

U.S. Department of Energy
Washington, D.C.

ORDER

DOE O 450.1

Approved: 1-15-03
Review Date: 1-15-05
Chg 1: 1-24-05

SUBJECT: ENVIRONMENTAL PROTECTION PROGRAM

1. **OBJECTIVES.** To implement sound stewardship practices that are protective of the air, water, land, and other natural and cultural resources impacted by Department of Energy (DOE) operations and by which DOE cost effectively meets or exceeds compliance with applicable environmental; public health; and resource protection laws, regulations, and DOE requirements. This objective must be accomplished by implementing Environmental Management Systems (EMSs) at DOE sites. An EMS is a continuing cycle of planning, implementing, evaluating, and improving processes and actions undertaken to achieve environmental goals. These EMSs must be part of Integrated Safety Management Systems (ISMSs) established pursuant to DOE P 450.4, *Safety Management System Policy*, dated 10-15-96.
2. **CANCELLATION.** DOE O 5400.1, General Environmental Protection Program, dated 11-9-88 and DOE N 450.4, Assignment of Responsibilities for Executive Order 13148, Greening the Government Through Leadership in Environmental Management, dated 2-05-01. Cancellation of a Directive does not, by itself, modify or otherwise affect any contractual obligation to comply with the Directive. Cancelled Directives that are incorporated by reference in a contract remain in effect until the contract is modified to delete the references to the requirements in the cancelled Directives.
3. **APPLICABILITY.**
 - a. **DOE Elements .**
 - (1) Except as noted in paragraph 3c, this Order applies to all DOE elements listed on Attachment 1 that are responsible for the management and operation of the Department's facilities, including elements of the National Nuclear Security Administration and power administrations.

The Administrator of NNSA shall assure that NNSA employees comply with their respective responsibilities under this Order.
 - (2) Where ISMSs are not applicable, DOE elements must ensure the implementation of EMSs. These DOE elements must interpret all references to ISMSs within this Order to mean EMSs.
 - b. **DOE Contractors.**
 - (1) The Contractor Requirements Document (CRD), Attachment 2, sets forth requirements of this Order that will apply to contractors responsible for the

Vertical line denotes change.

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INITIATED BY:
Office of Environment, Safety and Health

management and operation of the Department-owned facilities whose contracts include the CRD.

- (2) This CRD must be included, as appropriate, in all site/facility management contracts involving activities associated with the use, storage, disposal and transportation of waste; emissions to air; discharges to water; and management of cultural and other natural resources.
- (3) This Order does not apply to other than site/facility management contracts. Any application of any requirements of this Order to other than site/facility management contracts will be communicated separately from this Order.
- (4) The office identified in paragraph 5.d. is responsible for notifying the contracting officer of which contracts are affected. Once notified, the contracting officer is responsible for incorporating the CRD into each affected contract via the laws, regulations, and DOE directives clause of the contract.
- (5) As the laws, regulations, and DOE directives clause states, regardless of the performer of the work, a contractor with the CRD incorporated into its contract is responsible for compliance with the requirements of the CRD. An affected contractor is responsible for flowing down the requirements of this CRD to subcontracts at any tier to the extent necessary to ensure the contractor's compliance with the requirements.

c. Exclusions.

- (1) Activities conducted under the authority of the Director, Naval Nuclear Propulsion Program, as described in Executive Order 12344 and set forth in Public Laws 98-525 and 106-65.
- (2) Activities conducted by the Bonneville Power Administration as authorized by Delegation Order No. 00-033.00A.
- (3) Activities conducted by the Office of the Secretary, Chief Information Office, Office of Congressional and Intergovernmental Affairs, Office of Counterintelligence, Departmental Representative to the Defense Nuclear Facilities Safety Board, Office of Economic Impact and Diversity, Energy Information Administration, Office of General Counsel, Office of Hearings and Appeals, Office of Inspector General, Office of Intelligence, Office of Policy and International Affairs, Office of Public Affairs, and Secretary of Energy Advisory Board.

