

Environmental Management System Operations and Implementation Manual

Office of Sustainable Energy and Environmental Programs

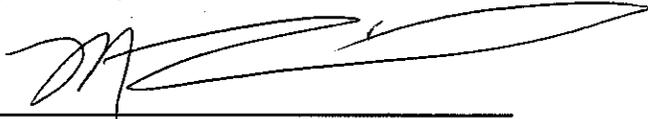
Department of Commerce

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This Environmental Management System Operations and Implementation Manual is approved under the authority of Chapter 1 of the Department's Energy and Environmental Management Manual, dated 13 September 12 and DAO 217-16, dated 5 April 12.

Approved by:

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Date:

21 October 2013

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Section 1 - DEFINITIONS

Agency – The term agency, as used throughout this document, refers to the Department of Commerce.

Appropriate Facility:

CEQ Definition – “Appropriate facility or organization” means any Federal facility or organization that is subject to compliance with environmental regulation or conducts activities that can have a significant impact on the environment, either directly or indirectly, individually or cumulatively, due to the operations of that facility's or organization's mission, processes, or functions. (*CEQ March 29, 2007 Instructions For Implementing Executive Order 13423, Strengthening Federal Environmental, Energy, and Transportation Management*).

DOC Definition – An appropriate facility is defined by using the categories of environmental liabilities developed in September 2012. If a facility meets, 60% of the following criteria it would then be defined as an appropriate facility, and would therefore, be required to have a facility EMS in place, or be covered under a multi-site EMS.

1. Is a Large Quantity Generator under RCRA.
2. Has Underground Storage Tanks (UST) or Aboveground Storage Tanks (AST) that meets or exceed in total, 500,000 gallons capacity at one facility, excluding potable water.
3. Has a known environmentally contaminated site within the confines of the real estate of the facility or campus.
4. Works with regulated nuclear power, energy, or devices.
5. Has known threatened and endangered flora and fauna, on or within the confines of the real estate of the facility or campus.

60% = 3 or more yes answers

Facilities who do not trigger the requirement to stand-up and EMS may do so of their own volition at any time.

Department or DOC – Refer to Departmental Organizational Order 1-1, Paragraph 3.c.1.

Environmental Aspect – An element of an organization's activities, products, or services that can interact with the environment. Environmental aspects of our activities cause environmental impacts. For example, one environmental aspect of DOC office functions

is energy consumption to heat and cool buildings. Energy production causes acid rain and global warming, two negative environmental impacts.

Environmental Impact - An environmental impact is any change (complete or partial) to the environment, whether adverse or beneficial, resulting from a facility's functional mission or activities.

Environmental Management System (EMS) - "Part of an organization's management system used to develop and implement its environmental policy and manage its environmental aspects." – ISO 14001:2004 standard definition

Higher-tier EMS – EMS implemented at the agency level, bureau level, or other level above the facility level; a higher-tier EMS addresses EMS issues that are best addressed at a high level.

Lower-tier EMS – EMS that falls below the higher-tier EMS; can be facility or bureau-level EMS; the EMS of any DOC organization would be classified as lower-tier compared to the Departmental organizational EMS.

Multi-site EMS – Includes multiple facilities, operating units, or subordinate organizations. The key attribute of a multi-site EMS is that the environmental aspects of all the activities, products, and services of all the units are managed as part of a single EMS. This is due to the organization, such as a program office or region, having a defined central function at which certain activities are planned, controlled and managed, and a network of local offices or branches at which such standardized activities are fully or partially carried out.

Operating Unit- Refer to Departmental Organizational Order 1-1, Paragraph 3.c.1.

Organizational EMS – As used throughout this document, the organizational EMS is the DOC-wide, highest-tier EMS.

Significant Environmental Aspect – An environmental aspect of an organization's activities that can cause a significant environmental impact; significance is determined subjectively.

Section 2 - References

Departmental Directives

- a. Departmental Administrative Order 217-16, Energy and Environmental Management, dated April 3, 2012
- b. Energy and Environmental Management Manual (E & EMM), dated September 13, 2012
- c. EMS Executive Steering Committee Charter, dated 10 August 2011
- d. Department of Commerce Environmental Policy, dated 26 September 2013

Executive Orders (EO)

- e. EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*
- f. EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*

International Organization for Standardization (ISO) Standards

- g. ISO 14001:2004 (E), Environmental Management Systems, 2004, English
- h. ISO 14004:2004 (E), Environmental Management Systems – General guidelines on principles, systems, and support techniques, 2004, English
- i. ISO 14050:2009 (E), Environmental management – Vocabulary, 2009, English
- j. ISO 19011:2002 (E), Guidelines for quality and/or environmental management systems auditing, 2002, English

Miscellaneous

- k. CEQ Implementing Instructions for EO 13423, dated 29 March 2007
- l. Office of the Federal Environmental Executive Memorandum “On Organizational EMSs”, dated 31 October 2008

Section 3 – Background

This operating manual is a technical publication as authorized by reference (a) and paragraph 1-3 of reference (b).

This operating manual describes the procedures for implementing the Department of Commerce's (DOC) organizational Environmental Management System (EMS), including the structure, functions, and chain of command for environmental performance reporting, as per Chapter 5 of reference (b), *Environmental Management Systems (EMS)*. The E&EMM is a comprehensive guide to:

- the Department's environmental management and compliance programs;
- compliance with environmental laws and regulations applicable to Department operations, and;
- requirements for compliance with the Department's energy and environmental programs.

Section 6, of this manual contains a guide to setting up and implementing a new EMS under the umbrella of the Department's EMS. An EMS is a formalized set of management processes for maintaining environmental compliance and improving performance. Since 2010, DOC has utilized EMS as the framework for establishing policies, goals, and programs to reduce its environmental impacts. DOC's EMS supports continual improvement with a "Plan, Do, Check, Act" approach, and provides the means to prioritize risk, set objectives, and integrate environmental compliance and management responsibilities into daily operations.

Reference (k), requires federal agencies to utilize EMS as the primary management approach for addressing the environmental aspects of internal agency operations.

In 2008, DOC committed to the Office of the Federal Environmental Executive (OFEE) to advance sustainability practices by establishing organizational EMSs at appropriate levels, including a Department-wide organizational EMS, in coordination with the implementation of multi-site and facility-level EMSs, where appropriate. DOC's organizational EMS provides the backbone for engaging management support for DOC-wide environmental performance, through well-defined reporting lines and authorities that promote accountability.

In October 2009, the federal community was further challenged to address sustainability in operations with the issuance of reference (f). Section 2(j), includes requirements for:

- continuation of EMS implementation and inclusion of environmental aspects in internal agency operations and activities, including environmental aspects of energy and transportation functions;
- establishment of additional and updated agency objectives, targets, and metrics to ensure implementation of the EO, and;
- collection, analysis, and reporting of information to measure performance in the implementation of the EO.

DOC has committed to implementing EMS across the entire organization for the management of environmental aspects associated with its activities and operations, including those related to greenhouse gas emissions, energy and water use, sustainable building design, vehicle use, chemical use, sustainable acquisition, electronics stewardship, pollution prevention, and waste diversion. DOC's organizational EMS engages DOC organizations at appropriate levels to promote environmental stewardship and EO compliance.

DOC's organizational EMS provides the structure to manage and measure the execution of the actions and targets being documented in DOC's Strategic Sustainability Performance Plan (SSPP). DOC published its first SSPP on September 14, 2010, as per the requirements of reference (f). The SSPP establishes DOC sustainability goals, and supporting actions, and is reviewed and updated annually.

Section 4 – Appropriate Facility and Applicability

An appropriate facility has been defined in Paragraph 1.0, Definitions. Appropriate facilities can be individual facilities, groups of facilities, or a class of facilities (i.e. all National Weather Service, Weather Forecasting Offices). All appropriate facilities shall have an EMS, either at the facility level or as part of a higher-tier facility or organizational EMS. All DOC EMSs shall be used for the purposes of achieving the administration's requirements outlined in references (e) and (f) and shall conform to the required elements of references (g) and (k). References (h) through (l) are supporting references of reference (g) and should be utilized only as required in both the establishment and operations of EMSs.

DOC's organizational EMS does not supersede the fully-implemented EMS of any DOC organization, but allows those EMSs to be integrated into the Department's EMS schema. The DOC organizational EMS aligns environmental policies, goals, responsibilities, and performance reporting throughout the Department. The Departmental organizational EMS is intended to provide flexibility in management approach for operating units in administering their respective systems.

Section 5 – Operations of DOC Headquarters EMS

Scope

Introduction

DOC's organizational EMS is based on the International Organization for Standardization (ISO) 14001:2004(E), reference (g), the international standard for EMSs. The DOC organizational EMS, however, comprises only those elements of an EMS that Office of the Federal Environmental Executive (OFEE) has suggested are most effectively implemented at the highest level of the Department, contained in reference (l)). These elements include: environmental policy development; setting of objectives, targets, and metrics; establishing procedures for monitoring and measurement; determination of environmental aspects; establishing a procedure to identify legal and other requirements that an organization attests to; identifying resources, roles, responsibilities, and authorities; establishing guidelines and minimum levels of competence, training, and awareness; establishing procedures for internal and external communication; establishing procedures and methods of documentation, and document control; establishing methods for determining the level of environmental compliance; determining procedures to deal with nonconformities, corrective and preventative actions; developing procedures for the control of both EMS and programmatic records; developing procedures, and standards for the conduct of internal audits; and developing procedures for the conduct of management reviews. Thus, in the procedures below, the Department has summarized reference (g), the requirement for each element, and described any modifications to the standard requirement prescribed by the OFEE, White House Council on Environmental Quality (CEQ), or EOs. This EMS has not been designed to meet every element of reference (g), rather the Department has chosen to implement only those functions that provide consistency, guidance, and efficiency to improve DOC's environmental performance as a whole, as laid out in reference (l).

Procedures

Environmental Policy

Reference (g) requires "top management" to "define the organization's environmental policy." The policy must include specific commitments to continual improvement, pollution prevention, and compliance with legal and other requirements to which the organization subscribes; be documented and regularly updated; be communicated to all staff and contractors; and be available to the public.

Reference (l) states that the EMS responsibilities of a federal agency headquarters include "*establishing agency-wide policies.*"

Reference (d), signed by the Secretary of Commerce, covers all DOC activities and provides an overall directive to all Commerce OUs for continual improvement, and prevention of pollution, as well as a commitment to comply with environmental legislation, and executive order requirements. The policy is reviewed annually for applicability, by the Department's Senior Sustainability Officer (SSO), communicated to all employees, and made available to the public via the DOC EMS website.

Roles, Responsibilities and Resources

Reference (g) states:

"...Management shall ensure the availability of resources essential to establish, implement, maintain, and improve the environmental management system. Resources include human resources and specialized skills, organizational infrastructure, technology and financial resources.

Roles, responsibilities, and authorities shall be defined, documented and communicated..."

Reference (l) states that the EMS responsibilities of a federal agency headquarters include:

"communicating how the agency is organized and managed on a day-to-day basis, including identification of responsibility for addressing objectives and targets; ...ensuring accountability for environmental management, and establishing performance measures..."

The roles and responsibilities of the Secretary of Commerce, SSO, Deputy SSO, heads of Operating Units (OU), Office of the Secretary (OS) key staff office directors, DOC EMS Executive Steering Committee (ESC), DOC EMS Workgroup, DOC EMS Coordinator, OU EMS Coordinator(s), Bureau SSPP POCs, lead auditor, and all DOC employees and onsite contractors are contained in references (a) through (d).

