

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

**ORDER**

DOE 5480.2

12-13-82

SUBJECT: HAZARDOUS AND RADIOACTIVE MIXED WASTE MANAGEMENT

1. PURPOSE. To establish hazardous waste management procedures for facilities operated under authority of the Atomic Energy Act of 1954, as amended (AEA). The procedures will follow, to the extent practicable, regulations issued by the Environmental Protection Agency (EPA) pursuant to the Resource Conservation and Recovery Act of 1976 (RCRA). Although Department of Energy (DOE) operations conducted under authority other than the AEA are subject to EPA or State regulations conforming with RCRA, facilities administered under the authority of the AEA are not bound by such requirements.
2. SCOPE. The provisions of this Order apply to all DOE operations conducted under the authority of the Atomic Energy Act of 1954 (42 U.S.C. 2011, et seq.) that result in the generation, transportation, treatment, storage and/or disposal of hazardous waste. In addition, the provisions of this Order apply to all operating and onsite service contractors with contracts that provide for the generation, transportation, treatment, storage, and/or disposal of hazardous waste, and contain contract provisions requiring compliance with this Order. Hazardous waste management at DOE operations conducted under authority other than the Atomic Energy Act of 1954 is covered by DOE 5480.1A.
3. REFERENCES.
  - a. Atomic Energy Act of 1954, 42 U.S.C. 2011, et seq., which authorizes the conduct of atomic energy activities.
  - b. Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901, et seq., which authorizes the Environmental Protection Agency (EPA) to promulgate hazardous waste management regulations.
  - c. 40 CFR 260, "Hazardous Waste Management System: General," which provides general standards for hazardous waste management.
  - d. 40 CFR 261, "Identification and Listing of Hazardous Waste," which identifies and lists hazardous wastes.
  - e. 40 CFR 262, "Standards Applicable to Generators of Hazardous Waste," which provides standards for generators of hazardous waste.
  - f. 40 CFR 263, "Standards Applicable to Transporters of Hazardous Waste," which provides standards for transporters of hazardous waste.

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- g. 40 CFR 264, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," which provides standards for owners and operators of hazardous waste management facilities with permits.
- h. 40 CFR 265, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," which provides standards for owners and operators of hazardous waste management facilities with interim status.
- i. DOE 5480.1A, ENVIRONMENTAL PROTECTION, SAFETY, AND HEALTH PROTECTION PROGRAM FOR DOE OPERATIONS, of 8-13-81, which establishes the Department's environmental protection, safety, and health protection program.
- j. DOE 5700.6A, QUALITY ASSURANCE, of 8-13-81, which sets forth principles and assigns responsibilities for establishing, implementing, and maintaining programs of plans and actions to assure quality achievement in DOE programs.
- ~~k. DOE 5482.1A, ENVIRONMENTAL PROTECTION, SAFETY, AND HEALTH PROTECTION APPRAISAL PROGRAM, of 8-13-81, which presents the Department's policy and requirements for appraisal of environmental protection, safety, and health protection programs.~~
- l. DOE 5484.1, ENVIRONMENTAL PROTECTION, SAFETY, AND HEALTH PROTECTION INFORMATION REPORTING REQUIREMENTS, of 2-24-81, which establishes requirements and procedures for reporting and investigating matters of environmental protection, safety, and health protection significance to DOE operations.
- m. DOE 5484.2, UNUSUAL OCCURRENCE REPORTING SYSTEM, of 8-13-81, which establishes a system for reporting unusual occurrences having programmatic significance.
- n. DOE 5500.2, EMERGENCY PLANNING, PREPAREDNESS, AND RESPONSE FOR OPERATIONS, of 8-13-81, which provides for the coordination and direction of DOE planning, preparedness, and response to operational emergencies involving DOE or requiring DOE assistance.
- o. DOE 5500.3, REACTOR AND NONREACTOR NUCLEAR FACILITY EMERGENCY PLANNING, PREPAREDNESS, AND RESPONSE PROGRAM FOR DEPARTMENT OF ENERGY OPERATIONS, of 8-13-81, which establishes requirements for development of site specific emergency plans and procedures for radiological emergencies at DOE nuclear facilities.