4. REQUIREMENTS.

- a. General Requirements. All DOE elements must ensure that site ISMSs include an EMS that does the following.
 - (1) Provides for the systematic planning, integrated execution, and evaluation of programs for—
 - (a) public health and environmental protection,
 - (b) pollution prevention (P2), and
 - (c) compliance with applicable environmental protection requirements.
 - (2) Includes policies, procedures, and training to identify activities with significant environmental impacts, to manage, control, and mitigate the impacts of these activities, and to assess performance and implement corrective actions where needed.
 - (3) Includes measurable environmental goals, objectives, and targets that are reviewed annually and updated when appropriate.
- b. Integration of an EMS into ISMS. As part of integrating EMSs into site ISMSs, DOE elements must do the following.
 - (1) Consider the following for inclusion as applicable:
 - (a) conformity of DOE proposed actions with State Implementation Plans to attain and maintain national ambient air quality standards,
 - (b) implementation of a watershed approach for surface water protection,
 - (c) implementation of a site-wide approach for groundwater protection,
 - (d) protection of other natural resources including biota,
 - (e) protection of site resources from wild land and operational fires, and
 - (f) protection of cultural resources.
 - (2) Promote the long-term stewardship of a site's natural and cultural resources throughout its operational, closure, and post-closure life cycle.

- (3) Reduce or eliminate the generation of waste, the release of pollutants to the environment, and the use of Class I ozone-depleting substances (ODS) through source reduction, re-use, segregation, and recycling and by procuring recycled-content materials and environmentally preferable products and services.
 - (4) Ensure the early identification of, and appropriate response to, potential adverse environmental impacts associated with DOE operations, including, as appropriate, preoperational characterization and assessment, and effluent and surveillance monitoring.
- 5. RESPONSIBILITIES. All DOE elements, as specified in paragraph 3a of this Order, are responsible for implementing the requirements specified in paragraph 4. Corporate responsibilities for management of environment, safety and health assigned to DOE elements are delineated in Section 9 of DOE M 411.1-1C, *Safety Management Functions, Responsibilities, and Authorities Manual*, dated 5-22-01. Specific responsibilities for implementing this Order are set forth below.
 - a. Assistant Secretary for Environment, Safety and Health, in coordination with other DOE elements, must do the following.
 - (1) Develop or revise, as needed, existing DOE environmental protection directives, policies, guidance, requirements, and procedures to—
 - (a) provide guidance to Program Secretarial Offices (PSOs) and field organizations for ensuring site ISMSs provide for EMSs that promote the protection of the environment, efficient compliance with environmental requirements, and enhanced environmental performance in the conduct of DOE operations (guidance must include instruction for integration of EMS self-assessment requirements into ISMS self-assessment protocols); and
 - (b) maximize the use of safe alternatives to, evaluate present and future uses of, and disseminate information regarding successful efforts to phase out ODS.
 - (2) Serve as the Agency Environmental Executive pursuant to Executive Order 13101, “Greening the Government Through Waste Prevention, Recycling and Federal Acquisition,” with responsibility for—
 - (a) coordination, in conjunction with the Office of Management, Budget and Evaluation, of environmental programs relating to waste prevention, recycling, and acquisition;

