U.S. Department of Energy	**Subject:** Performance-Based Inspection of Environmental Management Systems: Inspection Criteria, Approach, and Lines of Inquiry	HS: HSS CRAD 45-38 Rev: 1 Eff. Date: 11 /29/2011
Office of Enforcement and Oversight	Acting Director, Office of Safety and Emergency Management Evaluations Date: 11/29/11	
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1.0 PURPOSE

Within the Office of Enforcement and Oversight, the Office of Safety and Emergency Management (S&EM) Evaluations' mission is to assess the effectiveness of those environment, safety, and health systems and practices used by field organizations in implementing Integrated Safety Management and to provide clear, concise, and independent evaluations of performance in protecting our workers, the public, and the environment from the hazards associated with Department of Energy (DOE) activities and sites. A key to success is the rigor and comprehensiveness of our process; and as with any process, we continually strive to improve and provide additional value and insight to field operations. Integral to this is our commitment to enhance our program. Therefore, we have revised our Inspection Criteria, Approach, and Lines of Inquiry for internal use to evaluate implementation of an effective Environmental Management System (EMS), including requirements of Executive Orders (EOs) 13423 *Strengthening Federal Environmental, Energy, and Transportation Management* and 13514 *Federal Leadership in Environmental, Energy and Economic Performance,* using International Organization for Standardization (ISO) 14001:2004 (E) elements as set forth in DOE Order 436.1, *Departmental Sustainability.*

We are also making them available for use by DOE line and contractor assessment personnel in developing and implementing effective DOE oversight, and contractor self-assessment and

corrective action processes. These lines of inquiry can be tailored for those sites which have chosen to register their environmental management system to ISO 14001, or for use in determining conformance with ISO 14001. The current revision of this Criteria and Review Approach Document (CRAD) is made available as a responsibility of the Office of Health, Safety and Security to provide technical assistance in the implementation and maintenance of sites' EMS per DOE Order 436.1 at http://www.hss.energy.gov/IndepOversight/ESHE/docs.html

The focus of this CRAD is on reviewing the environmental management system elements and significant environmental aspects to determine whether DOE sites are: 1) implementing sound environmental stewardship practices and, through these practices, meet or exceed compliance with applicable environmental, public health, and resource protection laws and requirements; 2) using an EMS as a management tool to identify and control the environmental impacts of site activities, products or services, to improve environmental performance continually, and to implement a systematic approach to setting environmental objectives and targets, to achieving these and to demonstrating that they have been achieved; and 3) ensuring that EMSs covering all site activities are certified to or conform with the International Organization for Standardization's (ISO) Standard 14001:2004 (E). Where deficiencies are identified, systems, programs, and practices are reviewed to identify if systemic weaknesses are present.

2.0 APPLICABILITY

The following Inspection Criteria document is approved for use by the Office of Sustainability Support and the Office of Safety and Emergency Management Evaluations.

3.0 FEEDBACK

Comments and suggestions for improvements on these Inspection Criteria, Approach, and Lines of Inquiry can be directed to the Acting Director of the Office of Safety and Emergency Management Evaluations on (301) 903-5392 or via the "Contact us" link on the WEB page cited above.

Performance-Based Inspection of Environmental Management System Elements
Inspection Criteria, Approach, and Lines of Inquiry

The following provides an overview of the typical activities that will be performed to collect information to evaluate the effectiveness of the environmental management system. Several terms used throughout this document are defined (last three terms based on ISO 14001:2004(E) Section 3, *Terms and Definitions*) as follows:

- The term "activities" encompasses various types of projects including construction, restoration, maintenance, operations, research and development (R&D), and other work activities that could expose the workers, public, or environment to hazards.
- The term "environment" refers to the organization's natural and human surroundings. An organization's environment extends from within the organization itself to the surrounding community and includes air, water, land, flora, fauna, as well as human beings.
- The term "environmental aspect" is a feature or characteristic of an activity, product, or service that affects or can affect the environment. A significant environmental aspect is an activity, product, or service that has or could have a significant environmental impact.
- The term "environmental impact" is a change to the environment, either positive or negative, resulting from an environmental aspect, either directly or indirectly.

EMS General Requirements and Policy

General Program Requirements

Inspection Criterion: DOE sites shall establish and maintain an Environmental Management System (EMS) certified to or conforming to the ISO 14001 per DOE Order 436.1, Section 4. *REQUIREMENTS*, c. (3).

Inspection Activity: Through interviews and document reviews, evaluate the extent to which the organization has defined the scope of its EMS, documented, and implemented the management system.

Inspection Lines of Inquiry:

- Is the site operating contractor required by a contract clause to ensure proper implementation and execution of an EMS for the site in accordance with the Federal Acquisition Regulation: Sustainable Acquisition (48 CFR 23.903 Contract Clause)?
- Has the EMS been accredited by a third party registrar per provisions of the ISO 14001 standard?
- If not certified to ISO 14001, has the EMS been determined (within the past three years) to conform to the International Standard, following an audit by a qualified party outside the control or scope of the EMS?
- Has the scope of the EMS been defined and documented (noting exclusions)?
- Have the Environmental Management and Safety Management Systems been integrated, as appropriate, to enhance efficiency and avoid duplication?

- Does the scope cover products and services (including R&D)?
- What site activities are not included within the scope?
- Who does it apply to? In addition to employees, are students, visiting scientists, subcontractors, etc., included in the scope?
- How is the EMS being maintained to meet requirements?

