
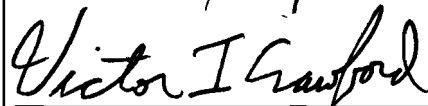


<p>U.S. Department of Energy</p> <p>Office of Independent Oversight</p> <p>Criteria Review and Approach Document</p>	<p>Subject: Radioactive Waste Management, Inspection Criteria, Approach, and Lines of Inquiry</p>  <hr/> <p>Director, Office of ES&H Evaluations</p> <p>Date: 6/22/09</p>  <hr/> <p>Criteria Lead, Radioactive Waste Management</p> <p>Date: 6/19/2009</p>	<p>HS: HSS CRAD 64-33 Rev: 0 Eff. Date: 06/22/2009</p> <p>Page 1 of 8</p>
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1.0 PURPOSE

Within the Office of Independent Oversight, the Office of Environment, Safety and Health Evaluations' (ES&H) 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 and also we are 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 on this WEB page.

Management of the various forms of waste generated at DOE facilities is regulated by Federal, State, and local laws, acts, and regulations; Executive orders and policies; and DOE orders and policies. The collective objective of all these regulations is to protect human health and the environment; and conserve valuable material and energy resources. The objectives are met by managing waste in accordance with relevant technical and administrative requirements and implementing methods to reuse, reduce, eliminate, and produce less harmful hazardous or radioactive waste.

Thus, the basic principles of an effective radioactive waste management program for DOE operations must accomplish the goals of Federal and State laws and regulations and Government and Department policy. The management systems necessary to implement these programs are

complex and should incorporate the guiding principles and core functions of integrated safety management (ISM), conduct of operations, maintenance, engineering, materials handling, occupational safety, radiation safety, criticality safety, chemical safety, and quality assurance. It should be assumed that the requirements of these other programs are incorporated into waste management performance objectives as applicable.

2.0 APPLICABILITY

The following Inspection Criteria document is approved for use by the Office of ES&H Evaluations.

3.0 FEEDBACK

Comments and suggestions for improvements on these Inspection Criteria, Approach, and Lines of Inquiry can be directed to the Director of the Office of ES&H Evaluations on (301) 903-5392.

Radioactive Waste Management 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 management of radioactive wastes and implementation of integrated safety management. The following Inspection Activities apply to all Inspection Criteria listed below:

Inspection Activities: Review radioactive waste management and control processes and implementing procedures. Interview personnel including waste management supervision, staff, and subject matter experts. Review project policies, procedures, and corresponding documentation related to ISM core function and Nuclear Safety implementation.

Inspection Activities: Perform facility/building walk downs and inspections, and observe selected work activities, such as waste treatment, storage and disposal facility operations and transport.

Radioactive Waste Management Planning

Inspection Criteria: Waste management planning is developed and implemented to ensure the protection of site workers, public health and safety, and the environment by ensuring that waste will be properly managed from generation to disposal in accordance with applicable regulations and DOE programs.

Inspection Lines of Inquiry:

- Has a waste management basis been developed for each radioactive waste management facility, operation, and activity? Was the basis reviewed and approved before operations began?
- Does the basis reference or define the conditions under which the facility may operate based on the management documentation; include the applicable elements identified in the specific waste-type chapters of DOE M 435.1-1; and be developed using the graded approach process?
- Has a process been developed and implemented for identifying the generation of radioactive waste with no identified path to disposal, and for reviewing and approving conditions under which radioactive waste with no identified path of disposal may be generated?
- Is planning performed to address the entire life cycle for all radioactive waste prior to waste generation?
- Has the site evaluated Federal and state requirements for mixed waste management under Federal and state regulations and agreements such as the Federal Facility Compliance Act (FFCA), Tri-Party Agreements, and Federal Facility Agreement (FFA)? Are there compliance agreements with the appropriate authorities for any existing violations and are compliance with these requirements documented and commitments implemented?

- Has the site developed and maintained a written quality assurance program (QAP) for all radioactive waste facilities, operations, and activities that takes into account personnel training and qualifications, quality improvement, document and records management, process design, material and service procurement, inspections and acceptance testing, and independent assessments?
- Does planning for new projects define the scope of work for activities and processes such that the potential to generate mixed or radioactive waste is identified to allow applying ISM to the waste management aspects of the project through analysis of the hazards and development of appropriate control?

