</li> </ul>	

<p align="center"><b>EMS ELEMENTS</b> (Based on Elements of an EMS and DOE O 450.1)</p>	<p align="center"><b>Gaps Remaining after Comparison to ISMS</b></p>
<p><b>Environmental Management Program</b></p> <p>An environmental management program for achieving objectives and targets has been established and includes the following.</p> <ul style="list-style-type: none"> <li>• Designation of responsibility for achieving objectives and targets at each relevant function and level of the company.</li> <li>• The means and time frame for accomplishment.</li> <li>• The program applies to new developments, new or modified activities, products, and services.</li> <li>• Includes policies and procedures to manage, control, and mitigate the potential impacts of site activities with significant impacts.</li> <li>• Includes (if applicable) the following: requirements relating to Clean Air Act General Conformity; implementation of a watershed approach for surface water protection; implementation of a site-wide approach for ground water protection; protection of natural resources, including biota; protection of site resources from wildland and operational fires; protection of cultural resources; and reduction and elimination of waste generation, the release of pollutants to the environment and use of Class I ODS through source reduction, reuse, segregation, and recycling and by procuring recycled-content materials and environmentally preferable products and services.</li> <li>• Includes development and implementation of cost-effective pollution prevention programs that use life-cycle assessment concepts and practices in determining program return-on investment.</li> <li>• Promotes long-term stewardship of a site’s natural and cultural resources throughout its operational, closure, and post-closure life cycle.</li> </ul>	
<p><b>Implementation and Operation (Phase II)</b></p> <ul style="list-style-type: none"> <li>• Provides for the integrated execution of programs for public health and environmental protection, pollution prevention, and compliance with applicable requirements.</li> </ul>	

<p align="center"><b>EMS ELEMENTS</b> (Based on Elements of an EMS and DOE O 450.1)</p>	<p align="center"><b>Gaps Remaining after Comparison to ISMS</b></p>
<p><b>Structure and Responsibility</b></p> <ul style="list-style-type: none"> <li>• Roles, responsibilities, and authorities are defined, documented, and communicated.</li> <li>• Resources are provided that are essential to the implementation and operation of the environmental management system.</li> <li>• A specific management representative (one or more) has been appointed by senior management with defined roles, responsibility, and authority for establishing, implementing, and maintaining an EMS and reporting on the performance of the EMS to senior management.</li> </ul>	
<p><b>Training, Awareness, and Competence</b></p> <ul style="list-style-type: none"> <li>• Training needs are identified and all personnel whose work may create a significant impact upon the environment have received appropriate training.</li> <li>• Procedures are established and maintained to make appropriate employees aware.</li> <li>• Personnel performing tasks that can cause significant environmental impacts are competent.</li> <li>• Includes training to identify activities with significant environmental impacts.</li> <li>• Includes training to manage, control, and mitigate the potential impacts of site activities with significant environmental impacts.</li> <li>• Includes training to assess performance and implement corrective actions where needed.</li> </ul>	
<p><b>Communication</b></p> <p>The site has established and maintains procedures for the following.</p> <ul style="list-style-type: none"> <li>• Communicating internally communications among levels and functions.</li> <li>• Receiving, documenting, and responding to relevant communication from external interested parties.</li> <li>• Communicating externally on its significant environmental aspects and recording its decision.</li> </ul>	

<p align="center"><b>EMS ELEMENTS</b> (Based on Elements of an EMS and DOE O 450.1)</p>	<p align="center"><b>Gaps Remaining after Comparison to ISMS</b></p>
<ul style="list-style-type: none"> <li>• Obtaining, as appropriate, community advice relevant to aspects of “Greening the Government” Executive orders, through new or existing outreach programs.</li> </ul>	
<p><b>EMS Documentation</b></p> <ul style="list-style-type: none"> <li>• Information describing the core elements of the EMS and their interaction has been established and maintained.</li> <li>• Information providing directions to related documentation has been established and maintained.</li> <li>• Update approved ISMS descriptions to include EMS requirements.</li> </ul>	
<p><b>Document Control</b></p> <p>A procedure has been established and maintained for controlling documents to ensure that—</p> <ul style="list-style-type: none"> <li>• they can be located;</li> <li>• they are periodically reviewed, revised, and approved by authorized personnel;</li> <li>• current versions are available at all appropriate locations;</li> <li>• obsolete documents are promptly removed;</li> <li>• obsolete documents retained for preservation are identified as such;</li> <li>• documents are legible, readily identifiable, maintained, retained, and include most recent revision date; and</li> <li>• procedures exist and are maintained for creation and modification of documents.</li> </ul>	
<p><b>Operational Control</b></p> <ul style="list-style-type: none"> <li>• Includes procedures to manage, control, and mitigate the potential impacts of site activities with significant impacts.</li> </ul>	
<p><b>Emergency Preparedness and Response</b></p> <ul style="list-style-type: none"> <li>• There are procedures for identifying the potential for and response to accidents and emergency situations.</li> </ul>	



<p align="center"><b>EMS ELEMENTS</b> (Based on Elements of an EMS and DOE O 450.1)</p>	<p align="center"><b>Gaps Remaining after Comparison to ISMS</b></p>
<ul style="list-style-type: none"> <li>• There are procedures for preventing and mitigating the environmental impacts that may be associated with emergencies.</li> <li>• Procedures are reviewed and revised as necessary.</li> <li>• Procedures are periodically tested where practicable.</li> </ul>	
<p><b>Checking and Corrective Action (Phase III)</b></p> <ul style="list-style-type: none"> <li>• Provides for evaluation of programs for compliance with applicable requirements.</li> <li>• Provides for evaluation of programs for public health and environmental protection.</li> <li>• Provides for evaluation of programs for pollution prevention.</li> <li>• Implementation is assessed as a component of the implementation of DOE O 226.1, <i>Implementation of Department of Energy Oversight Policy</i>.</li> </ul>	
<p><b>Monitoring and Measurement</b></p> <ul style="list-style-type: none"> <li>• Procedures exist and are documented to regularly monitor and measure the key characteristics of operations having a significant impact on the environment.</li> <li>• Includes recording information to track performance, relevant operations controls, and conformity with objectives and targets.</li> <li>• Monitoring equipment is calibrated and maintained and records of the process retained.</li> <li>• A procedure exists for periodically evaluating compliance with legislation and regulations.</li> <li>• Includes policies, procedures to assess performance</li> <li>• Contractor ES&amp;H self-assessment programs within the framework of DOE O 226.1 are established and continue to be effective.</li> <li>• Ensures the early identification of, and appropriate response to, potential adverse environmental impacts associated with DOE operations, including, as appropriate, preoperational characterization and assessment and effluent and surveillance monitoring.</li> </ul>	

