INSPECTION PROCEDURE 86750

SOLID RADIOACTIVE WASTE MANAGEMENT AND TRANSPORTATION OF RADIOACTIVE MATERIALS

PROGRAM APPLICABILITY: 2515

SALP FUNCTIONAL AREA: PLANT SUPPORT (SOPLTSUP)

86750-01 INSPECTION OBJECTIVES

01.01 To determine whether the licensee properly processes, packages, stores, and ships radioactive materials.

01.02 To provide for identification of potential public health and safety problems resulting from the processing, packaging, and shipment of low-level radioactive waste (LLRW) for disposal and from the transportation of other radioactive materials.

86750-02 INSPECTION REQUIREMENTS

02.01 Audits and Appraisals; Effectiveness of Licensee Controls

a. Review results of audits performed by or for the licensee since the last inspection and evaluate the adequacy of the licensee's corrective actions. In particular, review those audits conducted to meet the applicable Technical Specification (TS), and 10 CFR Parts 20, 61, and 71 requirements for processing LLRW, and for packaging and shipping LLRW and other radioactive materials. Determine whether the reviewed audits have been conducted in accordance with plant requirements.

b. Review management evaluations of audits conducted as part of the quality control program to ensure compliance with 10 CFR §§ 61.55 and 61.56 [in accordance with 10 CFR 20.2006(d) and § III.A.3 of Appendix F to 10 CFR Part 20 §§ 20.1001-20.2402]; and, as applicable, those audits conducted to meet 10 CFR 71, Subpart H requirements. Determine whether management response was timely and appropriate.

c. Evaluate the effectiveness of licensee controls in the area of processing and shipment of solid LLRW and transportation of other radioactive materials by reviewing pertinent issues,

events, or problems identified or addressed during the inspection.

d. Determine whether there are strengths or weaknesses in the licensee's controls for the identification and resolution of the reviewed issues

that could degrade plant operations or safety.

02.02 Changes

a. Review major changes since the last inspection in organization, personnel, facilities, equipment, programs, and procedures that may affect solid LLRW waste management and transportation of radioactive materials.

b. Evaluate the effects of any changes on program effectiveness.

02.03 Training and Qualifications of Personnel

a. Review the applicable education, experience, qualifications and training of selected employees of the licensee (and its contractors) that are responsible for processing, testing, storage, and shipping (including certification) of LLRW and transportation of other radioactive materials.

b. Determine if the licensee has provided training and periodic retraining in the DOT and NRC regulatory requirements, the waste burial license requirements, and in the instructions and operating procedures for all personnel involved in the transfer, packaging and transport of radioactive waste.

c. Determine if the licensee has provided training and periodic retraining to those employees of the licensee (and its contractors) who operate the processes that generate radioactive waste to ensure that the volume of waste is minimized and is processed into acceptable chemical and physical form for transfer and shipment to a LLRW burial facility.

d. Determine if the licensee has incorporated the results of "lessons learned," as a result of any violations and corresponding corrective action which may have occurred since the last inspection, into lesson plans for employees who operate low-level waste processing equipment or for personnel involved in the transfer, packaging and transport of radioactive material.

02.04 Implementation of the Solid Radioactive Waste Program

a. Determine if the licensee has up-to-date copies of DOT, NRC and the competent state authority regulations and up-to-date copies of the licenses of all facilities to which the licensee ships radioactive materials or wastes.

b. Determine if the licensee has provided management approved, detailed instructions and operating procedures for all personnel involved in the transfer, packaging and transport of low-level radioactive waste with special attention given to controls on the chemical and physical form of the radioactive material and on the containment integrity of the packaging. Determine if the licensee has identified (preferably in writing) those individuals authorized to

certify LLRW shipments in accordance with Section II of Appendix F to 10 CFR 20.1001-20.2402.

c. Determine the adequacy of the bases for the licensee's certifications under Section II of Appendix F to 10 CFR 20.1001-20.2402 that wastes intended for eventual disposal at a land disposal facility are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation. Determine that the Class B and Class C wastes have been shown to be structurally stable, in accordance with the requirements of 10 CFR 61.56(b). Verify that the licensee is using up-dated and audited procedures when scaling factors or correlation factors are used to quantify the concentration of hard-to-measure radionuclides in materials or for classification of wastes.