Radioactive Waste Identification and Characterization

Inspection Criteria: A program is in place to ensure that radioactive waste streams are identified and the physical, chemical, and radiological characteristics of the waste managed at a facility are adequately determined in order to manage the waste in a manner that both protects site workers, the public and the environment, and meets the waste management requirements of DOE, Environmental Protection Agency (EPA), Department of Transportation (DOT), and State and local regulations.

Inspection Lines of Inquiry:

- Does a site-wide program exist and is being implemented that ensures all new radioactive waste streams are identified before the generation of the waste for characterization and determination of a disposal path?
- Are appropriate test methods and/or process knowledge used to determine the regulatory/program status (i.e., high-level, transuranic, or low-level radioactive, etc.) of existing and new waste streams?
- Does characterization data, at a minimum, include physical and chemical characteristics; volume, including any solidification, stabilization or absorbent material; identities, activities and concentrations of radionuclides or source information and specific chemicals of concern, e.g., chlorinated solvents; weight of containers; characterization date; generating source; packaging date?
- Have waste certification programs been developed, documented, and implemented to ensure that the waste acceptance requirements of off- and on-site treatment, storage, and disposal facilities are met?
- Are waste streams re-characterized whenever the production processes generating the waste changes, to meet disposal acceptance requirements, or to meet the requirements of waste certification programs?
- Are the results of waste characterization and generation rates documented and maintained?

Radioactive Waste Accumulation

Inspection Criteria: Waste is accumulated with the intent for further actions (i.e., long-term storage, treatment, disposal or recycle) using the equipment and procedures necessary to ensure a minimum potential for release of contaminants to the environment and exposure to personnel.

Inspection Lines of Inquiry:

- Is the facility meeting standards pertaining to use and management of containers (condition, compatibility, kept closed, markings, quantity restrictions)?
- Are projects that generate waste performed within the established controls for proper management of that waste?

On-Site Waste Management Operations

Inspection Criteria: A program is in place to ensure that on-site waste management (treatment, storage, disposal, and recycling) facilities are operated to minimize the potential for release of contaminants to the environment, and that these operations are performed in accordance with all applicable regulations and DOE programs including ISM.

Inspection Lines of Inquiry:

- Is a formal documented waste management program in place that defines roles and responsibilities for the waste management generators, waste handlers and waste facility operators, and that identifies the requirements and describes both the program and the procedures that the mixed, and radioactive waste operations will follow to meet those requirements in order to comply with waste analysis requirements, to meet regulatory requirements, to protect the public and the environment, and to meet waste acceptance requirements?
- Are methods in place to prevent the unknowing entry, and minimize the possibility for the unauthorized entry of persons or livestock (wildlife) onto the active portion of the radioactive waste treatment, storage, and disposal?
- Are radioactive waste treatment, storage, and disposal facilities designed in accordance with applicable technical standards relevant to the type of waste to be managed?
- Are radioactive waste treatment, storage, and disposal facility operations in compliance with the various applicable technical standards pertaining to the type of equipment and units used?
- Are low-level radioactive waste streams that have an identified path to disposal not being stored for more than 1 year prior to disposal except for storage for decay or otherwise authorized by the Field Element Manager?
- Are radioactive waste storage, treatment, and disposal activities performed in a manner that protects the public, workers, and the environment and in accordance with a radioactive waste management basis?

Monitoring and Inspection Operations

Inspection Criteria: Waste management facilities are monitored in accordance with all applicable regulations and DOE requirements.

Inspection Lines of Inquiry:

- Is containment equipment used for the accumulation, storage, treatment, and disposal of radioactive waste (containers, tanks, landfills, etc.) inspected and monitored as prescribed by regulations?
- Are radioactive waste treatment, storage, and disposal facility operations monitored in accordance with the applicable requirements based on the type of waste (high-level, transuranic, and low-level) managed?
- Does the Field Element Manager ensure radioactive waste management program activities are conducted in accordance with a radioactive waste management basis and meet the requirements for radioactive waste management?

Waste Transportation

Inspection Criteria: Waste is offered for transportation and safely transported using adequate packaging, placarding, marking, and labeling, and means of transport, as well as proper documentation as prescribed by applicable EPA, DOT, DOE, and State regulatory programs. DOE requires the adherence to DOT regulations (or site specific procedures providing equivalent measures of safety) when transporting materials classified as hazardous materials by DOT within site boundaries.