<p align="center"><b>EMS ELEMENTS</b> (Based on Elements of an EMS and DOE O 450.1)</p>	<p align="center"><b>Gaps Remaining after Comparison to ISMS</b></p>
<ul style="list-style-type: none"> <li>• Provides for the conduct of environmental monitoring, as appropriate, to support the site’s ISMS, to detect, characterize, and respond to releases from DOE activities.</li> <li>• Provides for the conduct of environmental monitoring, as appropriate, to assess impacts.</li> <li>• Provides for the conduct of environmental monitoring, as appropriate, to estimate dispersal patterns in the environment.</li> <li>• Provides for the conduct of environmental monitoring, as appropriate, to characterize the pathways of exposure to members of the public and to characterize the exposures and doses to individuals and to the population.</li> <li>• Provides for the conduct of environmental monitoring, as appropriate, to evaluate the potential impacts to the biota in the vicinity of the DOE activity.</li> <li>• Provides for the implementation of the analytical work supporting environmental monitoring using a consistent system for collecting, assessing, and documenting environmental data of known and documented quality.</li> <li>• Provides for the implementation of the analytical work supporting environmental monitoring using a validated and consistent approach for sampling and analysis of radionuclide samples to ensure laboratory data meets program-specific needs and requirements within the framework of a performance-based approach for analytical laboratory work.</li> <li>• Provides for the implementation of the analytical work supporting environmental monitoring using an integrated sampling approach to avoid duplicative data collection.</li> </ul>	

<p align="center"><b>EMS ELEMENTS</b> (Based on Elements of an EMS and DOE O 450.1)</p>	<p align="center"><b>Gaps Remaining after Comparison to ISMS</b></p>
<p><b>Nonconformity and Corrective/Preventive Action</b></p> <ul style="list-style-type: none"> <li>• Procedures exist and are maintained for defining responsibility and authority for handling and investigating nonconformity and taking appropriate action.</li> <li>• Corrective or preventive actions are appropriate.</li> <li>• Changes in procedures resulting from corrective and prevention action are documented.</li> <li>• Includes policies and procedures to implement corrective actions where needed.</li> </ul>	
<p><b>Record</b></p> <ul style="list-style-type: none"> <li>• Procedures are established and maintained for the identification, maintenance, and disposition of environmental records. These include training and audit results.</li> <li>• Records are legible, identifiable, and traceable to the activity, product, or service involved.</li> <li>• Records are easily retrievable and protected from damage, deterioration, or loss.</li> <li>• Retention times are established and recorded.</li> <li>• Records demonstrate conformity to the standard.</li> </ul>	
<p><b>EMS Audit/Self Assessment</b></p> <ul style="list-style-type: none"> <li>• A program and procedure for periodic EMS audits is established and maintained.</li> <li>• The audits determine whether the EMS conforms to DOE O 450.1.</li> <li>• Whether it has been properly implemented and maintained.</li> <li>• The program provides information on the results of audits to management.</li> <li>• Procedures cover the audit scope, frequency, and methods, and responsibilities and requirements for conducting audits and reporting results.</li> <li>• Provides for the evaluation of programs for public health and environmental protection, pollution</li> </ul>	

<p style="text-align: center;"><b>EMS ELEMENTS</b> (Based on Elements of an EMS and DOE O 450.1)</p>	<p style="text-align: center;"><b>Gaps Remaining after Comparison to ISMS</b></p>
<p>prevention, and compliance with applicable requirements.</p> <ul style="list-style-type: none"> <li>• Contractor ES&amp;H self-assessment programs within the framework of DOE O 226.1 are established and continue to be effective.</li> </ul>	
<p><b>Management Review (Phase IV)</b></p> <ul style="list-style-type: none"> <li>• Senior management regularly reviews the EMS to ensure its suitability, adequacy, and effectiveness. The review is documented.</li> <li>• Information necessary for management to perform the review is collected.</li> <li>• The review shall consider the need for changes to policy, objectives, and other elements of the EMS resulting from audit results, changing conditions, and the commitment to continual improvement.</li> <li>• Provides for the evaluation of programs for public health and environmental protection, pollution prevention, and compliance with applicable requirements.</li> <li>• Includes policies, procedures to assess performance.</li> <li>• Reviews are conducted annually, and the site’s measurable environmental goals, objectives, and targets are updated (when appropriate).</li> <li>• Implementation is assessed as a component of the implementation of DOE O 226.1, <i>Implementation of Department of Energy Oversight Policy</i>.</li> <li>• Contractor ES&amp;H performance objectives, performance measures, and commitments are reviewed through the annual ISM review process [established pursuant to DEAR 970.5223-1(e)].</li> </ul>	

## **DOE ISMS/EMS SELF-DECLARATION PROCEDURE**

### **Introduction and Purpose**

The Executive Order 13148, *Greening the Government through Leadership in Environmental Management*, working group (hereinafter Working Group) developed self-declaration protocols entitled “Agency Self-Declaration Protocols for Appropriate Federal Facilities,” dated September 10, 2003. The protocols provide that the self-declaration process to be used by facilities should be a credible, effective, and objective evaluation of the site's Environmental Management System (EMS). Furthermore, the process should ensure that the system is not only conformant, but also designed for ongoing evaluation and continual improvement. The process should also include the degree of transparency and objectivity necessary to make the self-declaration credible.

The protocols developed by the Working Group directed Agencies to develop procedures that address the following areas.