Environmental Policy

Inspection Criteria: Senior management shall, in conformance with ISO 14001 requirements, define the organization's environmental policy and ensure that, within the defined scope of the EMS, this policy provides and communicates the organization's commitment for continual improvement per ISO 14001:2004(E) Section 4.2, *Environmental Policy*.

Inspection Activity: Review the policy and interview senior management and select persons working for and on behalf of the organization.

Inspection Lines of Inquiry:

- Is the policy defined and is it appropriate to the type, size, and environmental impacts of the activities?
- Is the policy documented, implemented, and maintained?
- Has it been endorsed by senior management?
- Is the policy aligned with the scope of the EMS?
- Does the policy include a commitment to continual improvement and is there evidence of such in the organization's operations?
- Does the policy include a commitment to pollution prevention, sustainable acquisition, and is there evidence of such in the organization's operations?
- Does the policy include a commitment to compliance to legal requirements, and is there evidence indicating intent to comply?
- Does the organization subscribe to other requirements such as those required by EO 13514, and are they covered also?
- Does the policy include a mechanism for setting and reviewing environmental objectives and targets including those for sustainability per EO 13514?
- Is the policy communicated to all persons working for or on behalf of the organization (example, employees, researchers, contractors, students, etc.)?
- Do persons working for or on behalf of the organization exhibit knowledge of environmental policy (key commitments and how they relate to job)?
- Is the policy available to the public?

Planning

Environmental Aspects

Inspection Criteria: The organization shall ensure that the significant environmental aspects are taken into account in establishing, implementing, and maintaining its EMS in conformance with ISO 14001:2004(E) Section 4.3, *Planning*. The organization shall establish, implement, and maintain a procedure(s) to:

a) identify the environmental aspects of its activities, products, or services within the defined scope of its EMS that it can control and those it can influence, taking into account planned or new developments, or new or modified activities, products or services; and
b) determine those aspects that have or can have significant impacts on the environment (i.e., significant environmental aspects).

Inspection Activity: Review selected contracts, environmental aspects, hazard control plans, sampling results, permits (discharge and/or spill response), work packages, sustainable acquisition plans, and other related documents, procedures, pollution prevention opportunity assessments, and monitoring protocols. Interview personnel including Facility Representatives, project personnel, group leaders, researchers, contract specialists, key facility purchasers, subject matter experts, managers, work control managers, foremen, supervisors, environmental, safety, and health support personnel, and operations/technician personnel. Observe work activities.

Inspection Lines of Inquiry:

- Is there a documented and maintained procedure to review and update aspects which cover all activities, products, and services? Does this procedure establish a review schedule and is that schedule being met?
- Are aspects documented?
- Has a mechanism been implemented to initiate aspect review/revision when activities, products, or services change?
- Is there a documented and maintained procedure to rank and determine the most significant aspects? Are there records of completing this process?
- Do the work planning and control processes (activities, products, and services) identify activities that have the potential to impact the environment, determine the potential impacts from those activities, and establish (using a risk-based process) controls to minimize those impacts? Are these processes documented?
- Are the consequences of poor environmental management being documented and reported?
- Have all processes used for planning activities been evaluated to ensure they identify environmental aspects including research, maintenance, and restoration?
- Are the reviews of work processes, aspects, and significant aspects being performed in accordance with the schedule established by the governing procedure for these reviews?
- Is it clear that significant aspects were taken into account in developing and implementing the EMS?
- Was there effort to include aspects over which there is influence?
- Are there any obvious aspects that should have been considered and were not? If not, why not?

Legal and Other Requirements

Inspection Criteria: The organization shall ensure that these applicable legal requirements and other requirements to which the organization subscribes are taken into account in establishing, implementing, and maintaining its EMS in conformance with ISO 14001:2004(E) Section 4.3.2, *Legal and other Requirements*. The organization shall establish and maintain a procedure:

a) to identify and have access to applicable legal and other requirements to which the organization subscribes related to its environmental aspects including those sustainability goals and targets established pursuant to EO 13514; and
b) to determine how these requirements apply to its environmental aspects.

Inspection Activity: Interview person responsible for maintaining legal and other requirements current, as well as select impacted workers.

Inspection Lines of Inquiry

- Is there a documented procedure for the organization to identify and have access to all applicable legal requirements?
- Does it include federal, state, and local requirements (including those applicable to remote locations), including regulations, permits, and agreements?
- Is someone (or more than one person) designated to keep organization current on requirements?
- Is that person's resources, references, and methods adequate to keep current?
- Is there a process to determine applicability of new requirements?
- Are affected workers (employees, contractors, researchers, students, etc.) made aware of new requirements?
- Is there a process to determine if these requirements apply to the environmental aspects?
- Is there a cross walk or other document/process showing how legal requirements have been taken into account when setting up the EMS?
- Is the EMS used as the platform for implementing the Site Sustainability Plan (SSP) as required by DOE Order 436.1, Section 4. *REQUIREMENTS*, c. (3), in order to contribute to the Department meeting sustainability goals as set by EOs 13423 and 13514?

Objectives, Targets, and Programs

Inspection Criteria: The organization shall establish, implement, and maintain documented environmental objectives and targets at relevant functions and levels within the organization. The objectives and targets shall be measurable, where practicable, and consistent with the environmental policy, including the commitments to sustainable acquisition, prevention of pollution, to compliance with applicable legal and other requirements to which the organization subscribes, and to continual improvement. When establishing and reviewing its objectives and targets, an organization shall take into account the legal requirements and other requirements to which it subscribes especially those sustainability goals from EO 13514 and EO 13423, and its significant environmental aspects. It shall also consider its technological options, its financial, operational and business requirements, and the views of interested parties.

