

WASTE MANAGEMENT PROGRAM

1.0 Objective

The objective of this performance assessment is to evaluate the effectiveness of the laboratory's waste management program as implemented in the facility. The Facility Representative or Environmental, Safety, and Health Support Specialist reviews policies, procedures, and programs implemented in the facility to manage waste handling, storage, processing, treatment, and off-site shipment. The Facility Representative or Environmental, Safety, and Health Support Specialist evaluates compliance with requirements from the Environmental Protection Agency as well as the Department of Energy. This assessment guide focuses on management of hazardous and low-level radioactive wastes, although portions of the guide can also be used to evaluate high-level waste, transuranic waste, and radioactive mixed waste management. Assessment activities may include observations of work in progress, interviews with facility and support staff personnel, walkdowns, and reviews of applicable documents.

2.0 Definitions

Concern - A determination of a programmatic breakdown or widespread problem supported by one or more findings or observations.

Finding - An individual item which does not meet requirements.

Functional Area - A discrete group of related safety and support programs.

Lines of Inquiry - Questions that guide the assessor in planning and conducting the performance assessment.

Observation - A condition or practice that does not provide or promote effective protection of the health and safety of the public or DOE's workers or the environment.

Performance Assessment - An evaluation of a program or functional area to verify laboratory line management effectiveness in ensuring the health and safety of the public and of DOE's workers and in ensuring protection of the environment.

Performance Attributes - Key elements, functions, or activities to be assessed in a particular functional area.

3.0 References

- 3.1 DOE 5820.2A, *Radioactive Waste Management*
- 3.2 *Resource Conservation and Recovery Act*
- 3.3 *Toxic Substances Control Act*
- 3.4 29 CFR 1910.120, *Hazardous Waste Operations and Emergency Response*
- 3.5 40 CFR 262, *Standards Applicable to Generators of Hazardous Wastes*
- 3.6 40 CFR 264, *Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities*
- 3.7 40 CFR 266, *Standards for the Management of Specific Hazardous Waste Management Facilities*
- 3.8 40 CFR 761, *Polychlorinated Biphenyls Manufacturing, Processing, Distribution in Commerce and Use Prohibitions.*

4.0 Performance Assessment Activities

The assessor reviews pertinent program documentation including policies, procedures and program plans before beginning the assessment. Appendix A provides a suggested list of documents that the assessor may review during preparation for the assessment.

During the assessment, the assessor evaluates selected performance attributes by developing and using lines of inquiry for each performance attribute. Appendix B provides a listing of suggested performance attributes and lines of inquiry. In applying each line of inquiry, the assessor may complete diverse activities such as reviewing documents, interviewing facility personnel and support staff, observing work activities and performing walkdowns. The assessor may choose to use existing surveillance guides in completing portions of the assessment. The surveillance guides applicable to the Waste Management functional area include:

- ERS 14.1, Satellite Accumulation Areas
- WMS 16.1, Generator and Facility Reporting
- WMS 16.2, Contingency Planning and Emergency Response
- WMS 16.4, Radioactive Materials and Waste Labelling and Storage

The emphasis of this assessment is on the effectiveness of the laboratory's waste management program as implemented in a specific facility. In performing this assessment, the assessor must balance review of site-wide programs, facility-specific policies and procedures, and implementation.

The following questions provide the general framework that should be used in planning, conducting and documenting the assessment:

- Is laboratory management clearly committed to excellence in waste management?
- Do laboratory operations reflect a real commitment to minimizing waste?
- Do programs, policies, procedures, and practices demonstrate full compliance with regulations and DOE requirements governing waste management?
- Are worker safety and health adequately protected during waste management activities?

APPENDIX A
POSSIBLE DOCUMENTS TO BE REVIEWED

Waste Management Plan
Policy on Waste Minimization
Site emergency plan
Individual facility contingency plan
Emergency Plan Implementing Procedures
Inspection Reports
Resource Conservation and Recovery Act Permit
Federal Facilities Compliance Agreement
Waste acceptance criteria

APPENDIX B

PERFORMANCE ATTRIBUTES AND LINES OF INQUIRY

PERFORMANCE ATTRIBUTE: I. The laboratory's waste management program includes necessary management systems and infrastructure to meet DOE's waste management objectives.