As stated in Appendix A of reference (b), through the annual SSPP data call, the OU's and key OS staff offices provide the Office of Sustainable Energy and Environmental Programs (OSEEP) with details of funding, time and personnel allocated to EMS, and to meeting the Strategic Sustainability Performance Plan targets.

Environmental Aspects, Impacts, Objectives, and Targets

Reference (g) requires organizations to establish, implement, and maintain procedure(s) to identify and document the environmental aspects of its activities and determine

those that can have a significant impact on the environment (i.e. significant environmental aspects).

In addition, reference (g), requires organizations to establish, implement, and maintain documented, measurable environmental objectives and targets at relevant functional levels within the organization. Objectives and targets must include an action plan (called an environmental management program) that identifies responsibility for achieving each objective and "*...the means and time-frame by which they are to be achieved.*"

Section 3(b) of reference (e) states, "*... the head of each agency shall... implement, within the agency, environmental management systems (EMS) at all appropriate organizational levels to ensure (i) use of EMS as the primary management approach for addressing the environmental aspects of internal agency operations and activities, including environmental aspects of energy and transportation functions, (ii) establishment of agency objectives and targets to ensure implementation of this order...*"

Reference (l), states that the EMS responsibilities of a federal agency headquarters include "*...establishing agency-wide objectives and targets (e.g. environment, energy, fleet...).*" This guidance goes on to say "*...The agency headquarters may also choose to...establish agency-wide management programs to address certain environmental aspects, such as environmental aspects of energy use, acquisition and procurement, and fleet, facilities, and electronics management...*"

Reference (l) further states "*...The EMS objectives shall include the goals identified in Section 2 of the E.O. 13423...*"

Section J of reference (f) tasks the heads of federal agencies with "*...(i) continuing implementation of formal environmental management systems at all appropriate organizational levels; and (ii) ensuring these formal systems are appropriately implemented and maintained to achieve the performance necessary to meet the goals of this order...*"

DOC uses an EMS as its primary tool to manage progress towards the goals of references (e) and (f). For the purposes of the organizational EMS, significant environmental aspects are derived from the federal requirements imposed on DOC as an entity through the SSPP, reference (e) and (f), and other requirements and are listed in the SSPP. DOC revalidates its environmental aspects at least annually, prior to setting objectives and targets.

The EMS Coordinator ensures that all targets and objectives have a program or a project associated with it to effectuate the accomplishment of the requirements. The EMS

Workgroup, working through the EMS Coordinator, recommends measurable DOC-wide objectives for improvement in accordance with the SSPP, and other environmental requirements to the SSO. The ESC, by considering risk, severity of impact, and probability of occurrence; compliance complexity and visibility; management prioritization; budget; time; and organizational goals and imperatives, executes the environmental programs, designed to achieve the targets and objectives.

The Department projects its progress towards its long-term goals via its bureau five-year implementation plans, which are updated at least annually, or more frequently as new information becomes available. DOC-wide objectives and their timeframes are based on reference (f) goals, and the OMB sustainability scorecard goals.

The Department's medium-term objectives and timeframes for completion are stated in reference (b) and the SSPP. Short-term objectives (i.e. 1 year or less) are stated in the Department's Sustainability Scorecard submitted to OMB in January and June of each year. Responsibilities for meeting these goals are outlined in reference (b), Chapter 25, which is supported and made enforceable by reference (a). DOC measures progress towards these goals annually through its greenhouse gas and sustainability data call to the bureaus and report to the Department of Energy. Together this system of documents makes up the Department's environmental management programs as required by reference (g).

The SSO reviews and approves objectives at least annually. The objectives provide the bureaus with a clear directive on steps they should take to achieve the SSPP goals.

The above discussion does not preclude DOC Bureaus from setting their own objectives and targets, or in any way overrides their own objectives and targets. DOC organizations with fully implemented EMSs set their own objectives and targets based on their evaluated significant impacts. When determining their significant impacts, DOC organizations shall give due weight and consideration to the agency targets and objectives, and should support Departmental targets and objectives.

Monitoring and Measurement

Reference (g) requires organizations to *"...establish, implement, and maintain procedure(s) to monitor and measure on a regular basis, the key characteristics of its operations that can have a significant impact. The procedure(s) shall include the documenting of information to monitor performance, applicable operational controls, and conformity with the organization's objectives and targets..."*

Section 3(b) of reference (f), requires the heads of federal agencies to *"implement, within the agency, environmental management systems (EMS) at all appropriate*

organizational levels to ensure... collection, analysis, and reporting of information to measure performance in the implementation of this order..."

Section II.A(1) of reference (k) states, "*...The management system will serve as the management framework under which agencies and their facilities or organizations...identify and collect performance measurement information to address the reporting requirements of Section 3(g) of the E.O[13423]....*"

Reference (l) states that the EMS responsibilities of a federal agency headquarters include "*...establishing reporting mechanisms that promote accountability for environmental management and measure performance, collecting, analyzing, and reporting agency-wide performance information...*"

DOC Bureaus report progress on EMS and SSPP objectives and targets to OSEEP in several ways:

Bureaus report on energy, greenhouse gas, and several other performance metrics via the annual energy and environmental report data call in the first quarter of each fiscal year. Key OS staff offices, provides OSEEP with updates to their portions of the OMB Sustainability scorecard at the same time. OSEEP compiles this information into the annual greenhouse gas (GHG) report, Resource Conservation and Recovery Act (RCRA) report (if required), and OMB scorecard update. OSEEP submits this information to the Department of Energy's, Federal Energy Management Program (FEMP) and OMB in late first quarter or early second quarter of each fiscal year. Bureaus and key OS staff offices, annually report to OSEEP on progress with SSPP and Energy Independence and Security Act (EISA) metrics not covered in the annual report data call via the SSPP data call due in the third quarter of each fiscal year. Bureaus regularly brief the EMS Executive Steering Committee on progress with EMS objectives and targets.

Quarterly, bureaus provide input to OSEEP to update the Department's "Dasher", a management tool/report to senior executive management on the sustainability progress of the bureaus "year-to-date".

On a weekly basis, OAS provides the SSO program/project updates, that serve to keep senior executive management informed of progress on "General/Policy Goals" as identified in that fiscal year's objectives and targets.

Reference (b) (available online at http://www.osec.doc.gov/oas/OSEEP/Docs_Newsletters.html), lists data elements that will be requested for the fall data call to the OUs and key OS staff offices.

Legal and Other Requirements

The procedural steps in this section provide for the orderly, reliable and complete collection of requirements that are imposed on DOC by other federal authorities. Unlike a facility-level EMS, which is based on identifying the significant environmental aspects of activities, products and services, the DOC organizational EMS is based on the need to respond to requirements that are imposed on DOC by other federal authorities. The organizational EMS provides the structure to:

- *ensure awareness of those requirements;*
- *set objectives and targets;*
- *transmit information to DOC bureaus, programs offices, and their respective facilities; and*
- *collect performance data.*

Reference (g), requires federal agencies to “...*establish, implement, and maintain procedure(s)*”

- a) to identify and have access to the applicable legal and other requirements to which the organization subscribes related to its environmental aspects, and*
- b) to determine how these requirements apply to its environmental aspects...”*

Reference (g) also requires organizations to “...*ensure that these applicable legal requirements and other requirements to which the organization subscribes are taken into account in establishing, implementing, and maintaining its environmental management system...”*”

Reference (e), Section 3(c) requires federal agencies to “...*establish within the agency programs for ... environmental compliance review and audit...”*”

Reference (k), Section III states “*Where an EMS exists at the appropriate organization level, the elements of the Compliance Management Plan shall be part of the EMS...”*”

and

“...*Each compliance management plan shall formally include the following elements at the appropriate level:*

- *A clear, sustained, and up-to-date commitment by senior leadership to achieve and maintain environmental compliance. This commitment shall be integrated into agency strategic plans and agency policies;*

- *Clearly articulated roles and responsibilities related to environmental performance at all levels to ensure accountability for less than desired environmental performance;*
- *Implementation of an environmental compliance review and audit program that identifies compliance needs and possible root cause of non-compliance;*
- *Integration of compliance management system information and resources.*
- *Allocation procedures to ensure that audit findings and possible non-compliance root causes are tracked and addressed, including allocation of funding.”*

The Department of Commerce provides the bureaus with guidance on applicable environmental laws, regulations, and other requirements through reference (b), which is updated regularly to reflect updates in legal and other requirements.

The DOC Environmental Program Manager is responsible for staying up-to-date with legal requirements and other requirements to which DOC subscribes. The DOC Environmental Program Manager does this via membership in federal agency groups and listserves such as the Federal Electronic Stewardship Working Group, Fedcenter.gov, and the Sustainable Acquisition and Materials Management Workgroup.

DOC disseminates information on federal legal and other requirements through its Environmental and EMS websites. Reference (b), DOC's SSPP, and links to relevant executive orders, legislation, and other documents are all available on the DOC Environmental and EMS websites.

While OSEEP keeps the bureaus informed of updates to federal legislation, and other requirements via the methods described above, bureaus are also subject to state laws, local ordinances, and other applicable environmental requirements specific to their operations and geographical location. Facilities are responsible for staying up-to-date with their State and local requirements. DOC facilities are responsible for compliance with environmental laws, regulations, and other requirements at all levels.

Procedure for Facility Environmental Compliance Assessments

Reference (b), Chapter 4, Environmental Compliance, states that OUs shall determine the frequency of environmental compliance assessments at their facilities based on size and complexity of their facilities, and risk of non-compliance with environmental laws and regulations based on the nature of their mission.

Operating units shall establish and implement a schedule for conducting facility self-assessments of environmental compliance. Environmental compliance assessments shall be scheduled and conducted using an environmental compliance assessment and reporting (ECARS) tool. ECARS tools generate audit questionnaires, store audit results, and track completion of corrective actions to address non-compliances. The use of an online tool allows OSEEP to report the environmental compliance status of all DOC facilities to senior management.

Training

Reference (g) requires that all persons working for or on behalf of an organization that have the potential to cause significant environmental impact be competent and that the organization retain associated records. The reference also requires all staff and contractors to receive regular EMS training.

Section 3 of reference (e) states “...*the head of each agency shall... establish within the agency programs for (i) environmental management training...*”

OSEEP publishes environmental stewardship training through the Commerce Learning Center (CLC) at <https://doc.learn.com>. This training covers the basics of EMS, DOC-wide significant environmental impacts, pollution prevention, and roles and responsibilities. Contractors without access to the CLC can access and complete the training from the OSEEP website. The CLC maintains training records for all staff and contractors who take the training through the CLC portal.

Reference (g) requires organizations to ensure that employees are competent for the tasks they are required to perform, if these tasks have the potential to cause a significant environmental impact. Competency can be assessed based on training, experience, or education. This is assessed at the Department of Commerce during the hiring process, and annually during the Individual Development Plan (IDP) development and execution. Hiring managers verify the competency of applicants for a position before hiring, and competency training is tracked by the Office of Human Resources Management. Contractors are assessed at the time they are assigned to a Department contract, against industry standards and during the contract acquisition proposal evaluation process.

Internal Communication

Reference (g) requires organizations to “...*establish, implement, and maintain procedure(s) for...internal communication among the various levels and functions of the organization...*”

Bureau SSPP points of contact report on progress with objectives and targets to OSEEP and the DOC Executive EMS Steering Committee, primarily via the methods described in "Monitoring and Measurement" above. Progress with objectives, targets, and EMPs is reviewed during EMS Workgroup and ESC meetings. Bureau EMS Coordinators communicate with others within their bureaus according to the bureau's, established procedures.

