

ATTACHMENT 83502.02

INSPECTABLE AREA: Radioactive Material Processing And
Transportation

CORNERSTONE: Public Radiation Safety

INSPECTION BASIS: This inspection procedure evaluates aspects of the radioactive material processing and transportation program for which there were significant performance findings identified via the NRC baseline inspection program or from Licensee Event Reports (LERs). The licensee's radioactive material processing programs are required by Criterion 60 of Appendix A to 10 CFR Part 50 and must comply with the requirements of 10 CFR Parts 20 and 61.

LEVEL OF EFFORT: Inspection resources will be dependent on the nature of the performance findings, on the number of program areas affected by the findings, and on the level of review necessary to evaluate the findings.

83502.02-01 INSPECTION OBJECTIVES

01.01 To identify the root causes for significant findings identified during the baseline inspection program or from LERs concerning the radioactive material processing and transportation program.

01.02 To evaluate the extent of significant findings in this inspection area and the adequacy of licensee's actions to correct the identified problems.

83502.02-02 INSPECTION REQUIREMENTS

02.01 Inspection Planning and In-Office Inspection

- a. Review corrective action documents concerning the identification of problems with the radioactive material processing and transportation program. Evaluate the licensee's root cause analysis to determine if common causes were identified and if corrective actions appear to address the root causes.
- b. Review the licensee's Process Control Program (PCP) and audits of the radioactive waste management program.

02.02 Management Controls for Waste Processing

If significant findings were identified concerning waste processing controls:

- a. Interview the applicable members of the quality assurance organization and review several audits and field assessments to verify that identified deficiencies are documented and resolved. Verify that the licensee's quality assurance program includes audits and management evaluation of such audits to ensure compliance with the waste classification and characterization requirements of 10 CFR 61.55 and 61.56.
- b. Review the licensee's oversight and control of the performance of contracted activities. Evaluate the licensee's review of vendor procedures and systems used to solidify and process radioactive wastes.
- c. Determine if the licensee has communicated the results of industry lessons learned to its workers.
- d. The licensee's PCP is intended to ensure compliance with the 10 CFR Part 20 and 10 CFR Part 61 regulatory requirements. Ensure that the program is comprehensive in its scope to ensure the required waste form classifications and characterizations of the waste stream are performed. Verify that the program accounts for changes in the waste stream due to changes in plant operating parameters (i.e., increased reactor coolant activity due to leaking fuel or changes in clean-up system methodology).
- e. Verify that the PCP accurately describes the licensee's program for processing low level radioactive waste. This includes meeting the waste classification and characterization requirements of 10 CFR Part 61.
- f. Verify that procedures required by the PCP are approved and implemented in accordance with licensee requirements and are readily available to persons having responsibility for radioactive waste processing activities.
- g. Review the licensee's program that ensures stability for wastes which require stabilization (i.e., Class B and C wastes). Determine if the licensee's program is consistent with NRC guidance (HPPOS-290 and Branch Technical Position "Waste Form Technical Position, Revision 1").

02.03 Waste Characterization

If significant findings were identified concerning the characterization of solid waste for disposal:

- a. Review the licensee's requirements contained in its PCP. Verify that the licensee's implementing procedures are consistent with those requirements.
- b. Review the licensee's procedures for sampling and evaluating each of the applicable waste streams. Ensure that the procedures contain provisions for representative sampling of the waste stream (e.g., sufficient mixing of vessels to prevent stratification, adequate purge times of sample lines, obtaining composite samples, etc.). Does the licensee perform independent, duplicate sampling at a specified frequency to verify the adequacy of its waste stream sampling techniques?
- c. Review the licensee's evaluation of vendor data for annual/biennial "10 CFR 61" analyses. Does the licensee compare its laboratory results to the vendor's reported analytical results? Review the licensee's methods for resolving disagreements between the analytical results. When possible, discrepancies should be resolved via additional sampling and analysis. If the licensee "adjusts" the analytical results, verify that there is a documented technical justification for the factors.
- d. Review the licensee's evaluation and trending of waste stream compositions. If the waste stream composition is not stable, does the licensee understand why the waste stream composition changed? Based on the lack of stability, has the licensee evaluated the adequacy of its waste stream sampling frequency?
- e. If the licensee uses scaling factors to determine the concentration of hard-to-measure radionuclides, review the licensee's method of ensuring that the wastes packaged for disposal are adequately represented by the chosen scaling factors. For several waste shipments, review the gamma isotopic analysis of the waste shipments and compare the results to the scaling factor data used by the licensee. If the ratios are significantly different (factor of 10), the waste may not be adequately characterized (refer to HPPOS-081).
- f. Often licensees "blend" waste streams into a single waste package. Verify that the blending is consistent with NRC guidance contained in the Branch Technical Position.
- g. Review the licensee's reactor coolant radio-chemical results and contamination survey results. Verify that the composition of radionuclides is consistent with the licensee's routine waste stream analyses. If not, review the licensee actions to ensure that the waste streams are adequately characterized.

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RESOURCE ESTIMATE

The estimated resources to complete this attachment is 15-60 hours.

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