02.05 Shipping of LLRW for Disposal, and Transportation of other Radioactive Material

a. Determine whether shipments made by the licensee are in compliance with the NRC and DOT regulations.

b. Determine the adequacy of licensee actions in response to notices of non-compliances from DOT or other competent state authorities, if applicable.

86750-03 INSPECTION GUIDANCE

03.01 Audits and Appraisals; Effectiveness of Licensee Controls

a. Limit the review to a selected sample of required audit reports issued since the last inspection. Look particularly for those audits that probe for programmatic weaknesses and assess program quality.

Include one or more audits of LLRW processing, and LLRW and radioactive material transportation activities. Focus upon licensee followup actions for identified deficiencies. Are root cause analyses performed, as appropriate? Are corrective actions timely and technically acceptable?

Requirements for reviews and audits normally are contained in the TSs. Audit teams should include someone with experience or training commensurate with the scope, complexity, or special nature of the activities audited. (Regulatory Guide 1.146 and ANSI/ASME N45.2.23-1978, Section 2.2). In addition, for shipments of LLRW or radioactive materials made in NRC certified packages and which are not exempted by § 71.10 from the requirements of 10 CFR Part 71, audits are necessary to meet the quality assurance requirements of 10 CFR Subpart H, §71.137.

b. Based on a review of selected quality assurance/quality control (QA/QC) records of surveillances for shipments made since the last inspection, note the percentage of shipments

having surveillances and compare the frequency to that committed to by the licensee in plant operating procedures.

For one or two shipments made since the last inspection, review licensee guidance used to determine the licensee's waste form and classification. Are the scaling factors used for these shipments based on actual waste stream analysis? Additional guidance for implementing this inspection requirement can be found in the Branch Technical Position (BTP) on Waste Form for 10 CFR Part 61.

Based on the licensee's records of one or two shipments of waste requiring processing prior to shipment for disposal, does the processed waste meets the waste form stability requirements of 10 CFR Part 61.56 and was this waste as processed using a quality control program as required by 10 CFR 20.2006(d)? Guidance for implementing this inspection requirement can be found in the BTP on Waste Form.

c. Reports of other audits, appraisals, assessments, evaluations (including audits of vendor services), etc., may provide information on program quality. Include review of radiological events/incidents in the licensee's system for reporting and followup on these items. Institute of Nuclear Power Operations (INPO) reports are routinely reviewed by the resident inspector as required by inspection procedure 71707. Results of INPO report findings can be obtained from the resident inspector. All INPO report information shall be treated in accordance with the guidance stated in inspection procedure 71707.

When safety issues, events, or problems are reviewed, the adequacy of the results of licensee controls may be assessed by determining how effective the licensee was in performing the following:

1. Initial identification of the problem.

2. Elevation of problems to the proper level of management for resolution (internal communications and procedures).

3. Disposition of any operability issues.

4. Implementation of corrective actions.

5. Expansion of the scope of corrective actions to include applicable related systems, equipment, procedures, and personnel actions.

d. The determination of whether there are strengths or weaknesses in the licensee's controls will be limited to those issues, events, or problems reviewed in detail. The evaluation will not draw sweeping conclusions about the licensee's overall control programs but will be very specific in identifying any licensee strengths or weaknesses encountered with the individual items reviewed.

NOTE: For additional inspection guidance on licensee controls, refer to IP 40500, Effectiveness of Licensee controls in Identifying, Resolving, and Preventing Problems."