If the Department receives positive or negative communications it is done through the Department's gogreen@doc.gov email address. This email address is communicated in the EEMM and on the Department's website as the preferred method of communication for sustainability, environmental and energy matters. The gogreen@doc.gov mailbox is monitored for incoming mail, assigned to a subject matter expert by the OSEEP Associate Director with a deadline, and the email correspondence is answered in the same manner. The correspondence is kept in an archived folder in accordance with document retention requirements.

OSEEP communicates internally about objectives, targets, and the EMS through the DOC website. The website contains internal DOC documents relevant to the EMS, objectives and targets, and pollution prevention, as well as links to external documents such as regulations and informational websites. OSEEP regularly updates the EMS Workgroup about new issues via the workgroup meetings and e-mail. OSEEP maintains other internal documents in accordance with document retention requirements.

External Communication

Reference (g) requires organizations to *"...establish, implement, and maintain procedure(s) for...receiving, documenting, and responding to relevant communication from external interested parties..."*

Reference (k) states: *"...To facilitate communication between Federal agencies, their stakeholders, and their neighbors, as part of the EMS, agencies shall commit to proactive communications with interested parties. EMSs should support appropriate inclusion of local participation, consistent with the objectives of E.O. 13352 of August, 2004, Facilitation of Cooperative Conservation..."*

DOC's external communication falls into two categories: communication with external stakeholders/the public and reporting to other federal agencies. DOC makes relevant information about its EMS available to the public via the DOC OSEEP website and its Energy and Environment Quarterly newsletter, which is also posted on the website. Information requests from the public are managed through Operating Unit procedures

established for specific categories of requests such as the Freedom of Information Act (FOIA), Congressional correspondence, and other controlled correspondence. FOIA requests shall be handled according to the U.S. Department of Commerce FOIA Reference Guide, available online at <http://www.osec.doc.gov/omo/foia/foiarequest.htm>.

The Department can also receive positive or negative communications through the Department's gogreen@doc.gov email address. This email address is communicated in the EEMM and on the Department's website as the preferred method of communication for sustainability, environmental and energy matters. The gogreen@doc.gov mailbox is monitored for incoming mail, assigned to a subject matter expert by the OSEEP Associate Director with a deadline, and the email correspondence is answered in the same manner. The correspondence is kept in archived folder accordance with document retention requirements.

OSEEP reports to OMB on progress with specific objectives and targets through scorecard assessments every six months, the annual energy and sustainability report, and annual SSPP updates. OSEEP generates additional environmental reports as necessary for OMB and other agencies.

Document and Record Control

Reference (g) requires *"...organizations to establish procedures for document review and approval; identify revision status; ensure only current versions are in use; and control documents of external origin necessary for the EMS. The reference also requires, "...organizations to establish procedure(s) for identification, storage, protection, retrieval, retention, and disposal of records..."*

Document Control Number, issue date, next review date, and version number shall be identified on all departmental EMS documents. Obsolete EMS documents that are retained will be retained electronically in an archive directory separately from the controlled electronic copy. The SSO, the Deputy SSO or the Associate Director, OSEEP must approve all departmental EMS documents prior to issue depending on the level of the document.

All current DOC EMS documents are available on the DOC EMS website, and each EMS document states this information in the header or footer. The date of issue will be printed on each page of a controlled document.

Records shall be legible, identifiable, and easily retrieved for use or inspection. Records are maintained in the manner specified and retained, as required, by Department Administrative Order 205-1, Records Management.

Internal Audits

This procedure only applies to audits of the DOC organizational EMS, and does not address audits of any other DOC organization.

Reference (g) requires an organization to periodically evaluate whether its EMS conforms to the relevant requirements and is appropriately implemented and maintained.

Section II.C (1) of reference (k) states, "*...For the purpose of conformance to E.O. 13423, an EMS shall be considered fully implemented when (1) it has been the subject of a formal audit by a qualified party outside the control or scope of the EMS, (2) audit findings have been recognized by the appropriate level of the agency implementing the EMS...*"

Section II(2) of the reference (k) states, "*...Once conformance has been declared, the EMS shall then be audited by a qualified party outside of the control or scope of the EMS at least every three years from the date of the initial declaration...*"

Reference (l) states that "*...a higher-tier EMS should be audited periodically by a qualified party from within the organization (also called an internal or first-party audit) to ensure its elements are carried out as planned, but need not be audited by a qualified party outside of the control or scope of the EMS (also called an external or second-party audit) as otherwise required by E.O. 13423 for facility and multi-site EMSs. This exemption applies as long as the higher-tier EMS is designed to address a limited number of elements that support the implementation of complete, lower-level facility and/or multi-site EMSs...*"

The Department conducts an audit of its EMS at least annually, or more frequently as appropriate. The DOC EMS Coordinator chooses the lead auditor. The EMS Coordinator also determines the scope of internal audits of the Department's organizational EMS. The lead auditor is responsible for choosing the audit team members, with assistance from the EMS Workgroup, drafting the audit plan, and submitting the audit report to the EMS Coordinator. Audit records are retained by the DOC EMS Coordinator.

Audits review, at a minimum, the adequacy of the: environmental policy; setting of objectives, targets and metrics; procedures for monitoring and measurement; determination of environmental aspects; identification of legal and other requirements that an organization attests to; resources, roles, responsibilities, and authorities; guidelines, and minimum levels of competence, training, and awareness; procedures for internal and external communication; procedures and methods of documentation and

document control; the methods for determining the level of environmental compliance; procedures to deal with nonconformities, corrective and preventative actions; procedures for the control of both EMS and programmatic records; procedures and standards for the conduct of internal audits; and procedures for the conduct of management reviews to ensure they are in accordance with federal guidance.

At the discretion of the EMS Coordinator, the audit scope may be reduced in breadth to one-half each internal audit year such that all OFEE EMS elements are audited in one complete two year internal audit cycle. The purpose of this extension is to allow for both smaller audit teams, and to allow greater in depth auditing so as to expose deeper levels of the EMS to adequate scrutiny.

External Audits

External audits, are completed annually, or no more than every third year and shall cover all OFEE mandated EMS elements.

Declarations of Conformance

The Department will issue a Declaration of Conformance as required by reference (k) at a minimum of every three (3) years, based on the results of either an internal or external audit.

Corrective and Preventive Action

The purpose of this guidance is to define responsibilities and procedures for investigating and documenting EMS non-conformances and for initiating and completing corrective and preventive actions.

Reference (g) requires organizations to establish procedures for dealing with actual and potential non-conformances with EMS requirements. Results of corrective and preventive actions must be documented and their effectiveness reviewed.

The DOC EMS Coordinator tracks corrective and preventive actions that arise from internal and external audits of the Departmental EMS, as well as those that arise outside of the audit cycle via a spreadsheet or database. An entry in the corrective and preventive action spreadsheet/database shall be completed for each corrective or preventive action (CPA) identified. The CPA entry records the root cause of the non-conformance, specifies a corrective action plan (CAP), and deadline for taking

corrective/preventive action. The effectiveness of corrective and preventive actions taken is reviewed periodically. The CPA table is maintained by DOC EMS Coordinator.

The EMS Coordinator ensures that a root cause for each CPA is determined using an acceptable method, (i.e. 5-Whys, Fishbone, Taproot©, etc.). The root cause is entered into the CAP, and the solution engineered shall be corrective of the root cause not the symptomatic finding.

Management Review

Reference (g) requires top management to regularly review an organization's EMS, including opportunities for improvement; environmental policy; objectives and targets, and the extent to which these have been met; results of internal audits and environmental compliance evaluations; status of corrective and preventive actions; changing circumstances; and follow-up actions from previous management reviews.

Section II.A (2) of reference (k) states "*...Once implemented, an EMS shall be reviewed and updated annually or more frequently, as appropriate, by senior leadership accountable for implementation of that EMS.*"

DOC senior management provides resources and guidance for the departmental EMS. OUs provide resources and guidance for their respective EMSs. The DOC SSO acts as the top management representative for the Departmental organizational EMS. At least annually, the DOC EMS Coordinator and/or OSEEP Associate Director will brief the SSO, through the Management Review, on the status of the EMS. These topics may be covered in multiple briefings throughout the year or summarized in a single annual briefing. At a minimum, the management review will include:

- *progress on departmental objectives and targets;*
- *reporting to OMB and OFEE, including the SSPP and scorecards;*
- *any relevant communications from external interested parties;*
- *results of audits;*
- *recommendations for improvement;*
- *relevant changes in legislation, regulations, or other circumstances affecting the EMS, bureaus, or operations;*
- *follow-up actions from previous management reviews;*
- *DOC's environmental compliance status, and;*
- *current status of Corrective Action Plans*

During management review briefings, the SSO provides guidance on future EMS direction. Management review records will be kept on the OSEEP website.

Objective evidence of management review is maintained by using EMS Form 4.6.1.

Upon acceptance by the SSO of the management review results, a Statement of Continued Conformance will be executed by the SSO and posted at:

http://www.osec.doc.gov/oas/OSEEP/EMS_page.html

Organization

Executive Steering Committee

The ESC leads the implementation and operation of the DOC Headquarters organizational EMS program (first tier EMS), in accordance with reference (c), and advises the Secretary on the health and effectiveness of the Department's program. The ESC uses EMS as the management construct to ensure that the Department plans, programs, and required executed actions meet or exceed all SSPP goals and other non-SSPP goals as laid out in reference (d). Bureau representatives on the ESC champion EMS within their organizations and report implementation and operation status of lower-tiered Bureau EMS programs to the ESC. Bureau representatives also report actions that their Bureau is taking to meet their share of SSPP goals and other related federal mandates.

Headquarters EMS Workgroup

The DOC EMS Workgroup is the forum for communication of technical EMS and environmental updates between the ESC and the EMS Coordinator, energy and environmental program managers, bureaus, and staff offices. The overarching responsibilities of the EMS Workgroup are to ensure the operation and continual improvement of the EMS, to execute the directives of the ESC, and to serve as an advisory body to DOC management. The ESC is briefed as required by the EMS Workgroup. The Headquarters EMS Workgroup is also guided by reference (c).

Section 6 – Implementation of a Facility-Level EMS

Purpose

Federal facilities are not only concerned with environmental compliance and enforcement, but they also are required to, where appropriate, implement an Environmental Management System (EMS). Beginning with Executive Order (EO) 13148

in 2000, and continuing in 2007 with reference (e), and in 2009 with reference (f), Federal facilities must now implement an EMS, at all appropriate facilities.

This section covers the principles and performance objectives that provide the basis for federal agencies to move toward integrated and responsible environmental management. It focuses on effective environmental management for reaching the highest levels of environmental performance. Adherence to the principles discussed below, will ensure the implementation of an EMS that will provide a facility or an organization with environmental performance that is cost-effective, integrated in its business processes, and sustainable.

Introduction

This section is designed to help Department of Commerce managers, both facility and organizational, who are preparing to adopt an EMS. Properly implemented, an EMS can reduce support costs and improves productivity and sustainability, while advancing environmental protection and performance. A properly implemented and managed EMS puts Federal environmental practices and performance on the same level as those of America's best-run corporations.

While there are many different models of environmental management systems, the most common construct, and the one that the federal government has dictated to be used is contained in reference (g). This manual is intended for facilities and organizations that are in the process of implementing an EMS at either the facility, or organizational level.