The organization shall establish, implement, and maintain (a) program(s) for achieving its objectives and targets per ISO 14001:2004(E) Section 4.3.3, *Objectives, Targets and Programs.* Program(s) shall include:

a) designation of responsibility for achieving objectives and targets at relevant functions and levels of the organization; and
b) the means and time-frame by which they are to be achieved.

Inspection Activity: Review targets and objectives, and documentation of programs; and interview individuals responsible for achieving targets.

Inspection Lines of Inquiry:

- Does the EMS, as the platform implementing the SSP(s), establish and maintain objectives and targets to meet sustainability requirements from EO 13423 and 13514 including green house gas (GHG) Reductions/Inventory, water resources, regional and local integrated planning, pollution prevention, sustainable buildings, sustainable acquisition, and electronic stewardship where applicable?
- Have all legal and policy aspects been identified and risk ranked with a documented justification for those not determined to require objectives and targets?
- Has the organization established and maintained objectives and targets for at least some significant aspects not driven by sustainability or legal requirements?
- Are there programs to achieve all the identified objectives and targets? Do the targets support achievement of the objectives?
- Are objectives and targets reasonable and measurable?
- Is there a documented and maintained procedure for annually reviewing objectives and targets?
- Are objectives and targets communicated to the employees that are supposed to achieve them?
- Do the programs include schedules for completion and resources necessary to achieve the objectives and targets?
- Do the programs assign responsibilities for completion of tasks in achieving objectives and targets?
- Are objectives and targets approved and periodically reviewed by a senior manager with the responsibility and authority for achieving DOE and Executive Order established goals?

Implementation and Operation

Resources, Roles, Responsibilities, and Authorities

Inspection Criteria: Management shall ensure the availability of resources essential to establish, implement, maintain, and improve the EMS in conformance with ISO 14001:2004(E) Section 4.4.1, *Resources, Roles, Responsibilities, and Authority.* Resources include human resources and specialized skills, organizational infrastructure, technology, and financial resources.

Roles, responsibilities, and authorities shall be defined, documented, and communicated in order to facilitate effective environmental management. The organization's senior management shall appoint a specific management representative who, irrespective of other responsibilities, shall have defined roles, responsibilities, and authority for:
a) ensuring that an EMS is established, implemented, and maintained; and
reporting to senior management on the performance of the EMS for review, including recommendations for improvement.

Inspection Activity: Interview management representative for EMS, contract specialists, and senior management.

Inspection Lines of Inquiry:

- In accordance with Federal Acquisition Regulation: Sustainable Acquisition (48 CFR 23.902 Policy) does the site operating contract require the contractor to ensure proper implementation and execution of EMS roles and responsibilities?
- Has senior management appointed a Management Representative for EMS?
- Are roles, responsibilities, and authorities defined, documented, and communicated?
- At sites with multiple contactors, has a lead coordinating contractor been designated for maintaining a site-wide EMS that accounts for all site operations?
- Do the roles and responsibilities of this Management Representative document include sufficient authority to accomplish the inspection criteria above?
- Do employees (e.g., management representative, researchers, and senior managers) know their roles, authorities, and responsibilities? Are their views of their roles in the EMS in agreement with expectations stated in the EMS?
- Has management ensured the availability of necessary resources (people, technology, organizational infrastructure, money) to accomplish objectives and targets? How is this accomplished?
- Has the Management Representative given senior management recommendations for improvement?

Competence, Training, and Awareness

Inspection Criteria: The organization shall, in conformance with ISO 14001:2004(E) Section 4.4.2, *Competence, Training and Awareness,* identify training needs associated with its environmental aspects and its EMS. It shall provide training or take other action to meet these needs, and shall retain associated records.

The organization shall ensure that any person(s) performing tasks for it or on its behalf that have the potential to cause a significant environmental impact(s) identified by the organization is (are) competent on the basis of appropriate education, training, or experience, and shall retain associated records.

The organization shall establish, implement, and maintain (a) procedure(s) to assure that persons working for it or on its behalf are aware of:
a) the importance of conformity with the environmental policy and procedures and with the requirements of the EMS;

b) the significant environmental impacts and related actual or potential impacts associated with their work, and the environmental benefits of improved personal performance;
c) their roles and responsibilities in achieving conformity with the requirements of the EMS; and
d) the potential consequences of departure from specified operating procedures.

Inspection Activity: Interview training manager, supervisors, and workers associated with organizations that could adversely impact the environment activities focusing on those working in organizations that have significant environmental aspects including line, environmental support, maintenance/facility management, and procurement organizations.

Inspection Lines of Inquiry:

- Are there specific, documented minimum training requirements for each person (e.g., employees, subcontractors, temporary workers, visiting scientists/students) performing a task that can cause significant environmental impact?
- Are managers and workers receiving training commensurate with the environmental hazards and potential impacts associated with their work?
- Have all organizations with activities that could adversely impact the environment provided their employees with awareness training?
- Are persons working for or on behalf of the organization aware of:
  - environmental aspects of personal tasks (how job can impact environment);
  - how to avoid environmental degradation (what controls are in place to prevent negative environmental impact);
  - negative consequences of not following controls, as well as positive consequences of improved personal performance;
  - how to contribute to unit's programs (e.g., recycling) and objectives and targets if relevant to their job;
  - emergency response/actions;
  - designated products for which Federal agencies have specific purchasingrequirements;
  - life cycle analysis to identify true purchasing costs;
  - requirement to build designated product specifications into 95% of all contracts; and
  - DOE sustainable acquisition purchasing and reporting requirements?
- Are procedures established and maintained to make persons who work for or on its behalf aware of (a – d) noted in the inspection criteria above?
- Are records retained?