- Direction on the use of an evaluation guide
- Makeup of the independent review team (e.g., headquarters, other facility, other Agency, or contractor)
- Qualifications of independent reviewers
- Documenting and using the results of management system evaluations
- Development of a site self-declaration statement
- Direction on the frequency of the self-declaration internal evaluations
- Frequency of Agency independent reviews
- Schedule for reviewing the self-declaration procedures that considers changes in mission and organization (this review should consider changes in Agency programs and missions when appropriate, but on a schedule that does not exceed 5 years)

The procedures set forth below address the areas that should be covered pursuant to the protocols. However, these procedures represent only one example of a site self-declaration procedure. DOE sites may develop other self-declaration procedures so long as the procedures address the areas listed.

### **PROCEDURES**

#### **1. Use of Evaluation Guide**

DOE G 450.1-1A Attachment 3 contains the EMS elements required by DOE O 450.1, *Environmental Protection Program*, dated 1-15-03. This attachment should be used to

develop an evaluation checklist or lines of inquiry that can be used during an evaluation of the site Integrated Safety Management System (ISMS)/EMS.

## **2. Makeup of Independent Review Team**

After a site has completed its ISMS/EMS, but before conducting an evaluation to determine conformity of the ISMS/EMS, a review team (e.g., Headquarters, other facility, other Agency) should be established. Issues regarding whether the team should be made up of internal and/or external reviewers, the size of the review team, and the qualifications of the team members are key considerations that should be addressed.

To ensure team credibility, the members should be independent, free of bias and conflict, and competent to carry out their responsibilities. Using external reviewers to conduct the evaluation can help ensure independence. External in this context means outside of the organization being reviewed.

The size of the review team should be appropriate to the complexity of the ISMS/EMS and should include a team leader. The team leader should be designated by the site or facility senior management and have applied experience and training with management systems. The team leader should also have strong project management experience.

## **3. Qualification of Team Members**

It is highly recommended that the team be composed of members who have technical and compliance experience, auditing, and Hazardous Waste Operations and Emergency Response (HAZWOPER) training (if it is necessary to have physical access to hazardous areas). An administrative professional is a key team member who can provide a central point of contact for the review team. Team members should also have appropriate clearances to access all documents and areas, as appropriate.

## **4. Previsit Activities**

Once the site/facility senior management identifies the team leader, and the team leader has identified team members, a list of resources and a budget should be developed. The team should consider the following items: laptop computers; digital or video cameras; and personal protective equipment such as safety glasses, safety shoes, respirators, and hard hats.

The team leader should send formal notification to the site/facility senior management indicating the start date of the evaluation and a kickoff meeting with critical site personnel who will be involved in the evaluation. A sample memorandum follows. A copy of the appropriate evaluation checklist or lines of inquiry should be shared with the participants at the kickoff meeting to clarify and answer questions.

The team leader should assemble the team and begin reviewing documentation such as the following.

- Past reviews/assessments (such as ISMS reviews)
- Audits (preferably from the past 2 years)
- Policy, guidance, and procedure documents
- National Environmental Policy Act of 1969 documentation
- Organization chart for organization being evaluated
- List of key individuals for each evaluated area of the organization

The team leader should arrange for dedicated office and meeting space for the duration of the evaluation with telephone, fax, printer and copier, and computer capabilities. In addition, the team leader should also make an assignment list with deadlines and distribute the list to all team members.

### **Sample Notification Memorandum**

DATE:

REPLY TO:

ATTN OF:

SUBJECT: ISMS/EMS Self-Declaration Evaluation

TO:

On   (date)  , the ISMS/EMS self-declaration evaluation team will begin a review of your ISMS/EMS. This evaluation will determine whether your site's/facility's ISMS/EMS conforms to DOE O 450.1. Before the team begins its review, we would like to schedule a kickoff meeting with key site personnel who will be involved in the evaluation. If it is convenient, we would like to schedule the kickoff meeting from 8:30 a.m. until noon on           (date)          . Please contact me at                      if you have questions. Thank you for your cooperation.

## **5. Onsite Evaluation**

The team leader should make arrangements to conduct briefings with managers, team members, and key personnel in the area to be evaluated. The briefings may review the

scope of the evaluation, expected products, and outcomes. The schedule and activities, along with any resource needs or issues should be discussed at this briefing.

## 6. Daily Evaluation Activities

Evaluation team members should conduct interviews and observe operations with personnel to assess various program components with respect to the checklist. These personnel may include the following.

- Senior environmental official/manager in the area being evaluated
- Environmental personnel (Federal and contractor)
- Line managers and operations personnel in areas of environmental significance
- Site/facility environmental manager

Evaluation team members may review relevant documents, as necessary, to assess the ISMS/EMS. The evaluation team should document in notes any findings or observations and send them to a central repository managed by the team's administrative staff.

The team should have a daily end-of-day briefing with the team leader. Managers and other personnel (at the team leader's discretion) may also attend the briefing to discuss findings and observations and the next day's schedule and activities.

## 7. Documenting and Using the Results of Management System Evaluations

The evaluation team should develop steps to document the results of the management system evaluation, including steps for acknowledging adequate management systems, follow-up actions to address inadequacies in the site management systems, and reporting results of the evaluation for inclusion in the DOE annual ISMS reviews.

To rate the conformity of the management systems, the following criteria may be used.

**C=Conformity**

**SC=Sufficiently in Conformity (nonconformities are minor)**

**NC=Nonconformity.**

Findings of nonconformity may be classified further in the following categories.

- **Significant**—May result in a direct and immediate threat to human health, safety, the environment, or the site mission—requires immediate attention
- **Regulatory**—Noncompliance with a Federal, State, or local regulation or permit or a DOE requirement



## 8. Out-Briefing

The team leader should conduct the out-briefing with the assistance of other team members. Attendees should include site senior managers, environmental managers, line managers, and contractor managers. A sample agenda is outlined below.

### SAMPLE AGENDA

#### *AGENDA*

- Purpose and Scope of Evaluation
- Management Review
  - Positive Observations
  - Findings
  - Performance Indicators
- Future Actions

## 9. Post-Visit Activities

The evaluation report may be structured based on the format outlined below. The report should be completed within 4 to 6 weeks after completion of the evaluation. The draft report should be circulated to the team members and senior Federal and contractor managers for review and comment. A period of at least 2 weeks should be factored in for resolving any comments. The final report will include an action plan for resolution of any findings, including estimated completion dates and notification of final closure for each finding. After completion and resolution of the findings, site/facility senior management will prepare and submit a self-declaration memorandum to the appropriate cognizant Secretarial Officer no later than December 31, 2005, with a copy to the Office of Environment, Safety and Health. (Section 9.3.1 of DOE G 450.1-1A lists information that should be included in this memorandum.)