LINES OF INQUIRY:

1. Has management issued a policy statement committing the facility to minimizing hazardous and radioactive wastes?
2. Does the policy statement commit the facility to full compliance with applicable environmental standards?
3. Are line management and support organization roles and responsibilities regarding waste management clearly defined?
4. Are specific responsibilities regarding waste management, waste minimization, and compliance included in job descriptions, performance standards, and performance appraisals for the facility manager, supervisors and workers?
5. Are personnel held accountable for performance relating to waste management through performance appraisals?
6. Has management established goals for reducing the amounts of waste generated and for improving waste management?
7. Are appropriate performance indicators monitored to evaluate waste minimization and management goals?
8. Has the site or facility prepared an annual Waste Management Plan?
9. Is the Waste Management Plan updated at least annually?
10. Has line management defined waste management activities that are subject to a quality assurance program?
11. Does the waste management program include appropriate provisions for preparing, reviewing, approving, retaining, and managing records?

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PERFORMANCE ATTRIBUTE: II. Management has committed required budgetary and staff resources to implement the waste management program.

LINES OF INQUIRY:

1. Are activities to improve waste management and minimize waste generation identified and included as separate line items in the facility's budget?
2. Have adequate provisions been made for funding the waste management program?
3. Are sufficient staff resources committed to the waste management program?
4. Have qualification standards been established for personnel with responsibility for implementing the waste management program?
5. Do current personnel meet established qualification standards?
6. Do personnel responsible for waste management programs receive ongoing professional development training and appropriated re-training?
7. Have personnel whose actions affect production of hazardous or radioactive wastes received training on waste minimization techniques?

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PERFORMANCE ATTRIBUTE: III. Management has established an effective self-assessment program to promote continuous improvement in waste management.

LINES OF INQUIRY:

1. Has line management established and implemented a program to perform periodic self-assessments of the waste management programs at the facility?
2. Do self-assessments cover all significant elements of the waste management program?
3. Are deficiencies, areas for improvement, and areas of excellent performance reported to management?
4. Does management perform a timely review of deficiencies or potential areas for improvement and assign priorities to corrective actions?
5. Are planned corrective or improvement actions tracked until implemented?
6. Does line management conduct routine walkthroughs of assigned facilities to verify implementation of the waste management program and to evaluate worker adherence to waste minimization practices?

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PERFORMANCE ATTRIBUTE: IV. The laboratory is implementing effective programs to characterize and certify wastes.

LINES OF INQUIRY:

1. Is an inventory sheet maintained for each waste package that provides a physical description of material placed in the package?
2. Are all wastes generated handled, processed, or disposed of at the facility characterized so that the radiological and hazardous components of wastes are known?
3. Is the characterization program for wastes subject to appropriate quality assurance controls?
4. Are waste characterization activities performed in such a manner as to maintain radiation doses ALARA?
5. Are laboratory instruments used in characterizing wastes subject to routine calibration?
6. Are wastes appropriately classified as RCRA hazardous wastes, low-level radioactive wastes, transuranic wastes, high-level wastes, or mixed wastes based on results from characterization activities?
7. Do documents maintained with the waste, including manifests and travelers accurately reflect the results of waste characterization?
8. Are wastes labeled in accordance with results from characterization analyses?
9. Does an administrative control mechanism exist to ensure that waste streams are re-tested as necessary to ensure accuracy in the results, including re-characterization after production processes change?

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PERFORMANCE ATTRIBUTE: V. The laboratory maintains effective control over satellite and temporary accumulation areas to minimize the potential for release of contaminants to the environment.

LINES OF INQUIRY:

1. Are administrative controls in place to limit the quantity of hazardous wastes in a satellite accumulation area to less than 55 gallons of non-acutely hazardous waste or one quart of acutely hazardous wastes?
2. Are actual quantities of hazardous wastes located in satellite accumulation areas less than 55 gallons of non-acutely hazardous waste or one quart of acutely hazardous wastes?
3. Do administrative controls provide for transfer of wastes from the satellite accumulation area to either a 90-day storage area or a permitted or interim status hazardous waste management unit within three days of exceeding 55 gallons of non-acutely hazardous waste or one quart of acutely hazardous wastes?
4. Are containers in satellite accumulation areas closed except when it is necessary to add or remove wastes?
5. Are containers used for storing hazardous wastes made of or lined with materials that will not react with hazardous materials being stored?
6. Are containers in satellite accumulation areas clearly marked with the words "Hazardous Waste" or otherwise to identify the content of the containers?
7. Are containers of hazardous wastes in satellite accumulation areas in good shape with no evidence of damage or leaking?
8. Are regular inspections conducted of temporary accumulation areas?