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- p. DOE 5632.1, PHYSICAL PROTECTION OF CLASSIFIED MATTER, of 7-18-79, which prescribes DOE requirements for physical protection of classified matter.
- q. DOE 5632.2, PHYSICAL PROTECTION OF SPECIAL NUCLEAR MATERIAL, of 2-16-79, which establishes minimum physical protection standards for special nuclear materials.
- r. DOE 5820.1, MANAGEMENT OF TRANSURANIC CONTAMINATED MATERIAL, of 9-30-82, which establishes guidelines for the generation, treatment, packaging, storage, transportation, and disposal of transuranic contaminated material. Guidance related to other radioactive contaminated materials is also included.

#### 4. DEFINITIONS.

- a. Atomic Energy Act Facilities are those DOE facilities operated under authority of the Atomic Energy Act of 1954 as amended.
- b. DOE Operations are those activities funded by DOE for which DOE has responsibility for environmental protection, safety, and health protection.
- c. Exemption means a release from the requirements of this Order or any selected requirements of this Order.
- d. Hazardous Waste is waste that is identified or listed in 40 CFR 261. Source, special nuclear material, and byproduct material as defined by the Atomic Energy Act of 1954, as amended, are specifically excluded from the term hazardous waste.
- e. Hazardous Waste Facility means all DOE owned or controlled contiguous land, structures, other appurtenances, and improvements on the land used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (e.g., one or more landfills, surface impoundments, or combinations).
- f. Headquarters Coordinating Team is the group of representatives designated by program Secretarial Officers (see paragraph 4i) and other Headquarters officials created to assist the Assistant Secretary, Environmental Protection, Safety, and Emergency Preparedness (EP-1) in developing policy and guidance for the hazardous waste management program.
- g. Radioactive Mixed Waste is radioactive waste which also contains hazardous waste constituents.
- h. Operating Level is the organization performing the actual work or job related tasks. It may be a contractor performing work for DOE or it may be an element of DOE itself.
- i. Program Secretarial Officer is an outlay program manager and includes the Assistant Secretaries for Conservation and Renewable Energy; Fossil Energy; Nuclear Energy; Defense Programs; Environmental Protection, Safety, and Emergency Preparedness; and the Director of Energy Research.

- j. Radioactive Waste. Solid or fluid materials of no value containing radioactivity; discarded items such as clothing, containers, equipment, rubble, residues or soils contaminated with radioactivity; or soils, rubble, equipment or other items containing induced radioactivity such that the levels exceed safe limits for unconditional release.
  - k. Transuranic (TRU) Contaminated Material is material which, without regard to source or form, contains certain alpha-emitting radionuclides with long half-lives in concentrations greater than 100nCi/g.
  - l. Transuranic Waste (TRU Waste) is TRU contaminated material which has been declared as having no significant economic value or use.
5. BACKGROUND. DOE operations conducted under authority other than the Atomic Energy Act are subject to Environmental Protection Agency or State regulation pursuant to the Resource Conservation and Recovery Act of 1976.
6. POLICY. It is the policy of DOE to:
- a. ~~Protect the environment and the safety and health of the public and DOE and DOE contractor employees by managing operations in a manner to provide for safe handling of hazardous waste generated, transported, treated, stored, or disposed of by those operations.~~
  - b. Promote the recovery of energy and other resources from discarded materials.
  - c. Implement the program in a cost effective manner.
7. RESPONSIBILITIES AND AUTHORITIES. Assurance that DOE hazardous waste is managed in an environmentally acceptable manner is a part of the overall environmental protection, safety, and health protection program as established by DOE 5480.1A. As a supplement to the responsibilities and authorities assigned by DOE 5480.1A, the responsibilities and authorities specific to hazardous waste activities are assigned as follows:
- a. Program Secretarial Officers shall:
    - (1) Assure that funds are provided in the DOE budgets to effectively implement the program.
    - (2) Review and approve the implementation plans prepared by each field organization in accordance with this Order.