Site/facility senior management should publicly issue a self-declaration statement that it has a management system that conforms to DOE O 450.1. This statement should be communicated to employees and the public. A sample statement is shown in Attachment 4.

### **Sample Evaluation Report Format**

- I. Introduction** (includes description of facility, evaluation method, and overall content of report)
- II. Results** (overall discussion of results of evaluation)
- III. Conclusions** (overall discussion of effectiveness of management system)

**Appendix A**—Acronyms

**Appendix B**—Team Membership

**Appendix C**—Findings (detailed discussion of the findings based on criteria)

**Appendix D**—Action Plan for Resolution of Findings

### **10. Sample Self-Declaration Statement**

The site office manager may require the contractor to prepare a self-declaration statement. Guidance for the operations/field/site office manager report letter is contained in Attachment 4.

### **11. FREQUENCY OF FACILITY INDEPENDENT REVIEWS AND SELF-DECLARATION EVALUATIONS**

The site/facility should conduct subsequent independent evaluations to ensure that the management system continues to conform at least every 3 years or sooner if evaluations/audits/self-assessments indicate that the management system is no longer conforming. These subsequent independent reviews and evaluations should be integrated into a site's existing audit/assessment program.

### **12. Schedule for Reviewing Self-Declaration Procedures**

Site self-declaration procedures should be periodically reviewed on a schedule that does not exceed 5 years. These reviews should consider changes in DOE programs and mission and revisions to the procedures should be made when appropriate.

## **ELEMENTS OF AN ISMS/EMS REQUIRED BY DOE O 450.1**

The Environmental Management System (EMS) is a continuing cycle of planning, implementing, evaluating, and improving processes and actions undertaken to achieve environmental goals (DOE O 450.1, *Environmental Protection Program*, dated 1-15-03, paragraph 1).

The EMS is part of the Integrated Safety Management System (ISMS) established pursuant to DOE P 450.4 *Safety Management System Policy*, dated 10-15-96 (DOE O 450.1, paragraph 1).

### **PLANNING**

The ISMS/EMS provides for the systematic planning of programs for public health and environmental protection [DOE O 450.1, paragraph 4a(1)(a)].

The ISMS/EMS provides for the systematic planning of programs for pollution prevention [DOE O 450.1, paragraph 4a(1)(b)].

### **Environmental aspects.**

The ISMS/EMS includes policies [and] procedures to identify activities with significant environmental impacts [DOE O 450.1, paragraph 4a(2)].

### **Legal and other requirements.**

The ISMS/EMS provides for the systematic planning of programs for compliance with applicable requirements [DOE O 450.1, paragraph 4a(1)].

The ISMS/EMS includes (if applicable) conformity of DOE proposed actions with State implementation plans to attain and maintain national ambient air quality standards [DOE O 450.1, paragraph 4b(1)(a)].

The ISMS/EMS includes (if applicable) implementation of a watershed approach for surface water protection [DOE O 450.1, paragraph 4b(1)(b)].

The ISMS/EMS includes (if applicable) protection of other natural resources, including biota [DOE O 450.1, paragraph 4b(1)(d)].

The ISMS/EMS includes (if applicable) protection of cultural resources [DOE O 450.1, paragraph 4b(1)(f)].

The ISMS/EMS includes (if applicable) implementation of a site-wide approach for groundwater protection [DOE O 450.1, paragraph 4b(1)(c)].

The ISMS/EMS includes (if applicable) protection of site resources from wildland and operational fires [DOE O 450.1, paragraph 4b(1)(e)].

The ISMS/EMS provides for reduction or elimination of the generation of waste, the release of pollutants to the environment, and the use of Class I ozone-depleting substances (ODS) through source reduction, reuse, segregation, and recycling and by procuring recycled-content materials and environmentally preferable products and services [DOE O 450.1, paragraph 4b(3)].

The ISMS/EMS promotes the long-term stewardship of a site's natural and cultural resources throughout its operational, closure, and postclosure life cycle [DOE O 450.1, paragraph 4b(2)].

### **Objectives and targets.**

The ISMS/EMS includes measurable environmental goals, objectives, and targets [DOE O 450.1, paragraph 4a(3)].

The ISMS/EMS includes site-specific goals that contribute to the accomplishment of DOE pollution prevention and energy efficiency goals [DOE O 450.1, paragraph 5c(3)].

Contractor environment, safety, and health (ES&H) performance objectives, performance measures, and commitments include appropriate environmental elements based on the environmental risks, impacts of activities at the site and established Departmental pollution prevention/energy efficiency goals [DOE O 450.1, paragraph 5d(17)].

### **Environmental management programs.**

The ISMS/EMS includes policies and procedures to manage, control, and mitigate the potential impacts of site activities with significant environmental impacts [DOE O 450.1, paragraph 4a(2)].

The ISMS/EMS includes (if applicable) conformity of DOE proposed actions with State implementation plans to attain and maintain national ambient air quality standards [DOE O 450.1, paragraph 4b(1)(a)].

The ISMS/EMS includes (if applicable) implementation of a watershed approach for surface water protection [DOE O 450.1, paragraph 4b(1)(b)].

The ISMS/EMS includes (if applicable) implementation of a site-wide approach for ground water protection [DOE O 450.1, paragraph 4b(1)(c)].

The ISMS/EMS includes (if applicable) protection of other natural resources, including biota [DOE O 450.1, paragraph 4b(1)(d)].

The ISMS/EMS includes development and implementation of cost-effective pollution prevention programs that use life-cycle assessment concepts and practices in determining program return-on-investment [DOE O 450.1, paragraph 5c(4)].

The ISMS/EMS includes (if applicable) protection of cultural resources [DOE O 450.1, paragraph 4b(1)(f)].

The ISMS/EMS includes (if applicable) protection of site resources from wildland and operational fires [DOE O 450.1, paragraph 4b(1)(e)].