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PERFORMANCE ATTRIBUTE: VI. Treatment, storage, and disposal facilities for hazardous wastes are operated so as to minimize the potential for releases to the environment and to ensure compliance with DOE and statutory requirements.

LINES OF INQUIRY:

1. Has the laboratory or the site defined acceptance criteria for wastes to be treated, processed, handled, stored, or disposed of?
2. Is waste received at the laboratory certified as meeting the waste acceptance criteria?
3. If waste does not conform to the certification criteria, is the waste returned to the originating facility?
4. Has the laboratory conducted audits or surveillance on the facility shipping waste to the treatment, storage, or disposal facility to verify certification practices?
5. Are reports documenting audits or surveillances including approval status, observations, and findings prepared and transmitted to the generator?
6. Does each treatment, storage, or disposal facility maintain an operating record that identifies wastes volumes received, processed, treated, and/or disposed of?
7. Are regular inspections of treatment, storage and disposal areas conducted to identify deficient conditions?
8. Do inspections include visual examinations to identify malfunctions, deterioration, operator errors, and discharges that may cause or could lead to releases of dangerous wastes to the environment or that could threaten human health?
9. Are inspectors trained to identify or does inspections guidance require inspectors to identify the following:
 - a. Remains of waste containers, labels, or other waste management equipment.
 - b. Solid waste disposal sites not previously identified for remedial action.
 - c. Temporary or permanent activities that could generate uncontrolled waste forms.
 - d. Uncontrolled waste containers.
 - e. Unpermitted waste discharges.
10. Are results from regular inspections entered into the facilities' operating log or otherwise tracked?

11. Are releases or non-compliances that are not required to be reported immediately to the state documented in the operating record within 2 working days of when the event occurred?
12. Do personnel operating or overseeing treatment, storage, and disposal facilities have appropriate training for their particular job functions?

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PERFORMANCE ATTRIBUTE: VII. The laboratory has implemented programs, policies, and procedures to minimize the amounts of waste generated.

LINES OF INQUIRY:

1. Has the laboratory established and implemented a program to assure that the amount of low-level waste generated and/or shipped for disposal is minimized?
2. Does the waste minimization program include goals, incentives, procedures, and routine reports to management?
3. Are uncontaminated wastes separated from low-level wastes to minimize the quantity of low-level wastes?
4. Are sources of contamination such as leaking valves or removable contamination eliminated to reduce the potential for contaminating wastes?
5. Are tools and materials decontaminated when feasible to reduce the amount of low-level wastes?
6. Is the laboratory effectively applying volume and source reduction techniques to minimize waste generation?

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PERFORMANCE ATTRIBUTE: VIII. The laboratory has established an effective contingency plan and implemented a program to ensure that the facility can respond to an emergency and mitigate the accident, protect workers, and take actions and provide recommendations to protect the public.

NOTE: In evaluating this performance attribute, the Assessor will have to examine both the site emergency plan and the contingency plan prepared for the building. The assessor should be especially sensitive to overlap, conflict, or lack of clarity in the relationship between the two documents.

LINES OF INQUIRY:

1. Have a detailed contingency plan and associated implementing procedures been developed for the laboratory?
2. Have incident response procedures been established for the laboratory if it is a Treatment, Storage, or Disposal Unit?
3. Do contingency plan implementing procedures provide for notifying personnel in the laboratory of an emergency?
4. Does the laboratory contingency plan and implementing procedures provide for immediate verbal reports to the state for any release of dangerous waste or hazardous substances or any non-compliance with the RCRA permit that may endanger human health or the environment?
5. Do procedures ensure that the following information is provided to the state in any verbal reports:
 - a. Name, address and telephone number of the permittee responsible for the release or non-compliance?
 - b. Name, location and telephone number of the unit where the release occurred?
 - c. Date, time and type of incident?
 - d. Name and quantity of material(s) involved?
 - e. Extent of injuries (if any)
 - f. Assessment of actual or potential hazards to the environment and human health.
 - g. Estimated quantity of material released during the event.
 - h. Actions taken to mitigate the event.
6. Do the contingency plan implementing procedures provide for notification of DOE, state and local officials?
7. Do contingency plan implementing procedures include provisions for identifying the character,