An EMS is a systematic approach to ensuring that environmental activities are well managed, and are part of the business equation. Because an EMS focuses on management practices, it can operate at facilities and organizations of varying sizes, complexities, and missions. Facilities and organizations can be of many types such as offices, laboratories, ships, programs, line offices, bureaus, or agencies. An EMS provides managers with a predictable structure for managing, assessing, and continuously improving the effectiveness and efficiency of the management of their environmental activities. The EMS process centers around periodic reviews by top management, with an emphasis on continual improvement.

Adopting an EMS doesn't mean one size fits all. Each agency, facility, bureau, or program can structure its EMS to address its particular goals, activities, budgets, missions, conditions, and stakeholders. The presence of an EMS does not guarantee better performance or compliance. Adopting an EMS process rarely requires beginning from scratch. Many facilities or organizations will find they have most or all the elements of an EMS in place. Complex facilities or organizations with many programs

elements or possibly host-tenant relationships maybe faced with multiple, inconsistent, or unrelated elements. An EMS processes can help draw together such disparate elements, producing a clearly defined and integrated framework for environmental activities.

Implementation Steps

General Requirements

The purpose of reference (g), Section 4.1, General Requirements is to define the extent of the mandatory part of the ISO specification for implementation purposes. If an organization is pursuing third party certification, the entire portion of Section 4 is mandatory regardless whether it is a facility or organizational level EMS.

If third party certification is not being pursued then Federal organizational EMSs are not required to meet all elements of Section 4 of reference (g). In accordance with reference (l), *"... higher tier EMSs need not address each of the ISO 14001 elements but should at least consider addressing organizational-level: Policy; objectives, targets and metrics; allocation of resources; accountability; monitoring and reporting; and management review."* The reference also further states, *"...higher EMSs should be audited periodically by a qualified party from within the organization (also called internal or first-party audit) to ensure that its elements are carried out as planned, but need not be audited by a qualified party outside of the control or scope of the EMS (also called a external or second-party audit) as otherwise required by Executive Order 13423 for facility or multi-site organizational EMSs. This exemption applies as long as the higher-tier EMS is designed to address a limited number of elements that support the implementation of complete, lower-level facility and/or multi-site organizational EMSs..."*.

For facility level and multi-site organizational EMSs, the entire portion of reference (g), Section 4 is required to be fully met. Each and every requirement is mandatory, irrespective of whether it is deemed to be relevant or not. The most important prerequisite for passing an audit is completeness of the EMS, i.e., a system that addresses each and every requirement. An EMS may treat some element requirements of reference (g) lightly, which may give rise to a minor nonconformance during an audit; but when a requirement is not addressed at all, a major nonconformance has occurred, which is an automatically failed audit.

Environmental Aspects

The relationship between developing environmental aspects and the environmental policy

Though the environmental policy, reference (d), drives the entire EMS, it is the significant aspects, and the objectives derived from these significant aspects of an organization which define the requirements for an EMS. The theory is based on the premise that the environmental policy will be fulfilled when the objectives of an EMS are achieved.

From a purely theoretical standpoint the development of the environmental policy, objectives and targets follows a hierarchical or sequential approach, but in practice, the formulation of the environmental policy, identification and evaluation of aspects, and the establishment of objectives and targets is an iterative process. All are done simultaneously with one influencing the other. The first step is identification of aspects. Then the policy is drafted to set priorities. The priorities are used in evaluating the significances of the aspects. The policy is then further developed to account for the significant aspects. A set of objectives to fulfill the policy is then proposed. The objectives are reviewed against the list of significant aspects, and adjustments to aspects or objectives are then translated into policy revisions.

Identify environmental aspects of the organization's activities, products and services

Environmental aspects are elements of an organization's activities, products, or services which can interact with the environment. A formal classification into the three categories is not required; however, all three categories should be represented in the list of aspects.

Examples of specific elements of activities are:

- Transportation
- Handling and storage of chemicals
- Emissions of gases to the atmosphere
- Discharges of wastewater
- Disposal of solid waste
- Energy consumption
- Emission of excessive noise, or unpleasant odors
- Operation of underground, or aboveground storage tanks
- Shut-down, or start-up of machines or systems
- Employee transportation

Examples of product-related aspects are:

- Material requirements (kind and quantity)
- Material utilization and waste
- Byproducts disposal of product packaging
- Aspects arising from intended and unintended use of products (emissions, noise, energy consumption of products in service)
- Disposal of products at end of life

Service-related aspects are usually more intangible and may include a very wide variety of aspects.

Some examples might be:

- Use of supplies (especially paper)
- Service, maintenance, and cleaning of equipment
- Traffic generated by customers
- Energy consumption for air conditioning and heating
- Use of disposable food containers
- Transportation requirements, means and routing

When identifying environmental aspects, organizations need to consider the following different types of operating conditions:

- Normal operating conditions
- Test conditions
- Start-up conditions
- Shut-down conditions
- Emergency conditions

Each operating condition may have differing aspects.

At this stage of identifying environmental aspects, the importance of the aspect should not be considered. The objective is to identify a broad pool of diverse aspects relevant to all facets of operations, products, services and operating conditions. Primary sources of such information are environmental program reviews, life cycle analysis, reviews of applicable legislation and regulations (federal, state, and local), community feedback, etc. Although reference (g) does not require conducting formal environmental reviews and life cycle analysis, an organized, rigorous, and verifiable method must be used for collecting the baseline information necessary to correctly identify all relevant environmental aspects. A purely intuitive, mental process is not acceptable. The system

must be also capable of reviewing the continual relevance of identified aspects in response to changing circumstances. Reviews should be triggered by certain new developments, and be included in the periodical management reviews of the system.

Reference (g) clearly states that there must be a procedure for identifying environmental aspects. The procedure needs to define the scope of, and responsibility for, conducting preparatory studies to provide baseline information, and outline the methodology and process for identifying and documenting the environmental aspects. The process should involve a wide range of management and other personnel with relevant experience and expertise. The procedure should also require that the process of identifying environmental aspects be applied again in response to changing circumstances, such as product or process changes, expansion, relocation, or external changes in the environment or legal obligations.

The most important record is the list of identified environmental aspects. Additional evidence of conformance should be provided by documents and records established in the process, such as baseline reviews and studies, written communication, minutes of meetings, etc. For established systems, there should also be evidence that environmental aspects are reviewed in response to changing circumstances.

Select environmental aspects that can be controlled, or over which the organization can be expected to have influence

Reference (g) states that organizations need only identify those environmental aspects that they can control, and over which they have influence. The risk is a temptation to interpret their ability to control environmental aspects too narrowly (i.e. exclusively in areas where they have direct and unrestricted decision-making powers). The process of evaluating the degree of control and influence that an organization has over environmental aspects should be deliberate and systematic. There needs to be some form of defined criteria, and a process of systematically applying these criteria against each aspect. The procedure for identifying environmental aspects should have a section explaining how to evaluate the degree of control and influence that the organization has over its aspects. Auditors will often use the issue of control and influence over aspects as a test of true intentions of the organization. When an organization automatically assumes that anything outside its direct operations is beyond its control and influence, auditors may take that as a sign that there may be a problem with management commitment to the EMS.

Select significant environmental aspects using disciplined and objective methodology

Selection of significant environmental aspects is the single most important step in developing an EMS. The selected significant environmental aspects will (should) dictate the environmental policy, objectives and targets, and will provide the criteria for the design of the entire EMS. The list of significant environmental aspects that emerge from the selection process should be relevant and comprehensive, to ensure that all important aspects are controlled. The list should not be too long. An EMS that tries to control too many aspects is more likely to fail due to a lack of clear purpose and/or insufficient resources. It is best to have a short but relevant list, focusing the EMS on a limited number of truly important aspects.

The process of selecting significant environmental aspects must use a disciplined approach based on a rational and documented method. The method selected should include classification of associated impacts, and some form of risk and/or impact analysis rating the probability of occurrence and severity of consequences. Forms of classifications can be by groups such as:

- Regulated aspects
- Pollution related aspects
- Ecosystem and biodiversity related aspects
- Resource utilization related aspects
- Community related aspects

Aspects can also be classified into:

- Direct or indirect
- Internal aspects
- Regional aspects
- Global aspects
- Impacts that cannot be satisfactorily evaluated due to a lack of reliable information or data

A basic form of risk analysis can be carried out by using a matrix; rating the probability of occurrence of an impact and its consequence, and then multiplying the two ratings to determine the risk factor. The probability can be rated 1 through 4, with 1 a rating for likelihood of occurrence only in extreme conditions and 4 for likely occurrence during normal operating conditions. The consequence rating can be rated starting at 0 for no measurable and 4 for damaging and/or irreversible impact. While purely intuitive and mental methods for selecting significant aspects are not acceptable, common sense and intuition need to be used, especially to verify that the results of the systematic approach makes sense. A risk analysis and rating system are only tools aiding in decision making. The final decision as to what environmental aspects are significant is a judgment.

A special category of aspects are those activities, processes, and products that are subject to permitting, reporting, or implementation of other special controls required by law or regulations. An effective and common approach is to automatically classify them all as significant, regardless of risk or other factors.

Reference (g) explicitly requires a procedure for selecting significant environmental aspects. The process of selecting significant aspects can be described in the same procedure that describes the initial identification of environmental aspects. The procedure should outline methods used for evaluating significance of aspects; assign responsibility for carrying out the evaluation, and for review and approval of the selected aspects; and instruct how to establish a formal, authorized list of significant environmental aspects. To explain the methods for evaluating significance of aspects, the procedure can include specific instructions on how to rate risks and consequences, and calculate the risk factor; define categories of aspects, and assign significance ratings for each category; provide the formula for calculating the overall significance rating; and provide matrices for working out the rating.

Environmental Policy

Each level of EMS must have its own environmental policy. Portions of its environmental policy can come from a higher-tier environmental policy, but every organization will have some policy elements that are unique to it and require communication to the organization and the public. The environmental policy drives the entire EMS. It communicates the organization's mission, vision, core values, and beliefs with respect to the environment, and contains commitments to improve, maintain, or control environmental performance with respect to specific significant environmental impacts of the organization's activities, products, and services. The mission, vision, values and commitments expressed in the policy should be sufficiently specific to provide a framework for establishing objectives and targets that must be met to implement the policy. Once the policy, objectives and targets are established, the remaining elements of the EMS are designed and implemented for the sole purpose of fulfilling the policy. The environmental policy is the master template for the mission and the purpose of the entire EMS. The environmental policy must be formulated and/or endorsed by top executive management. Policies that are signed by a mid-level management representative are suspect. Top-level endorsement of the policy not only signifies commitment to its goals, but also a commitment to provide adequate resources to establish and maintain an EMS for achieving these goals. Everything in the environmental policy is auditable. The policy will be checked against relevant environmental aspects and impacts, legislative and regulatory requirements, and the objectives and targets. There must be a clear correlation between these elements and the environmental policy. One of the most important aspects of the audit is to verify that the environmental policy is appropriate and comprehensive. Nonconformances

related to the environmental policy are usually classified as major and result in a failed audit.

The environmental policy appropriate to the organization

Every organization's interaction with, and impact on the environment is unique. It depends on the nature and scale of the operations; history of environmental performance and incidents; location; land use in the immediate vicinity; proximity to environmentally sensitive natural features (watercourses, forests, habitats, etc.); environmental impacts from other sources in the vicinity; applicable environmental legislation and regulations and the level of enforcement; community and wider political climate; customer and market attitudes; etc.