The ISMS/EMS provides for reduction or elimination of the generation of waste, the release of pollutants to the environment, and the use of Class I ozone-depleting substances (ODS) through source reduction, reuse, segregation, and recycling and by procuring recycled-content materials and environmentally preferable products and services [DOE O 450.1, paragraph 4b.(3)].

The ISMS/EMS promotes the long-term stewardship of a site's natural and cultural resources throughout its operational, closure, and postclosure life cycle [DOE O 450.1, paragraph 4b (2)].

### **IMPLEMENTATION AND OPERATION**

The ISMS/EMS provides for the integrated execution of programs for public health and environmental protection, pollution prevention, and compliance with applicable requirements [DOE O 450.1, paragraph 4a(1)].

#### **Structure and responsibility.**

Structure and responsibility is addressed in DOE P 450.4; DOE P 411.1, *Safety Management Functions, Responsibilities, and Authorities Policy*, dated 1-28-97; DOE M 411.1-1C, *Safety Management Functions, Responsibilities, and Authorities Manual*, dated 12-31-03; and other DOE Policies, procedures, and requirements.

#### **Training, awareness, and competence.**

The ISMS/EMS includes training to identify activities with significant environmental impacts [DOE O 450.1, paragraph 4a(2)].

The ISMS/EMS includes training to manage, control, and mitigate the potential impacts of site activities with significant environmental impacts [DOE O 450.1, paragraph 4a(2)].

The ISMS/EMS includes training to assess performance and implement corrective actions where needed [DOE O 450.1, paragraph 4a(2)].

#### **Communication.**

The ISMS/EMS provides for obtaining, as appropriate, community advice relevant to aspects of "Greening the Government" Executive orders through new or existing outreach programs [DOE O 450.1, paragraph 5d(3)].

#### **Environmental management system documentation.**

Approved ISMS descriptions have been updated, as necessary, to include EMS requirements [DOE O 450.1, paragraph 5d(2)].

**Document control.**

Document control is addressed in other DOE Policies, procedures, and requirements.

**Operational control.**

The ISMS/EMS includes procedures to manage, control, and mitigate the potential impacts of site activities with significant environmental impacts [DOE O 450.1, paragraph 4a(2)].

**Emergency preparedness and response.**

Emergency preparedness and response is addressed in other DOE Policies, procedures, and requirements.

**CHECKING AND CORRECTIVE ACTION**

The ISMS/EMS provides for the evaluation of programs for compliance with applicable requirements [DOE O 450.1, paragraph 4a(1)(c)].

The ISMS/EMS provides for the evaluation of programs for public health and environmental protection [DOE O 450.1, paragraph 4a(1)(a)].

The ISMS/EMS provides for the evaluation of programs for pollution prevention [DOE O 450.1, paragraph 4a(1)(b)].

ISMS/EMS implementation is assessed as a component of the implementation of DOE O 226.1, *Implementation of Department of Energy Oversight Policy*, dated 9-15-05 (DOE O 450.1, paragraph 5b).

**Monitoring and measurement.**

The ISMS/EMS includes policies, procedures to assess performance [DOE O 450.1, paragraph 4a(2)].

Contractor ES&H self-assessment programs within the framework of DOE O 226.1 are established and continue to be effective [DOE O 450.1, paragraph 5d(16)].

The ISMS/EMS ensures the early identification of, and appropriate response to, potential adverse environmental impacts associated with DOE operations, including, as appropriate, preoperational characterization and assessment and effluent and surveillance monitoring [DOE O 450.1, paragraph 4b(4)].

The ISMS/EMS provides for the conduct of environmental monitoring, as appropriate, to support the site ISMS and to detect, characterize, and respond to releases from DOE activities [DOE O 450.1, paragraph 5d(14)].

The ISMS/EMS provides for the conduct of environmental monitoring, as appropriate, to assess impacts [DOE O 450.1, paragraph 5d(14)].

The ISMS/EMS provides for the conduct of environmental monitoring, as appropriate, to estimate dispersal patterns in the environment [DOE O 450.1, paragraph 5d(14)].

The ISMS/EMS provides for the conduct of environmental monitoring, as appropriate, to characterize the pathways of exposure to members of the public and to characterize the exposures and doses to individuals and to the population [DOE O 450.1, paragraph 5d(14)].

The ISMS/EMS provides for the conduct of environmental monitoring, as appropriate, to evaluate the potential impacts to the biota in the vicinity of the DOE activity [DOE O 450.1, paragraph 5d(14)].

The ISMS/EMS provides for the implementation of the analytical work supporting environmental monitoring using a consistent system for collecting, assessing, and documenting environmental data of known and documented quality [DOE O 450.1, paragraph 5d(15)(a)].

The ISMS/EMS provides for the implementation of the analytical work supporting environmental monitoring using a validated and consistent approach for sampling and analysis of radionuclide samples to ensure laboratory data meets program-specific needs and requirements within the framework of a performance-based approach for analytical laboratory work [DOE O 450.1, paragraph 5d(15)(b)].

The ISMS/EMS provides for the implementation of the analytical work supporting environmental monitoring using an integrated sampling approach to avoid duplicative data collection [DOE O 450.1, paragraph 5d(15)(c)].

#### **Nonconformance and corrective and preventive action.**

The ISMS/EMS includes policies and procedures to implement corrective actions where needed [DOE O 450.1, paragraph 4a(2)].

#### **Records.**

Records are addressed in other DOE Policies, procedures, and requirements.

#### **Environmental management system audit/self-assessment.**

The ISMS/EMS provides for the evaluation of programs for public health and environmental protection, pollution prevention, and compliance with applicable requirements [DOE O 450.1, paragraph 4a(1)].

Contractor ES&H self-assessment programs within the framework of DOE O 226.1 are established and continue to be effective [DOE O 450.1, paragraph 5d(16)].

#### **MANAGEMENT REVIEW**

The ISMS/EMS provides for the evaluation of programs for public health and environmental protection, pollution prevention, and compliance with applicable requirements [DOE O 450.1, paragraph 4a(1)].

The ISMS/EMS includes policies and procedures to assess performance [DOE O 450.1, paragraph 4a(2)].