- (b) preparation of annual corporate reports on the Department's progress in implementing Executive Order 13101 and Executive Order 13148, "Greening the Government Through Leadership in Environmental Management" based on input from Departmental elements; and
 - (c) submission of the reports indicated in paragraph 5a(2)(b) above to the Office of Management and Budget, the Council on Environmental Quality, and the Environmental Protection Agency.
- b. Program Secretarial Officers, the Administrator for the National Nuclear Security Administration, Administrators for Power Administrations, and DOE Operations/Field/Site Office Managers must assess implementation of EMSs as a component of the implementation of DOE P 450.5, *Line Environment, Safety and Health Oversight*, dated 6-26-97.
- c. Program Secretarial Officers, the Administrator for the National Nuclear Security Administration, and Administrators for the Power Administrations, in addition to the requirements in paragraph 5b, must do the following.
 - (1) Ensure that by December 31, 2005, all sites under their purview have implemented the management system requirements of this Order.
 - (2) Request through the annual Departmental budgetary process, the funding and resources needed for implementing the requirements of this Order and funding to address findings and recommendations from oversight and self-assessment activities conducted in accordance with DOE P 450.5.
 - (3) Ensure sites under their purview include site-specific goals in their ISMS that contribute to the accomplishment of DOE P2 and energy efficiency (P2E2) goals. (P2E2 goals are contained in a memorandum signed by the Secretary on November 12, 1999, <http://www.eh.doe.gov/P2>)
 - (4) Ensure sites under their purview develop and implement cost-effective P2 programs that use life-cycle assessment concepts and practices in determining program return-on-investment (ROI).
 - (5) Evaluate on an annual basis P2 nominations from sites under their purview, select "best in class" nominees, and transmit the nominating information to the Office of Environment, Safety and Health for submittal to the White House's "Closing the Circle Awards" program.
 - (6) Ensure sites under their purview monitor progress toward meeting the P2 requirements of paragraph 4b(3) of this Order, and make such information available annually to the Office of Environment, Safety and Health.

- d. DOE Operations/Field/Site Office Managers, in addition to the requirements in paragraph 5b and in coordination with their reporting sites and PSOs, must do the following.
- (1) Report by December 31, 2005, to the Cognizant Secretarial Officer the status regarding whether the EMS requirements of DOE O 450.1 have been integrated into ISMSs by site contractors.
 - (2) Ensure contractors with approved ISMS descriptions update the ISMS descriptions, as necessary, to include the EMS requirements of this Order.
 - (3) Obtain, as appropriate, local community advice relevant to aspects of Executive Order 13101; Executive Order 13221, "Energy Efficiency Standby Power Devices"; Executive Order 13123, "Greening the Government Through Efficient Energy Management;" Executive Order 13148; and Executive Order 13149, "Greening the Government Through Federal Fleet and Transportation Efficiency," through new or existing outreach programs.
 - (4) Incorporate, where appropriate, environmentally and economically beneficial landscape practices into all new landscaping programs, policies, and practices for facilities under their purview, in furtherance of compliance with Executive Order 13148.
 - (5) Where appropriate, ensure implementation of centralized procurement and distribution programs (e.g., pharmacy) for purchasing, tracking, distributing, and managing materials with toxic or hazardous content at facilities under their purview.
 - (6) Conduct operational assessments, such as Pollution Prevention Opportunity Assessments, of site operations to identify opportunities for source reduction, material segregation, recycle/reuse, or other P2 projects. Based on the results of these assessments, implement cost-effective P2 projects, using life-cycle assessment concepts and practices in determining ROI.
 - (7) Ensure site annual budgetary processes include the funding and resources needed to implement this Order, including P2 program implementation and monitoring.
 - (8) Notify the Director, Office of Strategic Materials, Office of Legacy Management as to the type and quantity of ODS transferred to the Department of Defense (DoD) ODS Reserve.