- (3) Verify that effective programs are implemented.
- (4) Identify issues and problems regarding hazardous wastes and take required corrective actions.
- (5) Upon request, cooperate with Assistant Secretary for Environmental Protection, Safety, and Emergency Preparedness (EP-1) by providing representation to the Headquarters coordinating team assigned to develop policy and other guidance for hazardous waste activities.
- (6) Take such action as may be appropriate to assure safety, including directing the field office manager to curtail and suspend their operations when, in their opinion, such operation would result in an undue environmental protection, safety, or health protection risk.

b. Managers of Operations Offices shall:

- (1) Define the extent of hazardous waste management activities at Atomic Energy Act facilities under their purview.
- (2) Perform an initial evaluation of all hazardous waste management activities in accordance with Chapter I of this Order.
- (3) Prepare an implementation plan for this Order in accordance with Chapter I, paragraph 1.
- (4) Develop and implement a program to assure that hazardous wastes at facilities for which they are responsible are managed in accordance with the requirements of this Order.
- (5) Document in the implementation plan where full compliance with this Order cannot be achieved due to unique characteristics of the sites and/or facilities under their jurisdiction or due to unrealistically high costs compared to the risks involved. For situations where management of wastes pursuant to this Order would result in an unrealistically high cost compared to the risk involved, alternative methods of handling waste which would provide comparable levels of safety and environmental protection at reduced costs shall be taken, in accordance with the provisions of Chapter I of this Order.
- (6) Submit hazardous waste management reports to EP-1 in accordance with Chapter I, paragraph 2e, with copies to the responsible program secretarial officers.

- (7) Take such action as may be appropriate to assure safety, including curtailment and suspension of operations, when, in their opinion, such operation would result in an undue environmental protection, safety, or health protection risk.

c. The Assistant Secretary, Environmental Protection, Safety, and Emergency Preparedness, shall:

- (1) Provide an independent overview of the status of Departmental compliance with the requirements of this Order and planned corrective action.
- (2) Develop policy and guidance for DOE hazardous waste activities consistent with 40 CFR 260-265, DOE Orders, standards, and guides, as appropriate.
- (3) Conduct appraisals of field organization hazardous waste management programs in accordance with DOE 5482.1A.
- (4) Determine the need for and sponsor research and development efforts to solve generic DOE hazardous waste problems, in conjunction with Headquarters program offices.
- (5) Prepare reports on the status of the Department's compliance efforts and its compliance action plans for the program secretarial officers.
- (6) Reviews field office implementation plans for this Order for consistency and the advisability of site specific exemptions, and advises the cognizant program secretarial officer on the adequacy of the proposed implementation plans. Advises the Under Secretary if, in the opinion of EP-1, the approved implementation plan is significantly deficient and the issue cannot be resolved with the cognizant program secretarial officer.
- (7) Chair the Headquarters coordinating team.



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CHAPTER I

GENERAL HAZARDOUS WASTE PROGRAM REQUIREMENTS

1. IMPLEMENTATION PLAN.

- a. Each operations office shall evaluate its hazardous waste management program for facilities under its jurisdiction and identify all changes necessary to assure that, except as provided in paragraph 1c and 1d below, it complies with the technical, as opposed to the procedural, hazardous waste management requirements of 40 CFR 260-263 and 265. The implementation plan shall further include a plan for bringing facilities into compliance with technical requirements of 40 CFR 264 at the earliest practicable date.
- b. Following the evaluation, the operations office shall determine and document plans, including timetables, to achieve compliance with the requirements of this Order.
- c. Each operations office implementation plan shall identify any extent to which where full compliance with this Order cannot be achieved. In each area where full compliance cannot be achieved, an exemption may be requested based on the unique characteristics of the sites and/or facilities, or unrealistically high costs compared to the risks involved. Any requested exemption must be approved by the cognizant secretarial officer as part of the implementation plan approval, upon a finding by the secretarial officer that the conditions described in page 7, paragraph 7c(7) of DOE 5480.1A have been satisfied.
- d. Each operations office's implementing programs may contain alternatives to those articulated in 40 CFR 260-265. Alternative protective actions or procedures which provide assurance of equal or greater environmental protection, safety, and health protection shall be approved by the operations office manager prior to implementation. Each alternative determination shall be well documented and auditable. A summary of such approved alternatives will be provided in the annual hazardous waste management reports specified in paragraph 2e(3), below.

