



ENVIRONMENTAL MANAGEMENT SYSTEMS: GETTING STARTED

Background: An environmental management system (EMS) is a means for organizations to improve the effectiveness of their efforts to manage their environmental obligations. It provides an outline of procedures, a "system," that when diligently followed will provide consistency in considering the environmental implications of all of an organization's endeavors. A number of voluntary EMS standards have been developed by industry groups and consensus standards bodies. The International Organization for Standardization (ISO) incorporated many of the concepts from these standards during the formulation of the ISO 14001 Environmental Management System Standard. This international consensus standard is currently viewed by many as the EMS "tool of choice" for organizations involved in international trade or other activities that have an environmental impact, and many world-class organizations are moving to become ISO 14000 certified. This is one in a series of Information Briefs produced by EH-41 on EMSs, their implementation, and relationship to other DOE environmental initiatives.

References:

1. ISO 14001, "Environmental Management Systems -- Specification with guidance for use," International Organization for Standardization, 1996.
2. ISO 14004, "Environmental Management System -- General guidance on principles, systems, and supporting techniques," International Organization for Standardization, 1996.
3. "Code of Environmental Management Principles," Federal Facilities Enforcement Office, USEPA, 1996.
4. "ISO 14000: International Environmental Management Standards," EPA Standards Network Fact Sheet, May 1995.
5. Executive Order 12856, "Federal Compliance With Right-to-Know Laws and Pollution Prevention Requirements," August 1993.

What are the preliminary activities involved in implementing an EMS?

There is no one right way to implement an EMS. What makes the most sense for a program, site, or laboratory will depend on its missions, resources, history, conditions, and stakeholders. However, there are some basic considerations applicable to all who are considering an EMS:

1. *Obtain management commitment.* The most essential step in developing a successful EMS (see text box on the right) is *obtaining top management commitment*. Top management support can be communicated through an organizational policy that clearly states a commitment to:

- compliance with laws and applicable requirements;
- prevention of pollution;
- continuous improvement; and
- other supporting goals of the organization.

This policy can also be used to lay the foundation for subsequent EMS activities and should be communicated throughout the organization and to the

public so that personnel and stakeholders are aware of management support.

2. *As much as possible, use what you have.* Adopting an EMS does not require throwing things out and starting over. DOE programs, sites, and laboratories already have sophisticated planning and management systems. These can go a long way in fulfilling the requirements of an EMS. Early benchmarking analyses have shown that DOE sites and

laboratories usually have most or all of the elements of an EMS specified in the ISO 14001 standard. Take stock of what is already in place that satisfies EMS requirements, use it, focus on better integration, and

Environmental management systems are "that part of the overall management system which includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy." -- International Organization for Standardization



then continuously improve — filling in gaps in line with priorities for that site, program, or laboratory.

3. *Link management initiatives.* An EMS can incorporate elements of other DOE initiatives, or become a part of larger DOE initiatives that address more than environmental concerns. An EMS provides a systematic means for integrating environmental ethics into all management actions, thereby continuously improving environmental protection, stewardship, and cost-effectiveness. In this way, an EMS can strengthen other activities, such as performance-based contracting, integrating safety systems, deploying new technology, or negotiating flexibility in regulatory interpretations. So a broad look at the range of ways an EMS may add value to other management initiatives can be useful.
4. *Focus on framework.* DOE sites, programs, and laboratories are undergoing rapid change. An EMS can be a tool for easing the management of on-going change. Toward that end, it can be useful to think of the EMS structure as a framework -- rather than a set of detailed activities. Missions, budgets, and priorities will continue to change, but the basic principles and structure of an EMS remains constant. New activities, contractors, or priorities can be plugged into the EMS framework. So in getting started, try focusing on EMS elements as a framework for helping the organization navigate ongoing change.
5. *Emphasize conformity rather than registration.* Sites, programs, and laboratories getting started will find more value in building on their existing resources and programs and using cost-effective continuous improvement aimed at reaching conformity with an EMS than in formal registration. The benefits of DOE organizations becoming third-party registered to ISO 14001 are debatable. While third party registration may prove to be highly valuable to organizations in international trade, for many DOE organizations it appears that the many benefits of an EMS can be reaped without the disruption or cost of third-party registration.

What is a gap analysis and why is it important?

Following (or concurrent with) developing the policy statement, the organization should evaluate its existing environmental programs. This process is sometimes called a "gap analysis" but may more usefully be thought of as a "leveraging analysis." That is, it focuses on those organizational elements best able to fill the needs of an EMS rather than on the parts missing. Some experts

recommend that this *initial review* be done even before the policy is developed. This will allow the organization to evaluate its status, develop an action plan, and tailor its policy statement.