Communication

Inspection Criteria: With regard to its environmental aspects and EMS, the organization shall, in conformance with ISO 14001:2004(E) Section 4.4.3, *Communication, establish*, implement, and maintain a procedure(s) for:

a) internal communication between the various levels and functions of the organization; and
b) receiving, documenting, and responding to relevant communication from external interested parties.

The organization shall decide whether to externally communicate about its significant environmental aspects and shall document its decision. If the decision is to communicate, the organization shall establish and implement a method(s) for this external communication.

Inspection Activity: Review procedures and records of communication between management and employees, and with other stakeholders.

Inspection Lines of Inquiry:
- Are there procedures and records that are maintained for internal communications and activities regarding the company's environmental aspects and its overall EMS?
- Are internal communications between different levels and different functions documented?
- Are there procedures for handling and documenting receipt and response to relevant questions from interested parties?
- Have protocols been established for externally communicating significant environmental aspects, and are they documented?
- Have these protocols been used to communicate externally on significant aspects?

Documentation

Inspection Criteria: The EMS documentation, in conformance with ISO 14001:2004(E) Section 4.4.4, *Documentation,* shall include:
- the environmental policy, objectives and targets;
- description of the scope of the EMS;
- description of the main elements of the EMS and their interaction and reference to related documents;
- documents, including records, required by industry standards, and documents, including records, determined by the organization to be necessary to ensure the effective planning, operation and control of processes that relate to its significant environmental aspects; and
- documents required by the EMS and by industry standards shall be controlled.

Records are a special type of document and shall be controlled in accordance with the requirements.

Inspection Activity: Review EMS documentation and records and procedures on document control and select documents to be retrieved (example, environmental permits, surveys, etc.)

Inspection Lines of Inquiry:
- Does the EMS documentation address all required content?
- Does the system document how the related documentation [regulations, permits, forms, etc.] is to be used?
- Have protocols been developed that determined what documents and records are needed to ensure effective planning, operation, and control of processes that relate to significant aspects?
- Are there procedures for controlling and maintaining all documents required by industry standard?

- Are the documents accessible?
- Are EMS documents reviewed, updated, and approved or re-approved as necessary? Where does this requirement exist?
- Do document control procedures cover all required elements?
- Are latest versions of documents available in all areas and by all personnel that perform tasks essential to the effective functioning of the EMS?
- Are documents of external origin needed for the EMS (e.g., maintenance manuals, Code of Federal Regulations, etc.) identified and controlled?
- Are obsolete documents removed from use and assured from unintended use?
- Are historical copies maintained & labeled as such?

Operational Controls

Inspection Criteria: The organization, in conformance with ISO 14001:2004(E) Section 4.4.6, *Operational Controls,* shall identify and plan those operations that are associated with the identified significant environmental aspects consistent with its policy, objectives, and targets, in order to ensure that they are carried out under specified conditions, by:

a) establishing, implementing, and maintaining (a) documented procedure(s) to control situations where their absence could lead to deviation from the environmental policy, objectives, and targets;
b) stipulating operating criteria in the procedure(s);
c) establishing, implementing, and maintaining procedures related to the identified significant environmental aspects of goods and services used by the organization and communicating applicable procedures and requirements to suppliers, including contractors; and
d) ensuring requirements in EO 13423 and 13514 for sustainability are addressed .

Inspection Activity: Review EMS documents as related to work planning and control processes and procedures. Interview personnel including project personnel, group leaders, subject matter experts, managers, work control and maintenance managers, foremen, supervisors, environmental support personnel, procurement personnel, and operations/technician personnel.

Inspection Lines of Inquiry:

- Have the operations and activities been identified that are associated with the significant environmental aspects including EO 13423 and 13514 requirements for greenhouse gas (GHG) reductions, water usage, pollution prevention, sustainable acquisition, and sustainability?
- In accordance with Federal Acquisition Regulation: Sustainable Acquisition (48 CFR 52.223-19 Compliance with Environmental Management Systems) does the contractor's work conform with all identified operational controls in the applicable EMS?
- Are the identified operations and activities consistent with the organization's policy, objectives, and targets?
- Is there a maintenance plan for the above identified operations and activities?
- Does work planning take significant aspects into account and ensure that adequate controls are established?

- Have procedures been established and maintained for the above operations that, if they are not followed for these situations, could lead to deviations from the environmental policy and the objectives and targets?
- Are operating criteria clearly established and documented in the procedures for the operations and activities identified above?
- Have the significant environmental aspects of raw materials, supplies, and services used in the above operations and activities been identified?
- Are there procedures for handling raw materials, supplies, and services used in the activities associated with significant impacts?
- Are operational controls in place and working?
- Are EO 13514 requirements involving greenhouse gases, sustainability, sustainable acquisition, pollution prevention, water usage reductions, and other new requirements being incorporated into day-to-day operations?
- Are relevant procedures and requirements communicated to the appropriate suppliers and contractors via contracts in accordance with Federal Acquisition Regulation: Sustainable Acquisition (48 CFR 23.109 Sustainable Acquisition)?

