

NRC INSPECTION MANUAL

NMSS/DWM

INSPECTION PROCEDURE 84850

RADIOACTIVE WASTE MANAGEMENT - INSPECTION OF WASTE GENERATOR REQUIREMENTS OF 10 CFR PART 20 AND 10 CFR PART 61

PROGRAM APPLICABILITY: 2561, 2600 and 2800

84850-01 INSPECTION OBJECTIVE

To determine whether the licensee has established and is maintaining adequate management-controlled procedures and quality assurance that reasonably ensure compliance with the requirements of 10 CFR Part 20 and 10 CFR Part 61 applicable to low-level radioactive waste form, classification, stabilization, and shipment manifests/tracking.

84850-02 INSPECTION REQUIREMENTS

02.01 Management Controls. Review the licensee's written procedures for radioactive waste processing, specifically identifying the primary documentation thereof. Verify that the following aspects are adequately addressed:

- a. That the individual(s) and organizational entities that have been assigned the responsibility for radioactive waste processing for low-level land burial have been clearly designated in writing;
- b. That there has been a clear delineation of the authorities and responsibilities of those individuals and organizational entities;
- c. That written management-approved instructions have been established to carry out the various radioactive waste processing and packaging activities, including authorized changes thereto, and the promulgation/distribution of such instructions to the appropriate line/staff organization.

02.02 Quality Assurance (QA). Verify that the licensee has established and maintains an adequate QA program to ensure compliance with the waste classification and characterization requirements of 10 CFR 61.55 and 61.56. Verify whether the QA program includes the required audits and management evaluation of such audits. Review the results of the most recent audit and corrective actions [Subsection III.A.3 of Appendix G to 10 CFR Part 20].

For nuclear power plant licensees, QA activities related to implementation of 10 CFR Part 61, 10 CFR 20.2006, and Appendix G to 10 CFR Part 20 are not required to be included under the licensee's corporate level QA program for "Nuclear Safety Related" items.

02.03 Waste Manifests. Review the licensee's procedures and records to verify that each shipment of radioactive waste intended for offsite disposal to a broker or a licensed land disposal facility is accompanied by a shipment manifest that includes all the required information [10 CFR 20.2006(b) and (c)].

02.04 Waste Classification. Review the licensee's documentation and records of activities that have been established and are being maintained, to ensure that all low-level radioactive wastes are properly classified according to 10 CFR 61.55. Verify whether such efforts reasonably ensure that a realistic representation has been accomplished [Subsection III.A.1 of Appendix G to 10 CFR Part 20].

02.05 Waste Form and Characterization. Review the licensee's documentation and records of activities, which have been established and are being maintained, to ensure that all low-level radioactive waste meets the waste characteristics of 10 CFR 61.56. Verify whether the methods and determinations of the licensee provide reasonable assurance that the waste form requirements are met [Subsection III.A.1 of Appendix G to 10 CFR Part 20].

02.06 Waste Shipment Labeling. Review the licensee's procedures and records to verify that each package of radioactive waste intended for shipment to a licensed land disposal facility is labeled, as appropriate, to identify it as Class A, B, or C waste in accordance with the classification criteria of 10 CFR 61.55 [10 CFR 61.57 and Subsection III.A.2 of Appendix G to 10 CFR Part 20].

02.07 Tracking of Waste Shipments. Review the licensee's procedures and records, to verify that a system has been established to forward to recipients or deliver to waste collectors, at the time of shipment, a copy of the waste manifest. Verify that acknowledgment of receipt of the manifest is obtained. Verify that the licensee has a procedure in place to effect an investigation in any instances wherein acknowledgment of receipt of shipment has not been received within the specified period. Verify that procedures are in place to report such investigations to the appropriate NRC Regional Office and file the required written report. [Subsection III of Appendix G to 10 CFR Part 20].

02.08 Disposal Site License Conditions. Review the licensee's procedures and records to verify that the applicable disposal site license conditions are being met. Verify that the licensee has on file a current version of the disposal site license.

84850-03 INSPECTION GUIDANCE

Guidance for inspectors as well as licensees has been provided by Low Level Waste Management Branch (NMSS) in the form of branch technical positions (BTPs) on "Waste Classification," dated May 1983 (see Federal Register, Vol. 48, No. 110, June 7, 1983), and "Waste Form," dated January 1991 (see Federal Register, Vol. 56, No. 18, January 28, 1991). In addition to the BTPs, NMSS has stated publicly (48 FR 40512, Vol. 48, No. 175, Sept. 8, 1983) that "topical reports" of licensees that have been reviewed by NMSS may be useful in demonstrating compliance with the requirements. Inspectors should be aware of and be prepared to accept results referenced in such topical reports as demonstration of compliance in specific inspection cases.

03.01 Specific Guidance

- a. Inspection Requirement 02.01, Management Controls. Inspection effort should be directed at verifying that written procedures have been established in a manner approved by management. The procedures should be readily available to any persons having responsibility for low-level waste classification and preparation for transfer of such wastes to land disposal facilities. The inspector should confirm that

the written procedures include provisions for all of the applicable activities pertaining to Section 84850-02 requirements.