- source, amount and areas affected by releases of materials?
8. Have the roles and responsibilities of the Building Emergency Director been established in the contingency plan and the implementing procedures?
 9. Have appropriate arrangements for emergency response support been made with local police, fire departments, hospitals, and emergency response teams?
 10. Do plant personnel know how to reach the Building Emergency Director and what to do if he or she is not available?
 11. Has the Building Emergency Director been trained on his/her duties, responsibilities, and authority?
 12. Is the Building Emergency Director thoroughly knowledgeable of the contingency plan, operations of the facility, locations and characteristics of wastes handled, location of key documents and records and the general layout of the facility?
 13. Does the contingency plan identify all emergency equipment to be used in responding to an event including alarms, communication equipment, fire extinguishing systems, spill control equipment, and decontamination equipment?
 14. Is all equipment identified in the contingency plan in place and operable?
 15. Are regular inspections or testes conducted to verify that equipment identified in the contingency plan is in place and operable?
 16. Does the contingency plan include an evacuation plan?
 17. Do laboratory personnel know the evacuation signal and where they are to assemble?
 18. Are evacuation routes shown on maps in the contingency plan?
 19. Are evacuation routes identified in the contingency plan unobstructed, are emergency exits marked, and are they free from hazards?
 20. Are assembly areas for accountability identified in the contingency plan?
 21. Are assembly areas posted as such?
 22. Are the contingency plan and implementing procedures distributed to key managers, operations personnel, and support organizations?
 23. Is effective control maintained over the distribution of the contingency plan and implementing procedures?

24. Have controlled copies of the contingency plan been distributed to organizations that may support emergency response such as police departments, fire departments and local hospitals?
25. Is the contingency plan maintained current with changes to the facility, processes, or on-site hazards?

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PERFORMANCE ATTRIBUTE: IX. Facilities that handle, process, or store Polychlorinated biphenyls (PCBs) or PCB-contaminated wastes have implemented programs, policies, and procedures to comply with applicable requirements of the Toxic Substances Control Act.

LINES OF INQUIRY:

1. Does the facility maintain signed copies of manifests for PCB wastes generated, stored, or disposed of at the facility? (Applies to facilities with ≥ 45 kg of PCBs or PCB containers, or one or more PCB transformers containing ≥ 500 ppm PCB, or more than 50 capacitors that contain 3 or more pounds of PCBs)
2. Does the facility prepare and maintain an annual document log showing detailed information on the total amount of waste PCBs and the number of PCB items shipped from or received by a facility during a calendar year?
3. Has the facility prepared and submitted to the Environmental Protection Agency an annual report summarizing the information in the annual document log and on waste manifests?
4. Have administrative controls been established to ensure that the facility prepares an exception report and submits the report to the Environmental Protection Agency if the facility ships PCB wastes to a commercial storage or disposal facility and does not receive a signed copy of the manifest from the storage or disposal facility within 45 days?
5. Have administrative controls been implemented to ensure preparation and submittal to the Environmental Protection Agency of one-year exception reports when PCB waste stored for disposal has exceeded the one-year time limit?
6. Do facility procedures or the facility's contingency plan require notification to the National Response Center for releases of one pound or more of PCBs over a 24-hour period?
7. Do facility procedures or the facility's contingency plan require notification of the Environmental Protection Agency Regional Office, Pesticide and Toxic Substance Branch for spills of > 10 pounds of PCBs?
8. Do facility procedures require that cleanup of spills of PCBs commence within 24 hours of the spill?