Emergency Preparedness and Response

Inspection Criteria: The organization shall, in conformance with ISO 14001:2004(E) Section 4.4.7, *Emergency Preparedness and Response,* establish, implement, and maintain a procedure(s) to identify potential for and respond to accidents and emergency situations, and for preventing and mitigating the environmental impacts that may be associated with them.

The organization shall review and revise, where necessary, its emergency preparedness and response procedures, in particular, after the occurrence of accidents or emergency situations.

The organization shall also periodically test such procedures where practicable.

Inspection Activity: Review emergency response documents as related to processes and procedures. Interview personnel including emergency management program leaders, emergency response managers, environmental support personnel, and operations/technician personnel that would be first responders.

Inspection Lines of Inquiry:

- Are there maintained procedures to identify potential for accidents and emergency situations?
- Are there maintained procedures to respond to accidents and emergency situations?
- Are there maintained procedures to prevent and minimize the environmental impacts that may be associated with the identified accidents and emergency situations?
- Are there reviews and revisions of the emergency preparedness and response procedures, particularly after an incident?
- Are there periodic tests of the above procedures?

Checking and Corrective Action

Monitoring and Measurement

Inspection Criteria: The organization shall, in conformance with ISO 14001:2004(E) Section 4.5.1, *Monitoring and Measurement,* establish, implement, and maintain a procedure(s) to monitor and measure, on a regular basis, the key characteristics of its operations that can have a significant environmental impact. The procedure(s) shall include the documenting of information to monitor performance, applicable operational controls, and conformity with the organization's environmental objectives and targets. The organization shall ensure that calibrated or verified monitoring and measurement equipment is used and maintained and shall retain associated records.

Inspection Activity: Review EMS documents as related to environmental monitoring. Interview personnel including environmental support managers and personnel performing monitoring, operations/restoration managers involved in monitoring environmental impacts, and personnel involved in reporting results such as those involved with the annual site environmental report.

Inspection Lines of Inquiry:

- Are procedures documented and maintained to monitor and measure operations that can have a significant impact on the environment?
- Are there performance indicators and methods for performing monitoring and measurement?
- Are results being evaluated and documented?
- Are doses to members of the public from airborne effluents being evaluated with the CAP-88 model or another EPA-approved model or method to demonstrate compliance with applicable subparts of 40 CFR Part 61, *National Emission Standards for Hazardous Air Pollutants*?
- Is environmental monitoring being conducted to characterize routine and non-routine releases of radioactive material from radiological activities, estimate the dispersal pattern in the environs, characterize the pathway(s) of exposure to members of the public and estimate the doses to individuals and populations in the vicinity of the site or operation commensurate with the nature of the DOE radiological activities and the risk to the public and the environment?
- Are sampling results accurately reported to stakeholders using tools such as the Annual Site Environmental Report?
- Is there a calibration or verification system for monitoring equipment?
- Is calibration up-to-date? How do they know when calibration is due?
- If stickers are required by internal procedures, are they in place?
- Are all procedures that support monitoring available to the appropriate personnel and current?
- Are operational controls in place and working as expected for measuring and monitoring?
- Is there evidence that new or modified activities have resulted in necessary amendments to requirements for measuring and monitoring?

Evaluation of Compliance

Inspection Criteria: Consistent with its commitment to compliance, the organization shall establish, implement, and maintain a procedure(s) for periodically evaluating compliance with relevant environmental legislation and regulations in conformance with ISO 14001:2004(E) Section 4.5.2, *Evaluation of Compliance.*

The organization shall evaluate compliance with other requirements to which it subscribes, such as site requirements to ensure compliance by tracking environmental system performance in order to make corrections before permit limits are exceeded. The organization may wish to combine this evaluation with the evaluation of legal compliance or establish a separate procedure(s).

The organization shall keep records of the results of the periodic evaluations.

Inspection Activity: Review EMS documents as related to quality assurance and/or auditing program processes and procedures. Interview personnel including oversight personnel, environmental support personnel, and line organization managers involved in self-assessment activities. In order to determine both compliance with regulations and effectiveness of self-assessments, Appendix A provides references and indicator compliance requirements for select environmental programs and media that can be inspected to establish a compliance baseline for the following lines of inquiry and those under Internal (EMS) Audit.

Inspection Lines of Inquiry:

- Is there a documented procedure for periodically evaluating compliance with environmental legislation and regulations?
- Do compliance assessments include "other requirements" such as those designed to track performance of treatment systems in order to find and correct problems before a violation occurs?
- Has a Management Representative for EMS been assigned responsibility for ensuring that all environmental media are covered over some time period?
- Are findings from these evaluations trended and tracked to closure as part of the correction action tracking system (see Nonconformity, Corrective Action and Preventive Action)?
- Are results of evaluations documented and records retained?
- Are managers kept apprised of compliance concerns on a regularly scheduled basis?

Nonconformity, Corrective Action, and Preventive Action

Inspection Criteria: The organization shall establish, implement, and maintain a procedure(s) for dealing with actual or potential nonconformities and for taking corrective and preventive action in conformance with ISO 14001:2004(E) Section 4.5.3, *Nonconformity, Corrective Action, and Preventive Action.* Based on compliance review and audit programs, results will identify compliance needs and possible root causes of non-compliance.
The procedure shall define requirements for:

a) identifying and correcting nonconformities and taking actions to mitigate their environmental impacts;
b) investigating nonconformities, determining their causes, and taking actions in order to avoid their recurrence;
c) evaluating the need for actions including extent of condition across the site to prevent nonconformities and implementing appropriate actions designed to avoid their occurrence;
d) recording the results of corrective actions and preventive actions taken; and
e) reviewing the effectiveness of corrective actions and preventive actions taken.