For the environmental policy to be appropriate and comprehensive, management responsible for formulating the policy must be fully aware of all relevant environmental issues and their relative importance. Reference (g) does not require a formal initial environmental review and a formal statement of current position. While a formal initial environmental review is not explicitly required, organizations must still demonstrate that their management has comprehensive knowledge of the relevant environmental impacts, and thus is able to formulate an environmental policy that is appropriate to the organization.

A contentious issue is product life cycle analysis. While reference (g) does not require formal life cycle analysis, in order to identify all relevant environmental aspects related to an organization's products and services, consideration must be given to such issues as impacts associated the materials and components used in the product, impacts of the product themselves during their service life, and disposal and other end-of-life impacts.

The environmental policy can be either established as a separate document or be included in the environmental system manual. There is no need to have procedures for carrying out the initial environmental review, or formulating the environmental policy. These activities take place before the whole management system and its procedures are established. However, there should be a process for updating and revising the policy. This is usually done in the framework of management reviews and can be documented in the Management Review procedure.

Ensure that the environmental policy provides a framework for setting environmental objectives and targets

The policy must provide a framework for objectives and targets that is consistent with the role of the policy. The environmental policy is the driver for the whole EMS. Every objective, target, program, and activity of the EMS must arise from the policy. Legitimacy of objectives and targets is also an issue. One of the reasons for this requirement is the top executive management, who formulated the policy is presumed to be committed to providing support and resources for those objectives, targets, and activities that fulfill the policy. Such support cannot be presumed for any objectives or targets that are not supported by the policy.

The principle that the environmental policy must provide a framework for objectives and targets should be communicated somewhere in the system documentation (i.e. the introductory section of the environmental system manual can explain the importance of the environmental policy, including its role as a framework for objectives and targets). Training materials for personnel should also communicate this role.

Inclusion of commitment to continual improvement in the environmental policy

The definition of continual improvement in reference (g) defines the improvement process as enhancement of the EMS, rather than the environmental performance itself. The position of continual improvement is somewhat ambiguous. It is only required on the level of policy commitment and management review. There are no requirements for planning, implementing and checking continual improvement programs.

The intent of reference (g) is to suggest a system for achieving and maintaining certain environmental performance levels, but not necessarily perpetually improving performance in all areas. Especially with respect to regulatory requirements, once the requirements are met, there is no obligation to exceed them. On the other hand, the EMS must be perpetually improved to be ever more efficient in maintaining and potentially improving environmental performance.

To conform to this requirement, the environmental policy must contain a statement committing the organization to continual improvement. It is best to define what is meant by continual improvement, whether it pertains to the EMS, environmental performance, or both. An example that satisfies the requirement would be: "DOC will strive to continually enhance and improve its EMS to ensure that our environmental performance is consistent with applicable legislation and regulations and the environmental goals and principles stated in this policy. Performance of the EMS will be monitored through internal and external audits, and the system will be periodically reviewed by executive management."

At a minimum, two documents of the EMS should reference continual improvement: (1) the environmental policy, stating the commitment to continually improve the system, and (2) the procedure dealing with management reviews, providing instructions for how opportunities for improvement should be identified and implemented.

Inclusion of commitment to prevention of pollution in the environmental policy

Reference (g) leaves it to the organization implementing the standard to determine what the important goals that will drive the EMS are, except for prevention of pollution and compliance with legal and regulatory requirements. They must always be included in the policy. Policy commitment to prevention of pollution should be reflected in the planning, implementation, verification, and management review elements of the system. All relevant types and sources of pollution should be identified, and the important and controllable ones should be classified as significant aspects. As required for significant aspects, those should be reflected in the environmental policy, objectives and targets, and there should be implemented programs for achieving the objectives. Progress toward reduction or elimination of pollution should be monitored and reported to management for review. The commitment to prevention of pollution does not have to be unconditional. Technical and economical viability and cost effectiveness considerations can be used to set limits on the amount of resources that will be allocated to prevention of pollution.

At a minimum, implementation of this requirement should be documented in the environmental policy, and in two procedures: (1) a procedure instructing how to deal with pollution-related issues when identifying and classifying environmental aspects and (2) a procedure requiring that programs for prevention of pollution and their results be evaluated by the management review.

Inclusion of commitment to compliance with environmental regulations in the environmental policy

Legislative and regulatory compliance is a sensitive issue, especially as applied in the U.S. A number of important questions are generated: Does a third-party certification audit include a regulatory compliance audit, and does it take the place of one? Can an organization that does not currently comply with a regulation be certified to reference (g)?

Foremost, it must be remembered that reference (g) is an environmental management system standard, is not a standard for environmental performance, it does not establish any absolute requirements for environmental performance, and it does not intend to increase or change an organization's legal obligations. With respect to legal and

regulatory compliance, the standard requires a commitment to comply rather than unconditional compliance. Using the standard to enforce regulatory compliance is contrary to its intention and purpose. The requirement for commitment to comply should be interpreted as a requirement for an organization to take all necessary and reasonable actions to ensure compliance, including identification of applicable laws and regulations, determination of compliance status, implementation of corrective actions in areas where full compliance is needed and not yet achieved, and a system for continually maintaining required performance. From the above discussion, it is clear that an organization that does not currently comply with a regulation can be certified to reference (g), provided the organization has identified the area of noncompliance, and has implemented programs to improve its performance to achieve compliance. This interpretation is consistent with the letter and intent of the standard. In addition to legal and regulatory compliance, the standard also requires a commitment to comply with other requirements to which the organization subscribes, such as Executive Orders, industry codes of practice, special agreements with public authorities, voluntary guidelines and standards, contractual requirements, and internal performance criteria. To satisfy this requirement the environmental policy must contain a statement of commitment to comply with environmental laws, regulations, and other requirements to which the organization subscribes.

Documentation, implementation, and communication of policy to all employees

The environmental policy can be established as a separate document, or be included in the EMS manual. The policy should be signed by top executive leadership, and be controlled with respect to its revision level (dated or marked with its revision number).

A typical policy should be a couple of paragraphs long. To help organize the policy it is a good idea to divide the policy into sections identified by headings (i.e. continual improvement, prevention of pollution, compliance with regulatory and legislative requirements, etc.).

The requirement to communicate the environmental policy to all employees is somewhat redundant with the more stringent requirement for training employees to understand the policy (reference (g), Element 4.4.2). The term “communicate” means to explain. All employees should know the most important principles and commitments stated in the policy, and should be able to explain their roles and responsibilities in achieving conformance with the environmental policy. A written environmental policy is in itself sufficient to conform to the requirement to document the policy. With respect to communicating the policy to employees, the EMS manual should explain how the policy is communicated, and there should be documented training programs to explain the policy.

Policy availability to the public

The requirement to make the environmental policy available to the public supports the general principle of communication with interested parties. It should not be interpreted as intent to introduce public accountability for failing to implement the policy. If this was so, there would also be a requirement to publically publish environmental performance data, or have the policy independently verified. Any practical way of making the environmental policy available to the public is satisfactory. It can be published on the internet, newspaper, announced and explained in a press conference, or simply displayed in in the lobby or at the front gate.

Legal and Other Requirements

To comply with this requirement, an organization must have a procedure for identifying which environmental laws and regulations apply to its operations, what they require, and for keeping this information up to date. The organization should also keep track of other environmental requirements to which it subscribes, such as Executive Orders, industrial guidelines and standards, agreements with public authorities, and contractual requirements.

Information about environmental regulations can be obtained in two different ways, the organization can mine the information, or it can subscribe to a professional environmental information database service (i.e. West Law, BNA, RegScan, etc.). If an organization decides to develop the information internally, they can obtain the requirements from federal, regional, and state agencies; counties; cities; industrial and professional associations. The result of the research should be a list and a library of all applicable regulations. In some cases it may be appropriate to transcribe some regulatory requirements into internal specifications or procedures. If a professional service is contracted, there may be no need to maintain a complete in-house library, providing that the full text of relevant regulations can be quickly obtained from the service. Under either scenario, there should be available in-house, a complete list of applicable regulations, and a summary of the regulatory requirements.

Reference (g) explicitly requires a procedure for identifying legal and regulatory requirements. The procedure should assign a person, or functional position (i.e. the environmental manager), responsible for researching information about relevant laws and regulations, and for establishing a list and obtaining copies of applicable regulations. The procedure should also instruct how and how often the list of applicable regulations should be reviewed and updated. Any questions or concerns the person

assigned with compiling this information may have should be directed to appropriate legal counsel.

Objectives and Targets

Establish and maintain objectives and targets at all relevant functions within the organization

Environmental objectives are goals that must be set and achieved to fulfill the environmental policy. The implications of this definition are significant. It establishes the premise that an environmental policy commitment that is not translated into specific objectives will not be implemented and fulfilled. Objectives are the link between the environmental policy and the management programs for implementing the policy.

An environmental target is a specific and quantifiable milestone that must be achieved in order to achieve an objective. Targets to be quantifiable must have a metric that is measurable. In some cases an objective and a target may be combined. Simple and specific objectives that are quantified, and have a time frame for achieving them may not need to be further developed into targets. In requiring targets, reference (g) communicates the principle that, in the end, the commitments of the environmental policy, and the associated objectives be translated into specific plans to achieve certain goals within a specified time frame. Reference (g) requires that objectives and targets be quantified where practicable. That means that they must be quantified whenever it is desirable and possible. Objectives and targets must also specify a time frame. A goal to reduce emissions by 10% is meaningless, if it does not stipulate whether the reduction will be achieved in one year or three.

Objectives and targets must be established at appropriate functions and levels within the organization. Unlike the environmental policy, which must be formulated by the top executive management, objectives and targets may be specific to a function, department, project, product group, or site; and can be established by lower level managers. For example, a general policy commitment to reduce energy consumption may be translated by the building management division to reduce energy used in heating their buildings, and by the transportation department into an objective to reduce transportation miles. Failure to develop objectives at a relevant function is a nonconformance.

Consider significant environmental aspects

While in theory reference (g) requires the environmental policy to provide a framework for developing environmental objectives, in practice the policy may be too general to

deal with specific issues. The list of significant environmental aspects is a better reference for developing the objectives. It is natural to establish a one-on-one correspondence between the aspects and the objectives because they both address specific issues at the same level. Consistency between the objectives and the environmental policy will be achieved automatically, as the significant aspects are also considered in formulating the policy.

There is no requirement that objectives be established to address every identified significant aspect, but every significant aspect must be considered in setting the objectives. Whenever a significant aspect is not followed with a corresponding objective, there must be a good reason. The reasoning should be adequately documented. It may be because of limited resources, and a need to prioritize, or because there is no prospect for meaningful improvement of environmental performance with relation to the aspect.

There are two strategic approaches that can be employed that are compatible with reference (g). The first is to set objectives only in relation to those significant aspects where there is a prospect for meaningful improvement, or where there is a deficiency. The second approach is to set objectives corresponding to all significant aspects, in which case some objectives will be to maintain performance at current levels without any improvement. The advantage of the second approach is it establishes an unbroken hierarchical order between significant aspects, objectives and management programs.

The correspondence between significant aspects and objectives does not need to be a direct one-to-one relationship. In some cases it may be appropriate to lump several aspects together, and address them by one objective, and there may be situations where several objectives will be established to address one aspect. For example, excessive use of paper may be addressed by an objective to reduce direct mail, and by another objective to reduce internal consumption of paper.