The ISMS/EMS reviews annually, and updates when appropriate, the site's measurable environmental goals, objectives, and targets [DOE O 450.1, paragraph 4a(3)].

ISMS/EMS implementation is assessed as a component of the implementation of DOE O 226.1 (DOE O 450.1, paragraph 5b).

Contractor ES&H performance objectives, performance measures, and commitments are reviewed through the annual ISMS review process [established pursuant to DEAR 970.5223-1 (e) and DOE O 450.1, paragraph 5d(17)].



## **SAMPLE REPORT LETTERS FROM DOE SITE MANAGERS**

This attachment provides sample formats for the report letter which DOE operations, field, and site office managers are to submit to the cognizant Secretarial Officer by December 31, 2005 [pursuant to DOE O 450.1, *Environmental Protection Program*, dated 1-15-03, paragraph 5d(1)], with copy to the Office of Environment, Safety and Health, reporting whether the Environmental Management System (EMS) requirements of DOE O 450.1 have been implemented and integrated into the site Integrated Safety Management System (ISMS).

The sample report letters address the following situations.

**Report Letter Sample 1.** ISMS/EMS has been implemented, and the site's declaration that it conforms to the requirements of DOE O 450.1 ("conformity declaration") is based on a first-party assessment or an external second-party assessment.

This letter is appropriate for sites using ISMS/EMS implementation framework 1, as described in section 8 of this Guide (i.e., self-declaration). This includes sites which were formerly registered to the ISO 14001 standard but are not currently.

"First-party" and "second-party" assessments (audits) are defined in DOE G 450.1-1A Attachment 5 and will be used in reporting the Department's implementation of EMS in the annual report to the Environmental Protection Agency.

**Report Letter Sample 2.** ISMS/EMS has been implemented at the site, and the conformity declaration is based on an external third-party audit.

This letter is appropriate for sites using ISMS/EMS implementation framework 2, as described in section 8 of this Guide. A "third-party" audit is a formal audit conducted by an independent registrar accredited by the American National Standards Institute-Registrar Accreditation Board (ANSI-RAB) to determine conformance to the ISO 14001 EMS standard. (Note: Third-party registration of the EMS is not a requirement of DOE O 450.1.)

**Report Letter Sample 3.** ISMS/EMS is not yet fully implemented at the site.

Site office managers may choose to report this information in an alternate format in accordance with the guidance in section 9 of this Guide.

Government-owned/Government-operated sites, including the power administrations, should make appropriate adjustments to the language in the sample letters.

**REPORT LETTER SAMPLE 1.**

[EMS is implemented, and the site's conformity declaration is based on a first-party assessment or an external second-party assessment.]

Date: [due by December 31, 2005]  
From: Manager, xxx Operations/Field/Site Office  
To: Assistant Secretary/Director/Administrator for yyy  
cc: Assistant Secretary for Environment, Safety and Health

Pursuant to DOE O 450.1 [paragraph 5d(1)], I am submitting this letter to report to you that I have determined that xxx site fully conforms to the Environmental Management System (EMS) requirements of DOE O 450.1.

This self-declaration is based on a [first-party / second-party] assessment of the EMS. The assessment was conducted using the self-declaration procedure described in Attachment 2 of DOE G 450.1-1A and was conducted as a component of my implementation of DOE O 226, *Implementation of Department of Energy Oversight Policy*.

[OR: Our self-declaration procedure consists of the following elements, which credibly establish and document that we have an EMS that conforms to the requirements of DOE O 450.1. The site's alternative self-assessment procedure

- provides for effective and objective assessment of ISMS/EMS,
- ensures the system meets the requirement of DOE O 450.1 (listed in Attachment 3 of DOE G 450.1-1A), and
- is designed for ongoing evaluation and continual improvement.

The alternative self-assessment procedure consists of the following elements. [Include a description of the self-assessment procedure.]

The requirements of DOE O 450.1, as reflected in the Contractor Requirements Document, were incorporated in the site contract on [date]. [If not incorporated, or only partially incorporated, please describe, and identify how DOE ensures that the requirements of DOE O 450.1 are being implemented.]

The site contractor has updated its approved ISMS description, as necessary, to include the EMS requirements of DOE O 450.1. I have confirmed this as part of the self-declaration procedure described above [OR: ... during my annual review and approval of the contractor's ISM measures, objectives and commitments, pursuant to DEAR 970.5223-1(e), which I conducted on (dates)].

I have ensured, through the annual ISM review process pursuant to DEAR 970.5223-1(e), that the contractor's ES&H performance objectives, performance measures, and commitments are incorporated into an ISMS/EMS and include appropriate environmental elements based on the environmental risks, impacts of activities at the site, and established Departmental pollution prevention/energy efficiency goals.

Documentation supporting these determinations is available for review by the yyy Program Office and the Office of Environment, Safety and Health.

Manager  
xxx Operations/Field/Site Office

**REPORT LETTER SAMPLE 2**

[EMS is implemented at the site, and the conformity declaration is based on an external third-party audit.]

Date: [due by December 31, 2005]  
From: Manager, xxx Operations/Field/Site Office  
To: Assistant Secretary/Director/Administrator for yyy  
cc: Assistant Secretary for Environment, Safety and Health

Pursuant to DOE O 450.1 [paragraph 5d(1)], I am submitting this letter to report to you that I have determined that xxx site fully conforms to the environmental management system (EMS) requirements of DOE O 450.1.

This declaration is based on an ISO 14001 registration audit conducted on [date] by [name of ANSI-RAB accredited independent registrar]. This audit determined that [name/scope of registered organization] conforms to the ISO 14001 standard. In addition, I have confirmed that the scope of the EMS is consistent with the requirements of DOE O 450.1. This assessment of the EMS was conducted as a component of my implementation of DOE O 226.1, *Implementation of Department of Energy Oversight Policy*.

The requirements of DOE O 450.1, as reflected in the Contractor Requirements Document, were incorporated in the site contract on [date]. [If not incorporated, or only partially incorporated, please describe, and identify how DOE ensures that the requirements of DOE O 450.1 are being implemented.]