- (9) Monitor progress toward meeting the P2 requirements of paragraph 4b(3) of this Order, and make such information available annually to the Office of Environment, Safety and Health.
- (10) Develop and implement a program and procedures to maximize the use of safe alternatives to ODS whereby—
 - (a) procurement of Class I ODS for all nonexcepted uses is discontinued by December 31, 2010, consistent with Executive Order 13148, and
 - (b) coordination is conducted within DOE and with DoD, as appropriate, before disposal of ODS removed or reclaimed from equipment (including disposal as part of a contract, trade, or donation), and for situations in which the recovered ODS is a critical requirement for DoD missions, the DOE facility transfers the ODS to DoD.
- (11) Consider P2 in the specification and acquisition of departmental supplies to cost effectively maximize procurement of environmentally preferable products.
- (12) Coordinate all acquisitions with the Department's "Green Acquisition Advocates" established pursuant to Acquisition Letter, AL-2000-03, dated 05/16/00, as appropriate.
- (13) Comply with the requirements of the Emergency Planning and Community Right-to-Know Act (EPCRA or Title III of Superfund Amendments and Reauthorization Act of 1986), 42 U.S.C. 11001, and the Pollution Prevention Act of 1990, 42 U.S.C. 13101, et seq.
- (14) Conduct environmental monitoring, as appropriate, to support the site's ISMS, to detect, characterize, and respond to releases from DOE activities; assess impacts; estimate dispersal patterns in the environment; characterize the pathways of exposure to members of the public; characterize the exposures and doses to individuals, to the population; and to evaluate the potential impacts to the biota in the vicinity of the DOE activity.
- (15) Ensure the analytical work supporting environmental monitoring is implemented using—
 - (a) a consistent system for collecting, assessing, and documenting environmental data of known and documented quality;

- (b) a validated and consistent approach for sampling and analysis of radionuclide samples to ensure laboratory data meets program-specific needs and requirements within the framework of a performance-based approach for analytical laboratory work; and
 - (c) an integrated sampling approach to avoid duplicative data collection.
- (16) Ensure contractor ES&H self-assessment programs are established within the framework of DOE P 450.5 and continue to be effective.
- (17) Ensure, through the annual ISM review process [established pursuant to DEAR 970.5223-1 (e)] that contractor ES&H performance objectives, performance measures, and commitments include appropriate environmental elements based on the environmental risks, impacts of activities at the site and established Departmental P2E2 goals. (P2E2 goals are contained in a memorandum signed by the Secretary on November 12, 1999, <http://www.eh.doe.gov/P2>).
- (18) Determine which contracts are affected by the requirements of this Order and ensure that the CRD is incorporated into only those contracts for which it is appropriate.
- e. Office of Independent Oversight and Performance Assurance must evaluate the effectiveness of DOE Headquarters and field organization implementation of the requirements of this Order.
- f. Director of Management, Budget and Evaluation, in coordination with other DOE elements, must develop or revise existing DOE directives, policies, and documents to accomplish the following.
 - (1) Include, as appropriate, training on environmental requirements and EMSs in the standard senior-level management training for program managers, contracting personnel, procurement and acquisition personnel, facility managers, and other personnel.
 - (2) Include, as appropriate, the successful implementation of EMSs in the position descriptions and performance evaluations for Senior Executive Service and career Headquarters managers and operations/field/site office managers.
 - (3) Ensure DOE's personal property management policies and procedures preclude the Department's disposal of ODS without prior coordination with DoD.

- (4) Ensure procurement policies and procedures encourage the Department's acquisition of recycled-content materials and environmentally preferable products and services.
 - (5) Incorporate DOE's P2E2 goals into the Department's strategic and annual performance plans required by the Government Performance and Results Act of 1993.
 - (6) Ensure that requests for funding to implement the requirements of this Order, made by PSOs are considered in the formulation of DOE's annual budget request.
 - (7) Ensure incorporation of planning and management requirements for historic property and environmental management pursuant to Section 3 (b)(vi) of Executive Order 13327, "Federal Real Property Asset Management."
- g. Director, Office of Legacy Management, must, in addition to their PSO responsibilities in paragraphs 5b and 5c, coordinate with other DOE elements and DoD to dispose of critical Class I ODS.
6. CONTACT. For assistance contact the Office of Environmental Policy and Guidance at 202-586-7870.