Actions taken shall be appropriate to the magnitude of problems and the environmental impact encountered.

The organization shall ensure that any necessary changes are made to EMS documentation to prevent a recurrence.

Inspection Activity: Review EMS documents as related to corrective action processes and procedures. Interview personnel including oversight personnel, managers, supervisors, and maintenance managers for facilities that have had nonconformities, and environmental support personnel.

Inspection Lines of Inquiry:

- Are procedures documented and maintained for defining responsibility and authority for handling, investigating, and taking action to minimize impacts of nonconformities?
- Does the corrective action program address both actual and potential (e.g., near miss) nonconformities?
- What (potential) non-compliances have been identified during internal audits? During inspections by regulators? What action was taken to address the specific violation? To identify and correct root causes?
- Is evaluation of the need to prevent nonconformities included in procedures?
- Are procedures documented and maintained for initiating and completing corrective and preventive action?
- Are appropriate corrective and preventive actions taken?
- Are the results of the corrective and preventive actions implemented and recorded?
- Is the effectiveness of corrective and preventive actions reviewed at all appropriate levels including managers with the authority to commit resources to prevent nonconformities?
- Are lessons learned shared within the site and across the DOE complex?

Control of Records

Inspection Criteria: The organization shall establish and maintain records of results as necessary to demonstrate conformity to the requirements of its EMS and the results achieved in conformance with ISO 14001:2004(E) Section 4.5.4, *Control of Records*. The organization shall establish, implement, and maintain a procedure(s) for the identification, storage, retrieval, retention, and disposal of environmental records of results.

Environmental records shall be and remain legible, identifiable, and traceable.

Inspection Activity: Review EMS documents that implement record retention requirements. Interview personnel including record management personnel, environmental support personnel, and operations/technician personnel operating environmental systems.

Inspection Lines of Inquiry:

- Are procedures documented and maintained for the identification, maintenance, and disposition of environmental records?
- Are the records legible, identifiable, and traceable to the activity, product, or service involved?
- Are the records stored and maintained such that they are readily retrievable and protected against damage, deterioration, or loss?
- Are there documented specified retention times for all of the records identified?
- Are records demonstrating the results of the EMS maintained?
- Are records managed and retained per plans/procedures?

Internal (EMS) Audit

Inspection Criteria: The organization shall, in conformance with ISO 14001:2004(E) Section 4.5.5, *Internal Audit,* ensure that internal audits of the EMS are conducted at planned intervals to:

a) determine whether the EMS conforms to planned arrangements for environmental management, including the requirements of industry standards, has been properly implemented, and is maintained; and
b) provide information on the results of audits to management.

Audit program(s) shall be planned, established, implemented and maintained by the organization, taking into consideration the environmental importance of the operation(s) concerned and the results of previous audits.

Audit procedure(s) shall be established, implemented, and maintained that address responsibilities and requirements for planning and conducting audits, reporting results, and retaining associated records, the determination of audit criteria, scope, frequency and methods. As discussed in Evaluation of Compliance, Appendix A provides tools that can be inspected to establish a compliance baseline for these lines of inquiry for Internal (EMS) Audit.

Selection of auditors and conduct of audits shall ensure objectivity and the impartiality of the audit process.

Inspection Activity: Review EMS documents as related to internal auditing processes and procedures. Interview personnel including quality assurance managers, facility managers, work control and maintenance managers, and environmental support staff. Review reports from past audits.

Inspection Lines of Inquiry:

- Are procedures documented and maintained for periodic EMS audits?
- Has the environmental importance of operations and results of previous audits been incorporated into the audit program?
- Does the EMS auditor determine whether their EMS has been implemented and maintained, and conforms to this standard?
- Are compliance concerns being identified?
- Does the procedure for EMS audits include the scope of the audit, frequency, methodologies used, responsibilities, requirements, and method of reporting results?
- Does the procedure include requirements to ensure objectivity and the impartiality of the audit process?
- Are environmental support personnel involved in developing criteria to ensure new requirements are included such as those for meeting greenhouse gases, pollution prevention, sustainable buildings, and sustainable acquisitions under EO 13514?
- Does the EMS auditor provide results of the audits to the appropriate level of management who have the authority to take action on the results?
- Are EMS audit records maintained?

Management Review

Management Review

Inspection Criteria: Senior management shall, in conformance with ISO 14001:2004(E) Section 4.6, *Management Review,* review the organization's EMS at planned intervals to ensure its continuing suitability, adequacy, and effectiveness. Reviews shall include assessing opportunities for improvement and the need for changes to the EMS, including the environmental policy, objectives and targets.

Records of the management reviews shall be retained.

Inputs to management reviews shall include:

a) results of internal audits and evaluations of compliance with legal requirements and with other requirements to which the organization subscribes;
b) communication(s) from external interested parties, including complaints;
c) the environmental performance of the organization;
d) the extent to which objectives and targets have been met;
e) status of corrective and preventive actions;
f) follow-up actions from previous management reviews;
g) changing circumstances, including developments in legal and other requirements related to its environmental aspects; and
h) recommendations for improvement.

The outputs from management reviews shall include any decisions and actions related to possible changes to the environmental policy, objectives, targets and other elements of the EMS, consistent with the commitment to continual improvement.

Inspection Activity: Review EMS documents, Management Reviews, and record of decisions based on these management reviews. Interview senior managers, line managers, Environmental Management Representatives, and managers for environmental programs.