9. Do spill response procedures include provisions to (1) mark the area where the spill occurred; (2) restrict access; (3) post warnings; (4) record and document the area of the spill; (5) clean up all visible traces of fluid on hard surfaces; and (6) remove all visible traces of the spill on soil and other media?
10. Are administrative controls implemented to ensure that PCBs and PCB items are not stored in temporary storage facilities for more than 30 days?
11. Do administrative controls preclude storage of liquids with a PCB concentration greater than 500 ppm from being stored in a temporary storage facility?
12. Are administrative controls implemented to ensure that waste PCBs, PCB items, and dielectric fluids are shipped to an approved disposal facility within nine months of being declared wastes?
13. Do PCB storage facilities conform to the following design requirements specified in 40 CFR 761.65(b)?
 - (1) Facility has an adequate roof and walls.
 - (2) Facility has a floor that minimizes penetration of PCBs.
 - (3) Facility has at least a six-inch high curb to contain spills.
 - (4) There are no openings, expansion joints, or drains that would permit liquids to flow out of the curbed area.
 - (5) The facility is located at or above the 100-year flood elevation.
14. Are PCBs and PCB items stored in temporary storage facilities or in PCB storage facilities inspected for leaks at least once every 30 days?
15. Are PCBs and PCB items stored on pallets adjacent to a PCB storage facility checked for leaks weekly?
16. Are all PCB items, including PCB containers, PCB articles, or equipment containing PCBs labeled with the PCB mark?
17. Is the PCB mark displayed in a prominent location at each point of access to PCB storage areas and at the means of access to transformer locations containing one or more PCB transformers?
18. Are all PCB containers, PCB articles, and equipment containing PCBs in PCB storage facilities labeled to identify the date that the item was removed from service?

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PERFORMANCE ATTRIBUTE: X. The laboratory has implemented programs, policies, and procedures to ensure that waste manifests meet applicable requirements.

LINES OF INQUIRY:

1. Are waste manifests for hazardous and low-level radioactive wastes prepared by the generator before hazardous wastes are sent off-site?
2. Does the generator sign and date the original manifest?
3. Does the primary transporter sign and date the waste manifest and provide copies to the generator?
4. Are manifest and other documents for record retention legible?
5. Does documentation with wastes identify the waste package surface dose rates?
6. Have administrative controls been established for shipments of hazardous wastes so that the facility contacts the designated receipt facility or the transporter within 35 days if a copy of the manifest showing receipt of the shipment has not been received?
7. Are copies of manifests for shipments of hazardous wastes retained for at least three years?
8. Do waste manifests for low-level radioactive waste include the following?
 - (a) Waste physical and chemical characteristics
 - (b) Quantity of each major radionuclide present
 - (c) Weight of the waste
 - (d) Volume of the waste
 - (e) Other data demonstrating compliance with waste acceptance criteria
9. For Treatment, Storage, and Disposal facilities, have procedures and processes been established to reconcile discrepancies between waste manifests and the actual materials and wastes received at the facility?
10. Do administrative procedures require the laboratory to notify the state in writing within 15 days if discrepancies between waste manifests and shipments received cannot be reconciled?
11. Do administrative procedures at treatment, storage and disposal facilities provide for submitting a report to the state within 15 days of receipt of any unmanifested dangerous waste shipments?

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PERFORMANCE ATTRIBUTE: XI. An effective program for periodic inspections has been implemented for RCRA permitted and interim status container storage areas.

LINES OF INQUIRY:

1. Are inspections conducted weekly of containers and container storage areas to detect leaking containers, faulty equipment, or deteriorating containment systems?
2. Has a written schedule for inspections been prepared?
3. Is the facility completing inspections identified on the written schedule?
4. Are records of inspections maintained for a minimum of three years from the date of the inspection?
5. Do records of inspections identify the date and time of the inspection, the name of the inspector, a summary of observations, and the date and nature of repairs or remedial actions to correct deficiencies?
6. Are deficiencies identified during inspections of RCRA permitted and interim status storage areas promptly corrected?
7. Do conditions in the storage area closely match conditions described in the most recent inspection report?
8. Have repairs or remedial action items documented in inspection reports been made?

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PERFORMANCE ATTRIBUTE: XII. The laboratory conducts an effective program of sampling, analysis, and monitoring to ensure compliance with the requirements of the site RCRA permit.