BY ORDER OF THE SECRETARY OF ENERGY:



KYLE E. McSLARROW
Deputy Secretary

DOE ORGANIZATIONS TO WHICH DOE O 450.1 IS APPLICABLE

DOE O 450.1 is applicable to the following organizations and all sites under their purview:

Office of Civilian Radioactive Waste Management

Office of Energy Efficiency and Renewable Energy

Office of Environment, Safety and Health

Office of Environmental Management

Office of Fossil Energy

Office of Independent Oversight and Performance Assurance (to the extent noted in paragraph 5e of the Order)

Office of Management, Budget and Evaluation and Chief Financial Officer (to the extent noted in paragraph 5f of the Order)

National Nuclear Security Administration

Office of Nuclear Energy, Science and Technology

Office of Security

Office of Science

Office of Legacy Management

Office of Energy Assurance

Southeastern Power Administration

Southwestern Power Administration

Western Area Power Administration

CONTRACTOR REQUIREMENTS DOCUMENT
DOE O 450.1, *Environmental Protection Program*

Regardless of the performer of the work, contractors with this Contractor Requirements Document (CRD) incorporated into their contracts are responsible for (1) compliance with the requirements of the CRD and (2) flowing down the requirements of the CRD to subcontracts at any tier to the extent necessary to ensure the contractors' compliance with the requirements.

This CRD requires contractors to integrate numerous environmentally related requirements already placed on it by existing statutes, regulations, and policies through the use of an Environmental Management System (EMS) incorporated into an Integrated Safety Management System (ISMS). EMS requirements must be addressed in the contractor's ISMS which must be submitted for DOE review and approval under DEAR 970.5223-1, Integration of environment, safety, and health into work planning and execution.

Contractors must:

1. General Requirements. Ensure their integrated safety management systems (ISMSs) include environmental management systems (EMSs) that do the following.
 - (a) Provide for the systematic planning, integrated execution, and evaluation of programs for—
 - (1) public health and environmental protection,
 - (2) pollution prevention (P2), and
 - (3) compliance with applicable environmental protection requirements.
 - (b) Include policies, procedures, and training to identify activities with significant environmental impacts, to manage, control, and mitigate the impacts of these activities, and to assess performance and implement corrective actions where needed.
 - (c) Include measurable environmental goals, objectives, and targets that are reviewed annually and updated when appropriate.
2. Integration of an EMS into ISMS. As part of integrating EMSs into their ISMSs, do the following.
 - (a) Consider the following for inclusion as applicable:
 - (1) conformity of DOE proposed actions with State Implementation Plans to attain and maintain national ambient air quality standards,

- (2) implementation of a watershed approach for surface water protection,
 - (3) implementation of a site-wide approach for groundwater protection,
 - (4) protection of other natural resources including biota,
 - (5) protection of site resources from wildland and operational fires, and
 - (6) protection of cultural resources.
 - (b) promote the long-term stewardship of a site's natural and cultural resources throughout its operational, closure, and post-closure life cycle;
 - (c) reduce or eliminate the generation of waste, the release of pollutants to the environment, and the use of Class I ozone-depleting substances (ODS) through source reduction, re-use, segregation, and recycling, and by procuring recycled-content materials and environmentally preferable products and services;
 - (d) ensure the early identification of, and appropriate response to, potential adverse environmental impacts associated with DOE operations, including as appropriate, preoperational characterization and assessment; and effluent and surveillance monitoring.
3. Update approved ISMS descriptions as necessary to include EMS requirements of this CRD. Report to DOE operations/field/site office managers within 12 months after insertion of this CRD into the contract on the status of implementation of appropriate management system elements of this CRD.
 4. Assist the Department in meeting its requirements and in its efforts to obtain, as appropriate, local community advice relevant to aspects of Executive Order 13101, "Greening the Government Through Waste Prevention, Recycling and Federal Acquisition;" Executive Order 13221, "Energy Efficiency Standby Power Devices;" Executive Order 13123, "Greening the Government Through Efficient Energy Management;" Executive Order 13148, "Greening the Government Through Leadership in Environmental Management;" and Executive Order 13149, "Greening the Government Through Federal Fleet and Transportation Efficiency."
 5. Assist the Department in meeting its requirements under Executive Order 13148 by ensuring, where appropriate, implementation of centralized procurement and distribution programs (e.g., pharmacy) for purchasing, tracking, distributing, and managing materials with toxic or hazardous content at facilities under their purview.
 6. Incorporate, where appropriate, environmentally and economically beneficial landscape practices into all new landscaping programs, policies, and practices for facilities. [See requirements placed on Federal agencies in Executive Order 13148, "Greening the Government Through Leadership in Environmental Management."]