Inspection Lines of Inquiry:

- Are only transporters that are in compliance with EPA (EPA ID No.), DOT (hazmat registered, as applicable) and DOE programs (radioactive) used for waste transportation?
- Are wastes placed in packages and containers in accordance with DOT and applicable transportation regulations?
- Are packages, containers, and vehicles properly marked, labeled, and placarded in accordance with applicable regulations pertaining to the mode of transportation?
- Are appropriate shipping papers (air waybills, dangerous goods declarations, manifests, etc.) prepared and are they complete and correct?
- Has a method been developed for providing emergency response information and phone number for shipments of waste that meet the definition of hazardous material as per DOT regulations, regardless of mode?
- Does evidence exist that indicate the facility has received authorization from the radioactive waste treatment, storage, and disposal facility prior to transferring waste to the treatment, storage, and disposal facility?

Waste Reduction and Minimization

Inspection Criteria: A program is in place to ensure that all wastes are reduced to the greatest extent practical, and that activities related to waste minimization are in compliance with all applicable DOE, other Federal, state, and local requirements.

Inspection Lines of Inquiry:

- Has the site developed and implemented a waste minimization program as part of the DOE-wide annual waste minimization plan, which includes the elements identified in the DOE and EPA guidance documents? Is the program also compliant with the requirements of the Pollution Prevention Awareness Plan and specific substitution and recycling guidelines?
- Is volume reduction and source reduction an integral part of the management of radioactive wastes?
- Has a site recycling coordinator been assigned to implement and maintain waste minimization programs?
- Are all wastes that are potentially amenable to treatment evaluated for treatment as required? Are wastes potentially amenable to recycling evaluated as part of overall site waste management plans?
- Is there is a program for conducting cost-benefit analyses to determine the feasibility of waste minimization and pollution prevention projects?

Training Programs

Inspection Criteria: Training is provided to all personnel associated with the on-site management and transportation of waste to ensure they are competent commensurate with their responsibilities for compliance with the requirements of applicable regulations and DOE programs.

Inspection Lines of Inquiry:

- Have training programs been established that establish an integrated cycle of organizational needs analysis and training planning, needs assessment, resource allocation, design and delivery, evaluation, and reporting processes consistent with DOE program requirements to ensure personnel possess the knowledge, skills, and abilities necessary?
- Have personnel working in or managing treatment, storage, and disposal facility operations successfully completed a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures compliance with applicable regulatory requirements?

Permits, Registrations, Reports, and Notifications

Inspection Criteria: Permits, registrations, reports, and notifications to regulatory agencies are prepared and submitted in accordance with applicable regulations and DOE programs.

Inspection Lines of Inquiry:

- Do facilities that ship waste off site for treatment, storage, or disposal prepared and submitted reports covering those activities to the applicable regulatory agencies as required?
- Does evidence exist that indicates the proper notifications and reports were made within the required time limits to local, state, and federal authorities and the DOE regarding incidents involving accumulation, treatment, storage and disposal facility, and other waste management operations?
- Are facilities in compliance with reporting and notification standards associated with the administration of treatment, storage, and disposal facility permits, e.g., operation changes, compliance schedules, noncompliance status, etc.?

Records Maintenance

Inspection Criteria: A program is in place to ensure that appropriate records are maintained to demonstrate that wastes are managed in an environmentally sound manner, and that record-keeping-related activities are performed in accordance with all applicable DOE, Federal, state, and local requirements.

Inspection Lines of Inquiry:

- Have radioactive waste management facilities developed a records-keeping system consistent with DOE and other regulatory agency requirements?
- Are waste shipping papers maintained at the site for inspection purposes in accordance with applicable requirements?
- Are test results, analyses, or other determinations made to determine regulatory waste status maintained at the facility for at least 3 years from the date that the waste was last sent to an on-site or off-site treatment, storage, and disposal facility?
- Are the technical standards associated with the type of training records to be maintained and for how long for personnel working in waste management roles met?
- Does the facility maintain all records associated with the administration of treatment, storage, and disposal facility permits in accordance with the applicable requirements?