The site contractor has updated its approved ISMS description, as necessary, to include the requirements of DOE O 450.1. I have confirmed this during my annual review and approval of the contractor's ISM measures, objectives, and commitments, pursuant to DEAR 970.5223-1(e), which I conducted on (dates) [OR: describe how this was determined].

I have ensured, through the annual ISM review process pursuant to DEAR 970.5223-1(e), that the contractor's ES&H performance objectives, performance measures, and commitments are incorporated into an ISMS/EMS and include appropriate environmental elements based on the environmental risks, impacts of activities at the site, and established Departmental pollution prevention/energy efficiency goals.

Documentation supporting these determinations is available for review by the yyy Program Office and the Office of Environment, Safety and Health.

Manager  
xxx Operations/Field/Site Office

**REPORT LETTER SAMPLE 3**  
[EMS is not yet fully implemented at the site.]

Date: [due by December 31, 2005]

From: Manager, xxx Operations/Field/Site Office

To: Assistant Secretary/Director/Administrator for yyy

cc: Assistant Secretary for Environment, Safety and Health

Pursuant to DOE O 450.1 [paragraph 5d(1)], I am submitting this letter to report to you that I have determined that xxx site has not yet fully implemented the ISMS/EMS requirements of DOE O 450.1.

The following elements of the ISMS/EMS have not yet been implemented. [ ... ]

In addition, the following elements of the ISMS/EMS have been fully implemented. [ ... ]

[If appropriate, describe any circumstances, such as a recent change in contractors, which have affected EMS implementation at the site.]

[IF AN ASSESSMENT OF THE EMS WAS CONDUCTED.] My determination is based on a [first-party/second-party] assessment of the EMS. The assessment was conducted using the self-declaration procedure described in Attachment 2 of DOE G 450.1-1A.

[OR: Our self-declaration procedure consists of the following elements, which are intended to credibly establish and document that we have an EMS that conforms to the requirements of DOE O 450.1. The site's alternative self-assessment procedure—

- provides for effective and objective assessment of ISMS/EMS,
- ensures the system meets the requirement of DOE O 450.1 (listed in Attachment 3 of DOE G 450.1-1A), and
- is designed for ongoing evaluation and continual improvement.

The alternate self-assessment procedure consists of the following elements. [Include a description of the self-assessment procedure.]

[IF APPLICABLE] The assessment of the EMS was conducted as a component of my implementation of DOE O 226.1, *Implementation of Department of Energy Oversight Policy*.

[IF NO ASSESSMENT OF THE EMS HAS YET BEEN CONDUCTED.] My declaration above is based on

The requirements of DOE O 450.1, as reflected in the Contractor Requirements Document, were incorporated in the site contract on [date]. [OR: If not incorporated, or only partially incorporated, please describe, and identify how DOE ensures that the requirements of DOE O 450.1 are being implemented.]...

**REPORT LETTER SAMPLE 3 (continued)**

[IF APPLICABLE] The site contractor has updated its approved ISMS description, as necessary, to include the EMS requirements of DOE O 450.1. I have confirmed this as part of the conformity declaration procedure described above [OR: during my annual review and approval of the contractor's ISM measures, objectives and commitments, pursuant to DEAR 970.5223-1(e), which I conducted on (dates)].

[OR] The site contractor is scheduled to complete the update of their approved ISMS description to include the EMS requirements of DOE O 450.1 by [date].

[IF APPLICABLE] I have ensured, through the annual ISM review process pursuant to DEAR 970.5223-1(e), that the contractor's ES&H performance objectives, performance measures, and commitments are incorporated into an ISMS/EMS and include appropriate environmental elements based on the environmental risks, impacts of activities at the site, and established Departmental pollution prevention/energy efficiency goals.

[OR identify when this will be completed.]

Documentation supporting these determinations is available for review by the yyy Program Office and the Office of Environment, Safety and Health.

For those EMS elements not yet in place, the scheduled completion dates are as follows [ ... ]. I expect to be able to report that I have confirmed full implementation of the EMS requirements of DOE O 450.1 by [date].

Manager  
xxx Operations/Field/Site Office

## GLOSSARY

**Activities, Products, and Services**—A catchall phrase that was developed by Technical Committee 207 of ISO to capture all of the elements at a facility or organization that can interact with the environment.

**Assessment**—An analysis, appraisal, or evaluation of a DOE program or contractors performance to ensure conformance to regulatory and DOE internal requirements and confirm safe and environmentally protective performance of work.

**Audit**—A systematic and documented verification process of objectively obtaining and evaluating evidence to determine the adequacy of a program or system within an organization.

**Cognizant Secretarial Officer (CSO)**—A DOE official at the Assistant Secretary level who is responsible for the assignment of work; the institutional overview of any type of facility; or both, and the management oversight of a laboratory.

**Composite Impacts**—The sum of real or potential significant impacts to human health and the environment that may result from DOE site operations or activities.

**Continuous Improvement**—The process of enhancing the environmental management system to achieve improvements in overall environmental performance in line with the organization's environmental policy. This process need not take place in all areas of activity simultaneously.

**Corrective Action**—An action taken to eliminate the causes of an existing noncompliance, nonconformity, defect, or other undesirable situation in order to prevent recurrence.

**Cultural Resources**—Historic properties as defined in the National Historic Preservation Act, archaeological resource as defined in the Archaeological Resources Protection Act, and cultural items as defined in the Native American Graves Protection and Repatriation Act. Includes artifacts and sites dating to the prehistoric, historic, and ethnohistoric periods that are currently located on the ground or buried beneath it; standing structures that are more than 50 years of age or are important because they represent a major historical theme or era; cultural and natural places, select natural resources, and sacred objects that have importance for Native Americans and other ethnic groups; and American folk life traditions and arts.

**EMS Audit**—A systematic and documented verification process of objectively obtaining and evaluating evidence to determine whether an organization's environmental management system conforms to the environmental management system audit criteria set by the organization, and for communication of the results of this process to management. (See also **First-Party Audits**, **Second-Party Audits**, **Third-Party Audits**.)

**Environment**—Surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation. (ISO-14001, 1996)

**Environmental Aspect**—Elements of an organization’s activities, products, or services that can interact with the environment. (ISO-14001, 1996). (The environmental aspect of an activity is that part of it that creates a possibility for an environmental impact. As such, it is equivalent to the concept of “hazard” in safety, which is also defined as the mere possibility of a negative event.)