7. Monitor progress toward meeting the P2 requirements of paragraph 2c above, and make such information available annually to the DOE operations/field/site office.
8. Consider P2 in the specification and acquisition of supplies to cost effectively maximize procurement of environmentally preferable products. As appropriate, all acquisitions must be coordinated with the DOE operations/field/site office “Green Acquisition Advocate.” [See Acquisition Letter AL-2000-03, dated 05/16/00]
9. Conduct operational assessments, such as Pollution Prevention Opportunity Assessments, of site operations to identify opportunities for source reduction, material segregation, recycle/reuse, or other P2 projects. Based on the results of these assessments, implement cost-effective P2 projects, using life-cycle assessment concepts and practices in determining return-on-investment.
10. Conduct environmental monitoring, as appropriate, to support the site’s ISMSs, to detect and characterize releases from DOE activities; assess impacts; estimate the dispersal patterns in the environment; characterize the pathways of exposure to members of the public; and characterize the exposures and doses to individuals, and to the population; and to evaluate the potential impacts to the biota in the vicinity of the DOE activity.
11. Ensure the analytical work supporting environmental monitoring is implemented using—
 - (a) a consistent system for collecting, assessing, and documenting environmental data of known and documented quality;
 - (b) a validated and consistent approach for sampling and analysis of radionuclide samples to ensure laboratory data meets program-specific needs and requirements within the framework of a performance-based approach for analytical laboratory work; and
 - (c) an integrated sampling approach to avoid duplicative data collection.
12. Develop and implement a program and procedures to maximize the use of safe alternatives to ODS whereby—
 - (a) the procurement of Class I ODS for all nonexcepted uses is discontinued by December 31, 2010 [See Executive Order 13148], and
 - (b) disposal of ODS removed or reclaimed from equipment (including disposal as part of a contract, trade, or donation) is coordinated within DOE and with DoD, and for situations in which the recovered ODS is a critical requirement for DoD missions, the facility transfers the ODS to DoD.

13. Assist the Department with its requirement under Executive Order 13148 by meeting reporting and planning requirements under the Emergency Planning and Community Right-to-Know Act (EPCRA or Title III of Superfund Amendments and Reauthorization Act of 1986), 42 U.S.C. 11001, and the Pollution Prevention Act of 1990, 42 U.S.C. 13101.
14. Assist the Department with its requirement under Executive Order 13327, “Federal Real Property Asset Management”, Section 3(b)(vi), by ensuring incorporation of planning and management requirements for historic property and environmental management.

Approved: 1-15-03
Chg 1: 1-24-05

SUBJECT: ENVIRONMENTAL PROTECTION PROGRAM

1. PURPOSE. To transmit revised pages to DOE O 450.1, *Environmental Protection Program*, dated 1-15-03.
2. EXPLANATION OF CHANGES. To add requirements from Executive Order 13327 "Federal Real Property Asset Management," and incorporates responsibilities for the Office of Legacy Management.
3. LOCATION OF CHANGES.

<u>Pages</u>	<u>Paragraphs</u>
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2	3c(3)
4	5
6	5d(8)
7	5d(13)
9	5f(7)
9	5g
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After filing the attached pages, this transmittal may be discarded.

BY ORDER OF THE SECRETARY OF ENERGY:



KYLE E. McSLARROW
Deputy Secretary