LINES OF INQUIRY:

1. Are samples that are collected representative of the process, wastes, or hazardous materials that are being sampled?
2. Are instruments used for monitoring processes, wastes, or the environment routinely calibrated?
3. Are records of instrument calibrations maintained?
4. Are appropriate quality assurance practices utilized in performing analyses of samples?
5. Are approved methods used for performing laboratory analysis of samples?
6. Are records maintained for each sample, identifying the following:
 - a. Name, title, and affiliation of person performing the sampling?
 - b. Dates analyses of samples were performed?
 - c. Name, title, and affiliation of person who performed the analysis of samples?
 - d. Analytical techniques used in performing analysis?
 - e. Results of the analysis?

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PERFORMANCE ATTRIBUTE: XIII. A system has been implemented to manage shipment and receipt of waste in accordance with DOE, federal and state requirements.

LINES OF INQUIRY:

1. For on-site shipment of waste from a generator to a treatment, storage, or disposal facility, does the generator receive approval from the receiving facility before waste is shipped?
2. For shipments of waste from off-site, does DOE approve the proposed shipment before it is approved by the receiving facility?
3. For shipments of waste from off-site, is a formal approval to ship the waste issued by the on-site receiving facility before waste is shipped?
4. Do shippers of waste certify that they meet the receiving facility's waste acceptance criteria before waste is shipped?
5. Is accurate information regarding each container of waste received at the facility contained in the Site Waste Identification and Tracking System?
6. Has the laboratory established effective programs for low-level waste, including assays, inspections, reviews, etc. that ensure the facility does not accept waste in the following forms:
 - a. Contains free liquid in excess of one percent of the volume of the waste?
 - b. Capable of deterioration or explosive decomposition or reaction at normal pressures and temperatures?
 - c. Undergoes explosive reaction with water?
 - d. Capable of generating toxic gases, vapors, or fumes harmful to personnel handling the wastes?
 - e. Pyrophoric wastes?
 - f. Waste in gaseous form with a packaging pressure above 1.5 atmospheres, or any that may exceed 5 atmospheres during (?)?
 - g. Non-regulated free organic liquids?
7. Has each generator of low-level waste passed a formal compliance assessment of their laboratory's waste certification program within the last year?

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PERFORMANCE ATTRIBUTE: XIV. Each facility that generates low-level radioactive waste has established a formal program to certify that the waste meets waste acceptance criteria established by facilities that will receive the waste for treatment, storage, or disposal.

LINES OF INQUIRY:

1. Does the certification program encompass characterization methodology and sampling protocols, calibration of instruments, documentation, and recordkeeping?
2. Is waste designated by an individual who is knowledgeable of the current waste regulations governing waste designation requirements?
3. Does the program include positive controls over the content of waste packages such as locking packages with tamper-proof seals, controlling access to storage areas and inventory sheets for each package?
4. Do procedures provide for appropriate segregation of wastes into non-radioactive and non-regulated; radioactive and non-regulated; non-radioactive and regulated; and radioactive and regulated?
5. Are procedures established for packaging wastes to ensure that packages meet requirements of the package safety documentation and regulatory requirements?
6. Do procedures include requirements to ensure that waste generating processes produce as little radioactive and/or dangerous waste as possible?
7. Has the facility implemented a quality assurance program to ensure waste shipments meet waste acceptance criteria?
8. Does the facility's quality assurance program include essential elements including non-conformance reporting, procurement controls, process controls, and periodic surveillances?
9. Has the facility established training requirements to ensure personnel handling wastes prior to shipment are trained on appropriate requirements?
10. Does the facility maintain adequate records of employee training to demonstrate compliance with training requirements?

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PERFORMANCE ATTRIBUTE: XV. Packages containing waste for storage or disposal ensure that wastes are effectively isolated from the environment.

LINES OF INQUIRY:

1. Do low-level waste packages provide at least two containment barriers to prevent release of contamination?
2. Are packages used for storage of low-level waste designed to withstand the weight of two layers of 55-gallon drums stacked on top of the package (454 kg in each drum)?
3. Are packages used for disposal of low-level wastes designed to withstand the weight of three layers of 55-gallon drums stacked on top of the package (454 kg in each drum)?
4. Are actual weights of containers stacked on top of low-level waste containers in storage less than the weights they are designed to withstand?
5. Are packages used for disposal of low-level wastes constructed of metal or treated with fire-retardant materials?
6. Are void spaces within the waste packaging reduced as much as practical?
7. If the package contains liquids bound by absorption, is the quantity of absorbent material sufficient to absorb twice the volume of liquid potentially present?