Inspection Lines of Inquiry:

- Has senior management performed a documented review of the EMS on a periodic basis?
- Does the management review address the system's continued suitability, adequacy, and effectiveness, in addition to the possible need to change the EMS policy, objectives, and other elements of the EMS based on the assessment of the inputs noted above?
- Are non-conformances identified as major and minor following guidance from DOE Order 436.1 in reference p. *Instructions for Self-Declaration of Conformance with ISO 14001:2004(E)*, Office of the Federal Environmental Executive, January 15, 2008? Note: Guidance available at http://www.fedcenter.gov/_kd/go.cfm?destination=ShowItem&Item_ID=8864
- Is there a record of decision which outlines actions for the coming year?

Appendix A

Purpose: This Appendix provides references and indicator compliance requirements for select environmental programs/subject areas that can be inspected to establish a compliance baseline. This baseline can then be used in conjunction with the lines of inquiry for Evaluation of Compliance and Internal (EMS) Audit to evaluate both the effectiveness in determining compliance with regulations and the effectiveness of self-assessments. Additional CRADs for several environmental activities including hazardous and radioactive waste management are located at http://www.hss.energy.gov/IndepOversight/ESHE/docs.html

Inspection Activity: Review EMS and compliance documents such as permits, operating procedures, self-assessment checklists, and checklists used to perform permit required inspections. Interview personnel including oversight personnel, environmental support personnel, and line organization managers, work control and maintenance managers, and workers involved in operations that could adversely impact the environment. Walkdown processes used for work planning and control, evaluate actual environmental activities within facilities, and assess environmental monitoring activities.

Inspection Lines of Inquiry: These lines of inquiry are divided into an environmental program and select environmental media/operations such as waste management, airborne emissions, and liquid effluents. Using a sampling approach based on activities and operations at the site, these can serve as an indicator of the effectiveness in both identifying regulatory concerns and achieving regulatory compliance.

Industrial Waste Management (Universal waste)

***References**: Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance; Resource Conservation and Recovery Act (RCRA); 40 CFR 261 (& State) hazardous and universal waste regulations*

- Does the line organization have a process to ensure that material handlers and waste generators are trained in hazardous/industrial waste management?
- Is waste adequately characterized and documented?
- Is waste properly containerized and labeled and stored appropriately (i.e., no apparent structural defects and/or deterioration of the container, does it bear a label indicating that it is non-hazardous waste, is it stored in a protected environment [away from the elements and to prevent breakage])?
- Were pollution prevention and sustainable acquisition requirements evaluated prior to the generation of this waste so that goals set in response to EO 13514 can be achieved?
- In accordance with Federal Acquisition Regulation: Sustainable Acquisition (48 CFR 52.223-10 Waste Reduction Program) has the contractor established a program to promote cost-effective waste reduction?
- Have sustainable acquisition requirements been included in contracts for new systems?

- Are the line organizations following the recycling guidelines? Is there an attempt by the line organizations to maximize the extent of recycled products? Does organization use postconsumer products?
- Some recyclable products have the potential to incur regulatory penalties (fines) if not managed correctly (example, aerosol cans, batteries, lead shielding, lamps (non-green tipped), and used oil filters). If these products are recycled or reused, are there procedures to make sure that any or all of the items listed are managed properly?
- If industrial waste is stored in a less than 90-day area or a satellite accumulation area, is it cordoned off from the hazardous waste to ensure recycling options remain available?
- Are accumulation dates applied to industrial waste containers and regulatory time limits for storage being met?

Hazardous Waste Management

***References**: Resource Conservation and Recovery Act (RCRA); Toxic Substance Control Act (TSCA); 40 CFR 261 (& State) hazardous waste regulations*

Note: following Resource Conservation and Recovery Act requirements for PCB could result in a violation. See **Polychlorinated Biphenyls (PCBs)**

- Are hazardous waste generators and/or responsible parties trained in hazardous waste management per site requirements?
- Are the required administrative and engineering controls in place at locations where waste is generated and stored per internal and external requirements?
- At the point of generation, is hazardous waste properly characterized by process knowledge and/or analytical testing, and are disposal forms accurately completed and submitted to environmental and waste management services organizations in a timely manner?
- Is hazardous waste within satellite areas properly containerized, identified with a hazardous waste label that lists specific constituents as appropriate, and the waste container is NOT full?
- Satellite Accumulation Areas (SAAs) for hazardous wastes are at or near the point of generation according to site requirements. Note: State requirements may be different, for example, in California, accumulation in an SAA is limited to one year but amount is not limited; whereas New York State has no time limit, but total amount must be <55 gallons (non-acute wastes).
- Are the less than 90-Day Accumulation Areas for hazardous wastes operated according to site requirements (for example, signs identifying less than 90-day storage areas). Are the waste managers/delegates appropriately trained in area operations?
- Are permitted Treatment, Storage, and Disposal (TSD) facilities being managed in accordance with the RCRA Part B permit?

Radioactive Waste Management

***References**: DOE Order 435.1, Radioactive Waste Management*

- Are waste generators trained to understand the radioactive waste management requirements?
- Is waste adequately characterized? Is the characterization paperwork accurately completed and submitted to the waste management organization?
- Is waste properly containerized, labeled, and stored appropriately?
- Are radioactive waste accumulation areas established and operated according to site requirements?
- Are decay-in-storage programs (in support of waste minimization) established and maintained according to site requirements?