Consider legal and other requirements

This requirement will be satisfied by default, when all regulated environmental aspects (i.e., those subjected to legislative and regulatory requirements) are automatically classified as significant, and when all significant aspects are automatically addressed by an objective. This approach is not required by or even suggested in reference (g), but it induces certain hierarchical order in the system. Its advantage is, the selection of all issues to be controlled by the EMS is done at the stage of selecting significant environmental aspects, and then all these issues are automatically accounted for in establishing objectives, targets, management programs, and monitoring and measurement systems. Establishing objectives for all regulated aspects does not automatically mean that performance in all regulated areas must be continually

improved. At a minimum, objectives must be set in all areas that do not comply with applicable laws and regulations.

Consider views of interested parties

Implementation of this requirement will differ considerably from one organization to another. It will depend on the nature of the operations and products, location, land use in the immediate neighborhood, and many other factors. To demonstrate conformance with this requirement, organizations must have a system for communicating with external parties, and a process for considering their views. An intuitive conclusion that there are no identifiable interested parties is not sufficient. The views of interested parties must be considered, but do not need to be automatically addressed by targets and objectives. The views of interested parties may be balanced against technological options, and financial and, business requirements of the organization, a flexibility that is not available when considering legal and other requirements.

Ensure consistency with the environmental policy, including the commitment to pollution prevention

The first part of this requirement reinforces the principle that objectives and targets, and by implication the whole EMS must arise out of the environmental policy. Conformance with this requirement is ensured automatically, when the same set of significant environmental aspects is used in formulating the policy and establishing objectives. At a minimum, objectives must be set in areas where the goals stated in the environmental policy are not attained. Objectives and targets are the mechanism by which the environmental policy is fulfilled. A failure to set objectives in those areas will result in a major nonconformance. Reference (g), also requires the organization to commit to prevention of pollution, thereby creating the expectation that at least some objectives and targets will be related to this commitment. A practical way to ensure conformance with this portion of the requirement is to identify pollution-related issues at the stage of selecting significant environmental aspects.

Environmental Management Programs

Establish management programs that achieve environmental objectives and targets

Development of programs to achieve environmental objectives and targets is the last step on the path of defining and planning an EMS. Environmental management programs will provide the means for achieving the objectives, and fulfilling the environmental policy.

Environmental programs can be either general system-level, infrastructure-type programs, such as training, document control, or monitoring and measurement, or more detailed objective-specific programs. Reference (g), requires some types of system-level programs in any case, irrespective of the actual stated objectives. They are the backbone of the EMS. Objective-specific programs are more project oriented, they provide specific methods, means, and organization for achieving a particular objective.

When considering programs for achieving an objective, an organization should identify the relevant system-level programs, and determine whether, in them, those programs are sufficient to achieve the objective. System-level programs are sufficient when monitoring, training, and implementation of efficient management practices alone can ensure achievement of an objective. Objective-specific programs must be developed, when special arrangements are required for achieving objectives.

In theory, every established objective and target must be followed up with a program to achieve it. It does not mean that there must always be an independent and dedicated program for every objective, it may be appropriate to use the same program for achieving several related objectives. There will also be situations where one objective will require several programs. In a multisite organization, for example, each location may have its own independent program to achieve the same Departmental objective, such as recycling, to account for market differences.

Reference (g), does not require a procedure for establishing and maintaining the environmental programs. Such a procedure may not be needed in a small organization with a limited number of objectives, where only one person is responsible for establishing the programs. However, in a larger and more complex organization it would certainly be useful to have some written guidelines, and an approval and authorization system to ensure a coordinated approach, and control over allocation of resources.

Specify the means and timeframe

Reference (g), requires that management programs for achieving targets and objectives be defined in terms of means and timeframe. The requirement for a timeframe can be easily implemented by stipulating a due date for achieving every established target. Objectives do not need to have due dates as long as they are further developed into detailed targets. In most cases, it will be more natural to specify due dates together with targets. For example, instead of stating “Reduce water intensity by 20% and defining the due date in the project specification, a better way is to simply state “Reduce water intensity by 20% by December 2014, from the 2007 baseline”.

The extent to which the means for achieving objectives must be defined will depend on the nature and complexity of the management program for achieving the objective. Larger complex programs may have to be defined in terms of specifications, budgets, schedules, personnel allocations, special equipment requirements, etc. At the other extreme, for a program as simple as posting a sign, the means may be defined as an item in a checklist, or meeting minutes. The format and scope for defining the means will vary, but for each management program the organization must clearly identify the methods and resources.

Many higher-tiered organizational-wide programs will require different means in different operations and areas. For example, if the target is to reduce hazardous waste by 20% in 3 years from a baseline, the program should define how much of a reduction will be achieved through waste minimization, process changes, or recycling, and should prescribe specific means for each.

Some categories of objectives and targets can be achieved simply by implementing the EMS as required by the ISO 14001 standard itself. The kinds of objectives in this category are general improvements that will automatically result from better training, instructions, communication, performance monitoring, and other general systemic operational controls. For these kinds of objectives, the programs and means for achieving them may be simply defined as implementation of relevant elements of the EMS.

Although the standard does not explicitly require this, the means and timeframes for achieving targets should be documented, and are best documented together with the targets.

Update and amend programs as required to account for new developments

This requirement is a reminder that the entire EMS, including the environmental policy, objectives, targets, and programs, must be continuously updated to account for new developments and changing circumstances. Reminders to keep the system up to date are included in several sections of reference (g), but the primary requirements for reviewing and updating the system are stated in reference (g), Element 4.6, *Management Review*. The kinds of situations contemplated in this requirement, include the addition of new activities or services, significant material specification changes (i.e., metal to plastic; introduction of new technologies or processes; addition of new facilities, etc.). There is normally no need for a procedure explaining how programs are updated to account for new developments and circumstances. It is sufficient to document in the environmental operations manual a general commitment to keeping the system up to date. Instructions for reviewing, and updating the entire EMS, are best documented in procedures dealing with management reviews.

Implementation and Operations

Introduction

Reference (g) Element 4.4 contains requirements for organizational and operational structures of the EMS. The role of this element is to provide the infrastructure, and some basic programs for the system, including operational controls. Specifically, this element contains requirements for defining the organization responsible for the EMS; for providing training programs; for establishing communication systems; for documenting the EMS, and for controlling documents; for controlling relevant operations and activities; and for maintaining emergency preparedness. In addition to providing the infrastructure for the EMS, some programs required in this element may also be used for achieving targets and objectives.

Structure and Responsibility

Define, document and communicate authorities, roles and responsibilities

This element of reference (g) does not state any specific requirements with regard to the organizational structure, other than it must be documented and communicated.

While reference (g) does not suggest any particular structure for assigning responsibilities and authorities, it contains some specific requirements with regard to top (executive) management. It requires that the top management be actively engaged with the system. At a minimum, top management must be responsible for formulating the environmental policy; for appointing a management representative (the EMS champion), at the Departmental level this is the SSO; for providing adequate resources to establish, implement and operate the system; and for periodically reviewing the suitability and effectiveness of the system. These mandated responsibilities can be reflected in the organizational charts, organizational declarations of functional responsibilities, and standard operating procedures (SOPs). Responsibilities and authorities are usually defined in the organization's organizational charts, in orders defining departmental responsibilities, and sometimes in job descriptions. In addition, operational procedures usually define responsibilities for carrying out and supervising activities described in the procedures. Using these three types of documents, it is possible to completely define and document all authorities and responsibilities pertaining to the EMS. Departmental authorities and responsibilities are also best documented in the EMS operations manual. They define for each department, responsibilities related to the EMS. Some departmental, and/or functional

responsibilities may also be specified in job descriptions. Authorities and responsibilities related to specific activities are best documented in procedures for dealing with these activities. For example, a procedure dealing with management reviews should define who is responsible for scheduling and chairing the reviews, who should participate, and what is the authority of the review panel.

Provide adequate resources for implementation and operation of the system

Management is obligated to provide two kinds of resources: for developing, implementing, and maintaining the EMS, mainly human resources and specialized skills; and for controlling and/or improving the environmental performance, mainly technology and equipment resources. The need for resources for the EMS depends on the size and complexity of the organization, and the nature of its operations. The nature and magnitude of resources to improve environmental performance is dictated by the goals set in the environmental policy, and its objectives and targets. Although reference (g) does not specify any performance criteria, it requires that the organization commit itself, and allocate adequate resources, to reach its objectives and targets, and thus fulfill its environmental policy.

To satisfy this requirement, documentation can be provided by stating in the EMS Operations Manual that management is responsible for providing adequate resources for operating the EMS, and for improving environmental performance in line with the environmental policy.

Appoint a management representative responsible for conformance with ISO 14001 and for reporting on the performance of the system

The Senior Executive responsible for environmental stewardship is a natural choice for the appointment as the management representative. But anyone in management can be appointed, irrespective of his/her other responsibilities. The management representative does not necessarily need to have a direct day to day role in the operation of the EMS. His/her role is to assume the authority and responsibility for conformance and performance of the EMS. At a minimum the management representative must be responsible for ensuring the EMS is established, implemented, and maintained to conform to the requirements of reference (g); and for reporting the performance of the EMS to top management.

The appointment of the management representative must be formally documented. It is usually a statement in the EMS Operational Manual. The appointment should state who (by function rather than name) and define what the authority and responsibility of the management representative is.

Training, Awareness, and Competency

Identify training needs

Reference (g), requires training be provided in the following three categories: general awareness training about the EMS; training in emergency preparedness and response procedures; and specific technical and skill training for personnel whose work may create a significant environmental impact. The first category of training is administered by human resources, in the Department's case, through the Commerce Learning Center. The second category of training is administered in the Herbert C. Hoover Building (HCHB) through the Office of Security; in other organizations within the Department, it may be operated by the security organization, the facility management organization, or your emergency preparedness organization. Technical training is often provided internally by departments involved with handling, storage, or processing of hazardous substances, or other activities that may seriously impact the environment.

Reference (g), requires that organizations identify their training needs. Some basic training needs are suggested by reference (g), notably the three categories of training just discussed. There will also be training needs arising directly from specific environmental programs developed for achieving the environmental policy and its objectives. Additional training needs may be identified in response to system performance failures (nonconformances or incidences), or be determined from periodical evaluations of personnel qualifications and performance. Training programs should be periodically reviewed, during management reviews, for example, and be modified as required to account for new activities, equipment or regulations.

Although the standard does not explicitly require a procedure for identifying training needs and administering the training system, there should be something in the EMS documentation explaining what kinds of training programs are provided; who is responsible for planning and administering the training programs; and how the suitability and effectiveness of the training provided is reviewed. Whether required or not, a procedure, contained in the EMS Operations Manual, is the most effective medium for documenting the training system.

Make employees aware and knowledgeable of policy, significant impacts, and the system itself

Most of reference (g), Element 4.4.2 is dedicated to requirements for employee awareness training. At a minimum, employees must be aware of: the importance of the environmental policy, procedures, and the EMS; actual and potential environmental impacts of their work, and the benefits of improved personal performance and their

roles in achieving the environmental policy, and maintaining the EMS; and the potential consequences of deviating from the procedures. The standard requires that there be a procedure (i.e. a system) for developing awareness in the above-listed three areas. A program for developing awareness may comprise training, distributing pamphlets, displaying posters and banners, posting messages on computer networks, playing video presentations, etc. There also may be programs for recognizing exceptional performance and achievements, such as the Departmental Energy and Environmental Awards.

When implementing a new EMS, it is most effective to develop employee awareness through a specialized training program that focuses exclusively on environmental issues. In mature EMSs, awareness training can be combined with other training programs, such as including EMS orientation in the general orientation training for newly hired employees, and combining training about specific environmental impacts, and consequences of deviating from procedures can be combined with departmental skill training.