An initial review will reflect the missions, conditions, activities, and procedures at a site, but will generally begin by taking a list of EMS requirements and reviewing current site program elements for conformance. EMS areas covered will include:

- policy;
- planning,
- implementation and operation,
- checking and corrective action, and
- management review.

Alternatively, an existing DOE planning process can be used to cross-walk sections of existing plans or budget documents with elements needed for an EMS. This allows one to start with familiar documents and identify available capabilities. This strategy may be especially useful for Program or Operations Offices with responsibility for multiple sites. The final product will be a listing of current site procedures that meet the requirements of an EMS and what must be created or improved.

What are some examples of things that a gap analysis examines?

The examples of EMS requirements below are included to show specific elements that must be addressed in a gap analysis. Each can generate many situation-specific questions.

Environmental aspects: Does the organization have in place a procedure to identify the environmental aspects of its activities, products, and services for the purpose of identifying significant impacts?

Environmental impacts: Are the significant environmental impacts identified above considered when setting environmental objectives?

Applicable regulatory requirements: Is there a procedure to identify and track laws and regulations? Does the organization maintain a list of laws and regulations relating to its activities? Is a specific person in charge of maintaining this listing? How are new regulations communicated and are they accessible to employees?

Internal criteria: How does the organization provide



criteria for activities where no external standards exist? For example, could the EMS integrate risk management criteria or voluntary commitments such as the *Code of Environmental Management Principles* with applicable requirements?

What do I do with the results of the gap analysis?

The next thing the organization should do is to address deficiencies in its *environmental program* identified by the gap analysis. For example, many organizations' environmental programs will require adding *procedures* to identify the environmental aspects of its activities, products, and services for the purpose of identifying significant impacts. These significant environmental impacts are to be considered when identifying environmental *objectives and targets*.

While DOE has already established many objectives and targets for its various existing environmental programs, these will probably have to be reevaluated within the EMS framework. In addition, new objectives and targets will have to be established for environmental impacts not previously identified. Applying the EMS concept of continuous improvement, these objectives will periodically change, and should progress beyond simple environmental compliance.

At this point, an organization may want to develop a *strategic plan* to shape the organization's vision beyond the immediate term, giving it a steadier, more proactive outlook that includes the concept of continuous improvement..

I now know the organization's policy, objectives, and strategic plan. How shall I proceed?

The organization achieves its environmental objectives and targets through the implementation of its *environmental program(s)*. The environmental program addresses specifics such as responsibilities, procedures, activities, schedules, budgets, and personnel. It will focus on the daily management of environmental issues in accordance with EMS requirements, i.e., it is the tool that gets the job done.

The environmental program, linked to the policy, objectives, and strategic plan, will likely not be all new, but will integrate many existing elements from multiple site programs while incorporating necessary changes or enhancements identified in the gap analysis.

What do I need to ensure that the environmental program is successful?

Commitment. The EMS provides the path to successful achievement of the organization's environmental objectives. It takes commitment of all involved to follow the path that the EMS dictates. The environmental program will rely on the same *organizational infrastructure* as the remainder of the organization. The existing infrastructure must be committed and, if necessary, enhanced to support the full requirements of the EMS. This will likely mean that there will be a change in personnel responsibilities, a formulation of new administrative systems, additional training, and other additions and changes to existing environmental systems.

How can I tell if the EMS is working properly?

Improved efficiency and cost-effectiveness in managing environmental activities are good signals that the EMS is operating properly. In addition, enhanced environmental performance, as indicated by the EMS's performance indicators, can be expected in time. Since most DOE facilities have many EMS components already in place, rapid results with mature DOE programs (e.g., pollution prevention) cannot be expected. However, within several years of implementation, there should be a noticeable overall improvement in environmental performance as a result of the policy of continual improvement. This is where the EMS will pay dividends otherwise untapped.

How can I get more information?

EH-41 will provide training and technical assistance. This includes a series of EMS fact sheets. For example, a fact sheet is available to answer Frequently Asked Questions on Environmental Management Systems. In addition, EH-41 is collaborating with EPA's Federal Facilities Enforcement Office and Voluntary Standards Network to produce a *Primer on Environmental Management Systems for Federal Facilities*. This information will be available on the Internet at <http://tis-nt.eh.doe.gov/oepa/>. For further information, please contact Larry Stirling by phone at (202) 586-2417, or e-mail at john.stirling@eh.doe.gov.