**Environmental Impact**—A change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization’s activities, products, or services. (ISO-14001, 1996)

**Environmental Management System (EMS)**—The part of the overall management system that includes organizational structure, planning activities, responsibilities, practices, procedures, processes, and resources for developing, integrating, achieving, reviewing, and maintaining environmental policy; a continuing cycle of planning, implementing, evaluating, and improving processes and actions undertaken to achieve environmental goals.

**Environmental Objective**—An overall environmental goal, arising from the environmental policy, that an organization sets itself to achieve, and which is quantified where practicable. (ISO-14001, 1996)

**Environmental Performance**—Measurable results of the environmental management system, related to an organization’s control of its environmental aspects, based on its environmental policy, objectives, and targets. (ISO-14001, 1996)

**Environmental Policy**—A statement by the organization of its intentions and principles in relation to its overall environmental performance, which provides a framework for action and for the setting of its environmental objectives and targets. (ISO 14001, 1996)

**Environmental Target**—A detailed performance requirement, quantified where practicable, and applicable to the organization or parts thereof, which arises from the environmental objectives and needs to be set and met to achieve those objectives. (ISO-14001, 1996)

**External Audits**—(see **Second-Party Audits** and **Third-Party Audits**)

**First-Party Audits**—EMS audits conducted by the participants within the scope of the EMS under consideration. It is appropriate for describing an assessment, which forms the basis for a declaration of conformance to the EMS requirements of DOE O 450.1, *Environmental Protection Program*, dated 1-15-03. The definition is provided here to ensure consistency in DOE reporting and will be used in reporting the Department’s implementation of EMS in the DOE annual report to EPA. [DOE O 450.1, paragraph 5a(2)(b).] A first-party audit [or assessment] serves the primary purpose of ensuring that an EMS is in place and functioning properly. It can provide the basis for a self-declaration of conformance with the requirements of DOE O 450.1.

**Gap Analysis**—An assessment of EMS requirements against existing management system descriptions, policies and procedures.

**Independent Reviews**—(see **Second-Party Audits** and **Third-Party Audits**)

**Integrated Safety Management System (ISMS)**—A DOE management system that provides a formal, organized process whereby people plan, perform, assess, and improve the safe conduct of work efficiently and in a manner that ensures protection of workers, the public, and the environment. This management system shall be used to systematically integrate safety into management and work practices at all levels so that missions are accomplished while protecting the public, the worker, and the environment.

**Internal Evaluations**—(see **First-Party Audits**)

**ISMS/EMS Assessment**—A formal self-assessment (see self-assessment) that is normally conducted by an organization with an appropriate degree of independence.

**ISO 14001 Standard**—Internationally recognized voluntary environmental management system standard that provides organizations with the elements of an effective environmental management system that can be integrated with other management requirements to help organizations to achieve environmental and economic goals.

**Likelihood**—A measure of how often an aspect can be expected to occur within an activity given the probability of its occurrence for each repetition of the activity and the frequency of the activity over time.

**Operational Controls**—Procedures that help a site in implementing its environmental policy, objectives, and targets.

**Organization**—A company, corporation, firm, enterprise, authority, or institution, or part or combination thereof, whether incorporated or not, public or private, that has its own functions and administration. (ISO-14001, 1996)

**Pollution Prevention**—A source reduction as defined in the Pollution Prevention Act and other practices that reduce or eliminate the creation of pollutants through (1) increased efficiency in the use of raw materials, energy, water, or other natural resources or (2) protection of natural resources by conservation. The Department of Energy has expanded this definition to include recycling.

**Potential Environmental Impact**—An aspect defined by its likelihood of occurrence and likely consequences, equivalent to the concept of “risk” in safety, which assigns a probability and consequence to the possible negative event that may result from a “hazard.”

**Recycling**—

- (1) The use or reuse of a material as an effective substitute for a commercial product and as an ingredient or feedstock in an industrial or energy-producing process, and
- (2) the reclamation of useful constituents within a waste, or removal of contaminants from a waste to allow it to be reused.

**Root Cause**—The origin of an environmental deficiency.



**Second-Party Audits**—EMS audits conducted by reviewers from outside the scope of the EMS in question.

**Self-Assessment**—An analysis or evaluation of a DOE program or contractors management system by that program or contractor to ensure conformance to regulatory and DOE internal requirements and to confirm the safe and environmentally protective performance of work.

**Self-Declaration**—An organization determines that it is in full conformance with the requirements of a recognized standard and publicly asserts that it conforms to the specifications of the standard.

**Significant Environmental Aspect**—An environmental aspect that has or could have a significant impact on the environment, the organization, or to the organization’s mission. (ISO-14001, 1996)

**Third-Party Audits**—“[EMS] audits conducted by an ANSI-RAB\* accredited, independent registrar.” (This definition was developed for Federal agencies by the Federal Interagency Environmental Leadership Workgroup established under Executive Order 13148.

**Third-Party Registration**—The process by which an organization applies for placement on a publicly available list of entities that conforms to a specified set of requirements.

**Senior Management**—The level of management that has authority to make decisions for the site/facility.

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\*American National Standards Institute—Registration Accreditation Board

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### **Internet Sites**

EPA's Action Plan for Promoting the Use of Environmental Management Systems (EMS),  
<http://www.epa.gov/ems/policy/goals.htm>.

EPA's EMS Web site, <http://www.epa.gov/ems/index.htm>.

EPA EMS Publications, <http://www.epa.gov/ems/assist/guide/general.htm>.

EPA's National Environmental Compliance Assistance Clearinghouse,  
<http://cfpub.epa.gov/clearinghouse/>.

EPA's National Environmental Performance Track, <http://www.epa.gov/performancectrack>.

Global Reporting Initiative (GRI), <http://www.globalreporting.org>.

Iowa Waste Reduction Center: EMS Service Center, <http://www.iwrc.org/programs/ems.cfm>.

North Carolina Division of Pollution Prevention and Environmental Assistance, Environmental Management Systems Home Page, <http://www.p2pays.org/iso>.

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