Train all employees in emergency preparedness and response procedures

Programs for training emergency procedures may include several types: general orientation about where to find site plans, emergency procedures, first aid equipment, etc., and how to recognize various types of alarms, and how to respond; training on how to manage and control particular emergency situations; and emergency drills. Everyone should receive general orientation training and participate in drills, and selected employees should be trained specifically in emergency functions assigned to them, for example organizing evacuation, contacting authorities, operating emergency equipment, setting up temporary containment, etc. When appropriate, environmental emergency training may be integrated with fire, earthquake, and other disaster response training and drills.

There should be procedures for training personnel in emergency response. The procedure should define the scope and nature of such training; instruct how to document the training content and how to establish and maintain training records. Procedures also need to be developed assigning responsibility for these activities.

Train and/or ensure competency of personnel whose duties may create a significant environmental impact

This requirement relates to job-specific training of employees involved in environmentally sensitive operations and activities. For example those responsible for receiving, storing, handling, and disposing of chemicals and hazardous substances, should receive specialized training. Organizations must identify all operations and

activities that may create a significant environmental impact, and define the level of competence required for specific functions and positions related to those operations. There must also be records of appropriate education, experience and training to demonstrate these competence requirements. Job descriptions and IDPs are a very effective technique to implement and document this requirement.

Communication

Establish system controls for internal communications

To function properly, an EMS must include a process for communicating throughout the organization, the policies, objectives and procedures of the system, and for reporting on the effectiveness of the EMS, and the environmental performance. The communication needs to be two-way. Management should communicate to the organization: information and instructions about the significant environmental aspects; the environmental policy; objectives and targets; the EMS procedures, and the consequences of deviating from them; the methods and techniques to be used in operations and emergency situations; and the commitment of top management to the EMS.

The organization should communicate back to management information and data concerning the environmental performance; the progress in achieving objectives and targets; the effectiveness of the EMS; and any specific concerns related to the environment. The communication may be in any written form. If verbal input is received, then it should be memorialized in a memorandum to the files.

This requirement does not introduce any new obligations. It merely reinforces other communication-related requirements stated elsewhere in the standard. A properly designed and implemented EMS will itself comply with this requirement, without any additional actions. Reference (g) explicitly requires that there be procedures for internal communications. This does not mean that there must be separate and dedicated procedures. Internal communication procedures are usually incorporated into other procedures dealing with specific activities that include communication, such as management reviews. Internal communication is a distributed requirement and as such it is best described in the EMS Operation Manual.

Establish system control for external communications and external communication of significant environmental impacts

This requirement applies to communication received from external parties pertaining to the environment, or the EMS. The external parties may be governmental agencies, authorities, public organizations, registrars of ISO 14001 EMS organizations, or

individuals concerned with protection of the environment, community groups, neighbors, etc. The requirement calls for a system for receiving, documenting, and responding to such communication. The office or organizational function responsible for handling external communication should be clearly defined. All external communication should be logged and forwarded to those responsible for the response. As with internal communication, if the inquiry is verbal it should be memorialized in a memorandum for the files.

There also should be a link between the system for processing external communication and the system for preventative and corrective actions and the system for establishing and reviewing objectives and targets. Reference (g) explicitly requires an operational procedure for handling and processing external communication regarding the environment and the EMS. Again the most reliable and logical place is in the EMS Operations Manual.

Environmental Management System Documentation

Reference (g) requires that the core elements of the EMS and their interrelationships be documented. At a minimum, the documentation should consider the four elements corresponding to the major sectional heading in the standard; Planning, Implementation and Operations, Checking and Corrective Actions, and Management Review. The general description is usually best documented in a section of the EMS Operations Manual. The role of the manual is to state the environmental policy; to outline the structure and to summarize the major procedures of the system; to define the principle responsibilities and authorities; and to reference other documents supporting the system.

Document Control

Define the document control system and the types of controlled documents

The scope of application and the structure of the document control system should be well explained, so that it is clear what types of documents must be controlled, and who is responsible for controlling them. The scope of application as defined in reference (g), Element 4.4.5, includes all documents required to define, implement, and maintain (operate) the EMS, whether they are explicitly named in the standard or not. The control requirements apply to documents and data stored in electronic format as well.

Approve documents for use and periodically review them, and revise as necessary

Every controlled document must bear a signature, or other identification of the authorized personnel who reviewed and approved the document for use. For each type

of document, the authority to approve and issue documents must be defined. Document reviews, revisions, and corrections must likewise be approved. Documents must be reviewed periodically. In practice, this means that documents are never valid indefinitely without periodic review.

Specify retention periods for controlled documents

Reference (g) explicitly requires that controlled documents be retained for a specified period of time. The requirement not only covers active documents but also historical and obsolete documents as well. Not all historical documents must be retained and retention periods may be as short or as long as dictated by actual need or legal and other considerations. For example, records relating to the management and disposal of hazardous waste are specified by the Resource Conservation and Recovery Act. In no event should a document be retained for a period of time less than the time period specified in the Department's records retention schedules, or other applicable authority.

Identify documents with their revision level, and maintain a master list with current revision status of documents

Documents should be identified on their face with their revision level, the superseding document level, the effective date of the revision, and the required review date. An alternate method is to revision number the document and maintain a master list of issued documents.

Ensure that appropriate documents are available

There are two issues related to this requirement: the first is the identification of the locations where specific documents should be available, and the other is effective distribution of the documents. A web-based system, like the one utilized by the DOC Departmental-level EMS, is an effective method, as long as a footnote is utilized declaring that the only controlled document is the one placed on the web page and all other copies of the web-based document are uncontrolled and for reference only.

Remove obsolete documents from points of use

The procedure outlined above is equally effective in controlling obsolete documents as long as users are diligent in referring to the web-based versions, and minimizing the use of downloaded documents.

When historical documents need to be retained, they should be marked OBSOLETE, FOR REFERENCE ONLY and kept separate from current documents to preclude unintended use.

Review and approve changes in documents

Review and approval of revisions and changes involving a reissue of a document at a higher revision level should follow the same procedure that applies to issuing the initial document. Corrections in documents (red-lined versions) must also be reviewed and approved. Anything crossed out, added or changed in a controlled document must be dated and initialed by an authorized person. Handwritten notes and comments on controlled documents should be avoided, even though they do not modify the original content of a document, they add new information that is not authorized, and will be lost when the document is reissued.

Operational Control***Identify and specify operations and activities that are associated with significant environmental aspects***

Operations and activities associated with significant environmental aspects are usually identified at the stage of considering environmental aspects and rating their significance. Relevant activities are also identified and reviewed when establishing environmental objectives and targets, and many of them are planned and documented in conjunction with the development of management programs for achieving the objectives. Thus, most of the documentation and implementation work associated with this requirement is carried out at the stage of planning the EMS.

Establish operational criteria, procedures, and instructions to ensure conformance with the environmental policy, objectives and targets

While there is some contention among auditors, the most rational explanation is that this requirement only applies to the operational requirements that pertain to significant environmental aspects. The standard does not suggest any criteria for determining whether the absence of a procedure could lead to a deviation from the environmental policy, but where there is a history of actual problems, procedures are required.

Communicate environmental procedures and requirements to suppliers of products and services having significant environmental aspects

Through this requirement, reference (g) attempts to include purchasing activities into the scope of the EMS. It is at best a weak and ambiguous requirement that is difficult to audit, and even harder to enforce. This is true because, reference (g), Element 4.3.1, Environmental Aspects, requires that, in addition to their own direct aspects, organizations identify and evaluate those environmental aspects over which they can be

expected to have an influence. The weakness of this requirement is evidenced by the fact that while every organization should be expected to identify some aspects in this category, there will be many legitimate cases where none of them will be classified as significant, due to the fact that there is little to no control over them. There is no intent in this requirement to extend an organization's EMS to its suppliers. An organization implementing an EMS does not have to request its suppliers improve their environmental performance, or even comply with applicable environmental laws. The intent of this requirement is to ensure that the services and products used by an organization do not compromise its environmental policy.

Emergency Preparedness and Response

Identify potential for accidents and emergency situations

In responding to this requirement organizations should start by inventorying all hazardous substances, including hazardous waste, they use, store, transport, or dispose of, including the identification of quantities and locations. The next step is to determine potential situations where these substances could be accidentally released both by location and by process (i.e. during transportation). The last step is an evaluation of the potential impacts of an accident on the surrounding areas both on and off the facility. If a facility is subjected to, and complies with legal and regulatory requirements with regard to emergency planning (i.e. Emergency Planning and Community Right-to-Know Act), it probably also satisfies all requirements mandated by reference (g), Element (4.4.7).

Establish emergency preparedness and response procedures

Having identified and evaluated potential accidents and emergency situations, organizations must develop appropriate procedures to deal with these emergencies. The scope and extent of emergency procedures will depend on the nature of the identified risks and possibly, legal, and regulatory requirements. Emergency procedures should be periodically tested where practicable. In this context, practicable means possible rather than convenient. Where appropriate, the testing of these emergency procedures may be integrated with the testing of fire, earthquake, and other disaster response procedures.

Checking and Corrective Action

Reference (g), Element 4.5 defines those elements of the EMS for verifying and recording the environmental effectiveness of the EMS. Specifically this element deals

with systems for measurement and monitoring processes, activities, and operations; for evaluating regulatory compliance; for identifying and dealing with nonconformances; for implementing corrective and preventative actions; for establishing and maintaining environmental records; and for conducting internal audits of the EMS. This is the third link in the Plan-Do-Check-Act cycle.

Monitoring and Measurement

Monitor and measure key characteristics of those operations and activities that are related to significant aspects

The purpose of this requirement is to ensure that there is a system for tracking environmental performance in the relevant operations and activities, especially in those operations or activities that have been identified as significant aspects. For those activities that have been translated into objectives, and where the objectives are further developed into targets, it is sufficient to establish monitoring and measuring programs for the targets. However when a significant aspect is not developed into an objective and target, monitoring and measuring programs must be developed for the significant aspect directly. A significant aspect can not be left without any monitoring in any circumstance.

Periodically evaluate compliance with environmental laws and regulations

Self-evaluation of compliance with laws and regulations has a significant legal dimension, and implementation of this portion of the EMS should be done in consultation with the Office of General Counsel. The system for evaluating compliance should define the characteristics or regulation to be evaluated; parameters to be measured, measuring or monitoring method, measuring equipment to be used, frequency and sampling method; reporting format; and assignment of the function.

Calibrate monitoring and measuring equipment and maintain calibration records

The purpose of this requirement is to ensure that the instruments and equipment used for taking measurement are suitable and accurate. If an organization already operates a calibration control system for instruments and equipment used in the inspection of products, there is no reason to establish a new system used in the EMS, it is sufficient to merely expand the scope of the system in place to cover the instruments used for

measuring environmental characteristics. At a minimum the measuring equipment must be uniquely identified, and be periodically checked and calibrated using approved calibration standards. The calibration should be recorded in a calibration log.