Mixed Waste Management

References: *DOE Order 435.1, Radioactive Waste Management; Resource Conservation and Recovery Act (RCRA); Toxic Substance Control Act (TSCA); 40 CFR 261 (& State) hazardous waste regulations*

Note: PCB contaminated waste is not mixed waste and must be managed according to TSCA requirements; see **Polychlorinated Biphenyls (PCBs)**.

- Are mixed waste generators trained in hazardous and radioactive waste management?
- Is waste adequately characterized? Is the characterization paperwork accurately completed and submitted to the waste management organization?
- Is waste properly containerized, labeled (for RCRA or TSCA, and radioactivity constituents), and stored appropriately?
- Are Satellite Accumulation Areas established and operated according to requirements?
- Are less than 90-Day Accumulation Areas established and operated according to site requirements? Are less than 90-Day Area Managers trained in area operation?
- Is there mixed waste stored beyond one year? If so, it must be on the Site Treatment Plan and reports made to regulators on efforts to dispose of this mixed waste.

Polychlorinated Biphenyls (PCBs)

References: *Toxic Substance Control Act (TSCA)*

- Is there an SME or responsible organization that assures PCB is managed in compliance with regulatory requirements?
- Does the responsible organization maintain their PCB equipment inventory current?
- Does the responsible organization report their annual (calendar year or per site requirements) PCB equipment inventory to the PCB Subject Matter Expert?
- Does the responsible organization keep their PCB equipment and areas labeled with the appropriate size EPA-approved label?

- Does a responsible organization store PCB items (spares, etc.) having concentrations >50 ppm? Are the "Storage for Reuse" requirements identified in this organization's procedure being met?
- Does the responsible organization ensure that there is no combustible material within five feet of PCB equipment containing >500 ppm PCBs?
- Does the responsible organization know who to contact and what to do prior to conducting research involving PCBs?
- Does the responsible organization know whom to contact and what to do in the event of a PCB spill/release?
- Does the responsible organization dispose of all PCB-containing equipment as TSCA waste in accordance with site requirements? (**Note:** TSCA requirements for labeling and storage of PCB waste are different than those for hazardous waste.)
- Does the responsible organization store their waste PCB-containing equipment/material in their waste management area that is labeled for TSCA waste (this would be in addition to hazardous waste signage) and is it labeled with the appropriate size EPA-approved label? (**Note**: A RCRA permitted facility can be used if the permit also addresses PCB requirements.)
- Are PCB wastes with radioactive contamination managed in accordance with site requirements specific to both TSCA and DOE 435.1 requirements?

Non-Radiological Airborne Emissions

***References**: Clean Air Act; 40 CFR 70 & 71, Title V permitting requirements*

- Has the line organization had the environmental support organization evaluate new or modified emission sources for permit applicability?
- Have permit authorizations been obtained for emission sources where needed?
- Are source operators cognizant of permit operating limitations/restrictions?
- Are records of inspections and maintenance of air pollution control devices available?
- Does the line organization have records available or other process knowledge that will allow them to estimate annual source emissions on permitted sources?
- Does the line organization know which support organization to contact for information on permitting emission sources and for questions on regulatory requirements associated with permitted sources?
- Can the source operator document compliance with applicable requirements and Title V Permit conditions described in the site air permit(s)?
- Do tasks follow practices to maximize the use of safe alternatives to ozone-depleting substances (ODS)?

Liquid Effluents

***References:** Safe Drinking Water Act;* 40 CFR 141, *National Primary Drinking Water Regulations; Clean Water Act; 40 CFR 131, Water Quality Standards*; DOE Order 458.1 change 2, *Radiation Protection of the Public and the Environment*

- Does the line organization have a process to ensure that liquid effluents are evaluated and authorized by the environmental support organization prior to discharge (i.e., are non-routine discharges identified during the work planning processes (work permits or equivalent) and evaluated for approval using the site's process for approving Liquid Effluents prior to release)?
- Are discharges of liquids containing radionuclides from DOE activities into non-Federally owned sanitary sewers prohibited unless DOE Order 458.1 requirements are met including the material is readily soluble (or readily dispersed biological materials) in water, and the DOE Field Element Manager provides a report that describes and summarizes such discharges to sanitary sewers to appropriate local officials at least annually?
- Are liquid releases containing radionuclides from DOE activities managed in a manner that ensures protection of ground water resources now and in the future, based on use and value considerations?
- Is the disposition of non-process water potentially containing radionuclides from DOE activities managed to protect soil and ground water and prevent the creation of future cleanup sites?

Protection of Public Water Supplies

References: *Safe Drink Water Act;* 40 CFR 141, and *local and state potable water regulations*; DOE Order 458.1 change 2, *Radiation Protection of the Public and the Environment*

- Is the organization aware of and knows the location of all Cross Connection Control Devices installed at its facilities?
- Is all industrial equipment that is directly connected to the potable water system protected by the installation of a double check valve or reduced pressure zone device?
- Are cross connection control devices tested at least annually and are rebuilt every five years?
- Are all laboratory sinks, shop sinks, and custodial sinks protected by the installation of an atmospheric vacuum breaker or equivalent? This is especially applicable to any sink equipped with a vacuum aspirator or hose connection.
- If a permit (authorization) is required, has one been obtained and is it still valid (within its effective date)? Are all permit (authorization) conditions being met?
- Are radiological activities conducted to ensure that radionuclides from DOE activities contained in liquid effluents do not cause private or public drinking water systems to exceed the drinking water maximum contamination limits in 40 CFR Part 141, *National Primary Drinking Water Regulations*?