2. PROGRAM REQUIREMENTS. Hazardous waste management programs shall comply with the standards of 40 CFR 260-265, except as provided for in paragraph 1, above. The programs should include, but not be limited to, the following requirements:

- a. Inspections. Inspections shall be conducted by the operating level, using the requirements of 40 CFR 265.15 or 40 CFR 264.15.



b. Security.

- (1) Access to hazardous waste facilities shall be controlled in accordance with requirements of 40 CFR 265.14 or CFR 264.15.
- (2) Where hazardous waste facilities are located on the same site with radioactive waste management activities, security measures will also comply with DOE 5632.1 and DOE 5632.2, as appropriate.
- (3) The requirements of paragraph 2b(1), above, are satisfied if the facility is located within a site that has controlled access in accordance with 40 CFR 265.14 or 40 CFR 264.15.

c. Personnel Training. Training programs shall be conducted in accordance with the requirements of 40 CFR 265.16 or 40 CFR 264.16.

d. Emergency Response Procedures. Emergency preparedness and response procedures shall be established in accordance with the standards of 40 CFR 265, Subparts C and D or 40 CFR 264, Subparts C and D, DOE 5500.2, and DOE 5500.3.

e. Recordkeeping and Reporting.

- (1) Each facility shall maintain an operating record in accordance with the requirements of 40 CFR 265.73 or 40 CFR 264.73.
- (2) Notification, investigation, and reporting of accidental occurrences shall be conducted in accordance with DOE 5484.1 and DOE 5484.2.
- (3) Annual hazardous waste management reports shall be submitted by the operations offices to EP-1 in accordance with guidelines to be provided.
- (4) EP-1 shall prepare periodic reports of: Departmental compliance status; and compliance action plans. These shall be provided to the Under Secretary and secretarial officers, as appropriate.

f. Transportation System.

- (1) Generators shipping hazardous waste offsite shall utilize the manifest system specified in 40 CFR 265.70-72 or 40 CFR 264.70-72.
- (2) Generators of hazardous waste transported between locations within the same boundary must assure that such wastes are properly identified.
- (3) DOE shipments of hazardous waste when transported shall be in accordance with all applicable transportation laws and regulations.

- g. Waste Analysis. Waste analysis procedures shall be established in accordance with the requirements of 40 CFR 265.13 or 40 CFR 264.13.
  - h. Groundwater Monitoring. Groundwater monitoring systems shall be established in accordance with the standards of 40 CFR 264, Subpart F or 40 CFR 265, Subpart F.
  - i. Closure and Post-Closure. Provisions and plans for closure and post-closure of facilities shall be made in accordance with standards of 40 CFR 265, Subpart G or 40 CFR 264, Subpart G.
  - j. Offsite Treatment, Storage or Disposal. Any offsite treatment, storage, or disposal of hazardous waste will be in accordance with all applicable regulations.
3. INTERFACES WITH ENVIRONMENTAL PROTECTION AGENCY AND STATE OFFICIALS. Interfaces between Department representatives and EPA or State compliance officials shall be in accordance with the DOE/EPA Memorandum of Understanding, copies of this document can be obtained by calling the Office of Operational Safety, Health, and Environment, EP-321, on FTS 233-5684.

## CHAPTER II

### GUIDANCE FOR MANAGING RADIOACTIVE MIXED WASTE

1. INTRODUCTION. This chapter is included as interim guidance pending the issuance of a DOE directive for radioactive waste management. The guidance set forth here applies to those instances where radioactive waste contains hazardous waste constituents.
2. MANAGING RADIOACTIVE MIXED WASTE. To assure an effective program for the management of radioactive mixed wastes, the following guidance shall be observed by the field office manager:
  - a. For high level and transuranic mixed waste, DOE 5820.1 radiological control requirements for handling, packaging, transportation, storage, disposal, and monitoring shall be applied. The field office manager shall verify that these requirements provide adequate protection for the public and the environment from potential hazards which may derive from hazardous characteristics other than radioactivity, and shall impose any additional requirements that will be necessary to achieve such protection.
  - b. For low level radioactive mixed waste, DOE 5820.1 radiological control requirements for handling, packaging, transportation, storage, disposal, and monitoring shall be applied. Additional controls should be applied, as necessary, to assure a degree of protection of the environment and the safety of the public equivalent to that afforded under 40 CFR 260-265.