Nonconformance and Corrective and Preventative Actions

Identify nonconformances and take action to correct and mitigate impacts

Nonconformances are operations, activities, processes, products, and incidents that are not in conformance with the specified requirements. The requirements may be defined in policies, objectives, targets, procedures, instructions, legislation, regulations, contracts, or in reference (g). Several elements of the EMS are dedicated to identifying nonconformances. Examples include internal auditing and environmental performance monitoring. In addition, nonconformances may be identified through external audits, regulators, customers, interested parties, or by anyone outside or within the organization. The system for handling nonconformances should provide the means for documenting the nonconforming condition, for communicating the information to those responsible for mitigating the impacts, for investigating the root cause of the nonconformance, and for initiating corrective action to prevent a reoccurrence. Reference (g) requires that there be a procedure for handling nonconformances, and although there is no explicit requirement that the procedure be documented, it is almost impossible to effectively communicate this requirement unless it is in writing.

Implement corrective actions to prevent reoccurrence of nonconformances and potential nonconformances

The system for initiating and implementing corrective actions is part and parcel of the system for handling nonconformances. Reference (g) treats them as separate and distinct actions, but in most EMSs they are invariably joined at the hip. The corrective action portion of the system is responsible for dealing with the underlying root cause. While reference (g), Element 4.5.3 states that "...investigating nonconformity (ies), determining their cause(s) and taking actions in order to avoid their recurrence..." in reality, the root cause must be determined so as to fix the actual problem and thereby prevent reoccurrences of the same or similar nonconformance. Not all nonconformances have to be automatically followed up with corrective actions, but all should be evaluated to determine whether a corrective action should be initiated or not. The decisions not to initiate a corrective action must be recorded to show it was deliberate action and not an oversight. The corrective action system should be flexible enough to deal with very diverse types of actions, ranging from a minor correction of a procedure, to a long-term project that may involve design changes or introduction of

new technology or equipment. The scope of the corrective action should be appropriate to the nature of the problem, and the actual and potential environmental impacts.

Initiate and implement preventative action to prevent occurrence of potential nonconformances

There is often some confusion about the difference between corrective and preventative actions. It is incorrect to think that a preventative action is part of a corrective action. According to reference (g), a preventative action is taken to prevent occurrence of a potential nonconformance, and is distinct from a corrective action that is taken to address an actual nonconformance that has already occurred. In practice, corrective actions are implemented following an actual incident, for instance a spill. A preventive action is implemented before anything has yet happened, but there is a pattern of decreasing control or capability that needs to be addressed, for example a consistent finding of liquid-containing drums with the bungs left open.

Records

Maintain records necessary to demonstrate conformance

The first paragraph of reference (g), Element 4.5.4, explicitly requires “...*establish and maintain records as necessary to demonstrate conformity to the requirements of its environmental management system and of this International Standard, and the results achieved...*” This requirement allows auditors to ask for written records, reports, minutes of meetings, etc., documenting results of such diverse activities as selection of significant environmental aspects, training, emergency drills, compliance evaluation audits, corrective actions, management reviews, etc. This requirement creates an obligation for the organization to provide written evidence of conformance with any and all requirements of reference (g).

Organize and protect environmental records

Reference (g), Element 4.5.4 also states “...*The organization shall establish, implement and maintain procedure(s) for the identification, storage, protection, retrieval, retention, and disposal of records. Records shall remain legible, identifiable and traceable.*” All this really means is that records must be retrievable. Any record management system is acceptable as long as it works. When a record has to be retrieved, it should be easily locatable, be legible, and in good condition.

Determine and document record retention times

Reference (g) does not specify any particular retention times for records, but it requires that organizations themselves decide how long they will keep their environmental records, and that they document that decision. Retention times should be determined individually from each type of record, based on commonsense considerations of their useful life. Records pertaining to periodical assessments, reviews, and certifications, such as internal audit reports, management review records, or calibration logs, are usually kept for three cycles. Retention time for training records can be established on the basis of employment status. The retention time for some records will be dictated by legal, regulatory or contractual requirements. In no event should a document be retained for a period of time less than the time period specified in the Department's records retention schedules, or other applicable authority.

Environmental Management System Audits

Establish scope and frequency for audits

The audits required by reference (g) may be conducted by personnel from within the organization or by external persons (consultants) contracted by the organization to conduct internal audits. All activities comprising the EMS should be audited at least once per year. Systems under implementation, and for the first year or two of operation, should be audited more frequently. The internal audit can be carried out all at once, as certification audits are, or be distributed throughout the whole auditing cycle.

Define methodology and requirements for conducting audits

Reference (g), Element 4.5.5 does not contain any specific requirements for conducting internal audits. The standard only states the objectives for the audit and requires that there be a comprehensive procedure defining scope, frequency, methodology, responsibilities, and requirements for conducting internal audits and reporting the results. It does not contain any specific criteria with regard to auditor qualifications, audit methodology, or reporting.

In practice, certification auditors will expect that the internal audit system meet certain generally acceptable requirements, even though these are not spelled out in reference (g). They include: defined auditor qualification requirements, consideration of auditor independence, written instructions for preparing and conducting audits, defined requirements for reporting audit results, and provisions for follow-up audits to verify that corrective actions have been implemented and that they are effective. The qualifications of internal auditors should be evidenced by training records. Whenever possible, auditors should be independent from those responsible for the audited

organization.

Implement corrective actions to deal with nonconformances identified by audits

Every nonconformance identified during an internal or external audit should automatically have a corrective action opened on it. While in other circumstances the need for a corrective action can be evaluated and decided upon, there is no such latitude in the case of audit findings of nonconformances, and it can be argued, even in the case of Opportunities for Improvements (OFI).

Management Review

This element defines the requirement for the last step in the EMS cycle, Act. This last step is a top-level review to assess whether the system is suitable, adequate and effective, and to identify opportunities from improvement. The management review should be concluded with specific recommendations for changes to address new developments, and to improve the EMS. Management reviews thus have the role of launching the EMS into the next cycle of continual improvement.

Periodically conduct management reviews to ensure continuing suitability, adequacy, and effectiveness

Management reviews should be conducted by executive management that have the authority to formulate policies and allocate resources for the EMS. While operational issues and data may be discussed to provide baseline information about the performance of the system, the main purpose of the management review is a global assessment of the continuing stability, suitability, and adequacy of the environmental policy and objectives, and the effectiveness of the EMS itself.

Management reviews must be conducted regularly. Quarterly or half-year reviews are recommended for new systems under implementation and maturation. Mature systems can be reviewed on an annual basis. Additionally there should also be allowances for calling extraordinary review meetings in response to sudden important developments, or emergency situations. If possible, management reviews should be synchronized with the cycle and timing of internal audits, so that the audit report is available for review.

Provide management with required information

Reference (g) explicitly requires that executive management be provided with the information necessary to conduct a meaningful review. At a minimum, this includes: reports on the progress toward achieving the environmental policy, objectives and targets, including those related to the prevention of pollution; the status of compliance with environmental laws, regulations, and executive orders; environmental performance in areas related to significant environmental aspects; the results of internal audits of the EMS; the achievement and status of continual improvement projects; and information about any developments and changes in products, processes, operations, laws, regulations, executive orders, views of interested parties, external communication, etc., that may create new environmental aspects, or impact the significance ratings of previously identified aspects. In addition, although not required by the standard, executive management could benefit from such information as the cost of operating the EMS, savings attributable to the system, benchmarking information, etc.

Ensure that the management review considers the possible need for changes to policy, objectives, and other elements of the system

The principle role of management reviews is to ensure continuing suitability and effectiveness of the EMS, and to launch the system into the next cycle of continual improvement. This philosophy is at the core of the EMS model on which reference (g) is based. There is an implied expectation that management reviews should be concluded with recommendations for changes to the policy, objectives, or other elements of the EMS. Especially in the implementation and maturation phase, failure of a management review to recommend specific changes implies a general lack of commitment to the EMS, or a lack of understanding of the principles on which an EMS is based. Even in mature systems changing circumstances and the commitment to continual improvement, should compel executive management to adjust environmental objectives, and set new goals for further improvement of the system.

Ensure a review of the commitment to continual improvement

Reference (g) requirements for continual improvement are weak, confusing, and even contradictory. There are two problems: first is that the requirement for continual improvement is only for the EMS itself, and not environmental performance; and the other is that there are no planning, operational and checking requirements related to continual improvement.

The failure of the standard to define any specific requirement with regard to the system for managing continual improvement should not be interpreted as a lack of requirement for demonstrating continual improvement. Once continual improvement is stated in the environmental, policy, which is required by the standard, the organization must be able to demonstrate that it has implemented the commitment.

Document the review

Reference (g) explicitly requires that management reviews be documented. The nature of the documentation and records will depend on the format of the review itself. The documents and records should identify the date, place, attendance, and agenda of the review, and should provide a brief summary of the review and its conclusions and recommendations.

APPENDIX A: ACRONYM GUIDE

CEQ	Council on Environmental Quality
CLC	Commerce Learning Center
CPA	Corrective or Preventive Action
DAO	Department Administrative Order
DOC	U.S. Department of Commerce
DOE	U.S. Department of Energy
EISA	Energy Independence and Security Act
EMP	Environmental Management Program
EMS	Environmental Management System
FAST	Federal Automotive Statistical Tool
FEMP	Federal Energy Management Program
FY	Fiscal year
E&EMM	Energy and Environmental Management Manual
EO	Executive Order
EPCRA	Emergency Planning and Community Right-to-Know Act
GHG	Greenhouse gas
ISO	International Organization for Standardization
NIST	National Institutes for Standards and Technology
NOAA	National Oceanic and Atmospheric Administration
OAM	Office of Acquisition Management
OAS	Office of Administrative Services
OCIO	Office of the Chief Information Officer
OCS	Office of Commerce Services
OFEE	Office of the Federal Environmental Executive
OMB	Office of Management and Budget
OSEEP	Office of Sustainable Energy and Environmental Programs
POC	Point of contact
SSO	Senior Sustainability Officer
SSPP	Strategic Sustainability Performance Plan

Appendix B: Chronology Table

Due Date (FY)	Action	Responsible
First quarter	Send annual report data call to bureaus, key OS staff offices	SSO
	Annual report data call due to OSEEP	Bureaus, OAM, OCIO, OCS
	DOC Fleet Manager reports vehicle fuel use data from FAST system to OSEEP	OCS
	EMS internal audit	DOC EMS Coordinator
	EMS management review	DOC EMS Coordinator
	Executive Steering Committee bimonthly meeting: <ul style="list-style-type: none"> • Review annual report/scorecard data • Bureaus present five-year implementation plans for SSPP goals 	DOC Senior Sustainability Officer
Second quarter	EMS report due to OFEE via FedCenter.gov reporting portal	DOC and all bureaus with fully implemented facility or organizational EMS
	Scorecard due to OMB	DOC Senior Sustainability Officer
	DOC GHG Annual Inventory	SSO
	Executive Steering Committee bimonthly meeting: <ul style="list-style-type: none"> • OSEEP briefs Department internal audit & management review results 	DOC Senior Sustainability Officer
	Validate environmental aspects and recommend objectives and targets	DOC EMS Workgroup
	Send Strategic Sustainability Performance Plan data call to bureaus, OAM, OCIO, and OCS	SSO
Third quarter	Strategic Sustainability Performance Plan and EISA data calls due to OSEEP	Bureaus, OAM, OCIO, and OCS
	Executive Steering Committee bimonthly meeting: <ul style="list-style-type: none"> • Bureaus present 5-year Plan 	SSO

	implementation progress	
	Executive Steering Committee bimonthly meeting: <ul style="list-style-type: none"> • Review and validate Department EMS policy 	
	DOC Strategic Sustainability Performance Plan update due to OMB	SSO
Fourth quarter	Scorecard update due to OMB	SSO
	Executive Steering Committee bimonthly meeting <ul style="list-style-type: none"> • Brief EMS objectives & targets 	SSO