- b. Inspection Requirement 02.02, Quality Assurance (QA). The written operating procedures and QA procedures of the licensee collectively are intended to accomplish compliance with the 10 CFR Part 20 and 10 CFR Part 61 regulatory requirements. The nature and scope of the licensee's QA program will vary depending on the nature and complexity of the specific waste stream. Inspectors should observe whether the program and procedures are effective in causing the licensee to perform the required waste form classification and characterizations when changes to the waste stream occur.
- c. Inspection Requirement 02.03, Waste Manifests. Inspectors should be aware that it is permissible for the licensee to use the same shipping paper documents that are required to meet U.S. Department of Transportation shipping paper and U.S. Environmental Protection Agency hazardous waste requirements, as the waste-manifest, provided that the combined documentation contains all of the information required by Appendix G to 10 CFR Part 20. Additional waste manifest information may also be required by the operator of the land disposal facility.
- d. Inspection Requirement 02.04, Waste Classification. The inspector should review whether the method used by the licensee is adequate to determine radionuclide concentrations, in order to classify his waste. The NMSS BTP on waste classification describes four acceptable methods for classifying wastes. The inspector should use this BTP as his basic guidance in implementing this inspection requirement.
 - 1. For those licensees who use correlation factors for classifying wastes, correlation factors should be based on actual waste stream analysis.
 - 2. Generic pressurized water reactor (PWR), boiling-water reactor (BWR) or facility scaling factors are acceptable if actual sample analysis data correlate with the generic data base.
 - 3. If generic scaling factors are not appropriate for an individual waste stream, scaling factors should be based on the specific waste stream data.
 - 4. It is acceptable to base correlation factors on a single set of analyses, repeated annually.
 - 5. If sample analyses have not been completed, calculational methods for scaling factors are acceptable while analyses are in progress. Samples should be off site for analysis to be considered in progress. After receipt of the sample analyses, calculational methods may continue to be used provided the results correlate with the actual sample analyses.
 - 6. NRC-approved topical reports for waste classification are acceptable for demonstrating compliance with 10 CFR 61.55.
- e. Inspection Requirement 02.05, Waste Form and Characterization. The inspector should determine the test methods and acceptability of such tests used by the licensee to characterize his waste stream. In cases where a "high integrity container" is used to stabilize the waste, the type and acceptability of the specific container should be verified. The inspector should use the NMSS BTP on waste form as his basic guidance in implementing this inspection requirement. In addition:

1. Classes B and C solidified waste programs should contain test data on compressive strength, leaching, irradiation stability, biodegradation, and thermal stability. Results of tests should be consistent with the BTP on waste form. Test data packages that do not address all of the above areas may be acceptable, provided that testing is under way to complete the data package. A schedule for completion of the testing should be available for NRC inspection. Solidification media currently being used (cement, vinyl-ester-styrene, asphalt) are acceptable waste forms for shipment and burial, provided that qualification testing is in progress and there are procedures and controls in use to ensure the consistent production of waste capable of existing as a free-standing monolith.
 2. The licensee's solidification process control program should incorporate the testing information from the solidification agent stability qualification.
 3. NRC-approved topical reports on high integrity containers and solidification agents are acceptable for demonstrating compliance with 10 CFR 61.56(b).
 4. A Certificate of Compliance issued by a State for a high integrity container is acceptable for demonstrating compliance for waste shipped to that State.
- f. Inspection Requirement 02.06, Waste Shipment Labeling. Inspectors as well as the licensee should be aware that Classes A, B, & C wastes bear no relationship to Types A or B packaging for transport purposes under 49 CFR Part 173 or 10 CFR Part 71. The labeling of waste packages pursuant to this requirement is, therefore, in addition to any other package markings and labels required by the transport regulations.
- g. Inspection Requirement 02.07, Tracking of Waste Shipments. Inspectors should be aware of the differences in the requirements of Appendix G to 10 CFR Part 20 on waste manifest tracking for shipments by generators to waste collectors, as opposed to shipments directly to land disposal facilities. There are also some differences in the specific requirements of a waste collector who processes the waste before shipping it to the disposal facility, as contrasted with a collector who simply stores the material before transferring it to the land disposal facility.

84850-04 REFERENCES

04.01 Regulations

10 CFR Part 61

10 CFR 20.1001 - 20.2402

04.02 Other References

Federal Register, Vol. 48, No. 110, June 7, 1983, NRC Notice, "Low-level Waste Licensing Branch Technical Position Papers on Radioactive Waste Classification and Waste Form; Availability."

Federal Register, Vol. 56, No. 18, January 28, 1991, NRC Notice, "Staff Technical Position on Radioactive Waste Form; Availability."

"Technical Position on Radioactive Waste Classification," mailed to all NRC licensees on May 11, 1983, by NMSS, Low-level Waste Management Branch.

"Waste Form Technical Position Paper, Revision 1," mailed to all NRC licensees on January 24, 1991, by NMSS, Low-level Waste Management Branch.

Federal Register, Vol. 48, No. 175, Sept. 8, 1983; NRC Notice "Topical Reports in Support of the Implementation of Waste Classification and Waste Form Requirements."

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