03.02 Changes

a. By observation and discussion with cognizant supervisory and management personnel, determine whether the changes to staff, facilities, equipment, programs, and procedures have affected (positively or negatively) the licensee's program for control of solid waste and transportation activities. Are changes in accordance with 10 CFR 50.59?

b. Are workers aware of and do they understand the changes, as evidenced by observation and discussion?

03.03 Training and Qualifications of Personnel

a. Requirements for training and qualifications of the power plant staff typically are contained in the Administrative Controls section of the plant TSs. Additional NRC requirements are discussed in IE Bulletin No. 79-19. DOT requirements for training "hazmat employees" are contained in 49 CFR Part 172 Subpart H (see Information Notice No. 92-72, dated October 28, 1992).

b. Select individuals who have joined the organization since the last inspection (including contractor personnel) and who are involved in the processing, storage, and shipment of solid LLRW wastes for disposal or are otherwise involved in the transportation of licensed radioactive materials. Examine records of training dates, attendees, and subject material. Based on direct observation and discussion with the selected individuals, do they have minimum knowledge of processing, packaging, storage, and shipment of radioactive materials?

The following general guidance concerns the impact of the new training rule, 10 CFR 50.120, on inspections of training.

1. No supervisory, managerial, or technical staff are covered. Radwaste operators (who are "non-licensed operators") and health physics technicians (radiological protection technicians") are covered. Contractors are not covered unless they occupy regular positions performing independently within the licensee's organization. If short-term contractors are assigned to work independently, they must be qualified to perform their assigned tasks.

2. The training rule covers qualification only in the sense of job task qualification, not qualification based on pre-selection criteria. Furthermore, successful completion of a training program required by the rule does not obviate the need to comply with other training or qualification requirements imposed by other regulations and/or licensee conditions.

c. Inspect the training area for cause. When a performance deficiency could be related to a training program problem, examine the training area in sufficient depth to determine if and why inadequate training contributed to the performance problem. Verify that lessons learned have been incorporated into the applicable training program areas.

03.04 Implementation of the Solid Radioactive Waste Program

Is there an adequate basis for the licensee's program that ensures stability for waste requiring stabilization? An adequate basis for certification of structural stability of Class B and Class C wastes includes any one of the following:

a. Documentation that the wastes were processed, controlled and stored in accordance with procedures that are described in NRC-approved vendor topical reports on waste form solidification media or high integrity containers. (The reports in question should address qualification testing of the product, not just the process description).

b. Documentation that the wastes were processed, controlled and stored in accordance with procedures that were qualified through a licensee's testing program equivalent to that described in the most recent version of the NRC Technical Position on Waste Form. The documentation should include evidence that tests equivalent to those called out in the BTP were conducted and that the associated acceptance criteria and other provisions in the BTP were satisfied.

c. Documentation that the wastes were processed, controlled, and stored in accordance with procedures. If procedures were modified by the licensee, under 10 CFR 50.59, determine the acceptability of the modifications via inspection of the licensee's records of the changes, including the safety evaluation for each change, to ensure that the changes did not result in a product that does not possess the long-term structural stability required by 10 CFR 61.56(b)(1).

In the event the licensee's program has not received NRC approval through the NRC topical report program and the inspector requires additional technical assistance, the Regional Office is to forward the available relevant information to the Director, Division of Low-Level Waste Management and Decommissioning, Office of Nuclear Material Safety and Safeguards, with a request for the assistance needed.

03.05 Shipping of LLRW for Disposal, and Transportation of Other Radioactive Materials

a. For a selection of several LLRW or radioactive material shipments, does the licensee meet the applicable NRC and DOT requirements, including NRC's general license requirements (e.g., 10 CFR 71.12)? NRC and DOT share responsibility for regulating the transportation of radioactive materials within the United States. NRC regulations for the transportation of

radioactive materials are codified in 10 CFR Part 71, "Packaging and Transportation of Radioactive Materials." DOT's hazardous materials regulations, which include radioactive material, are codified in 49 CFR Parts 100-199. A provision in the NRC regulations, 10 CFR 71.5, requires that NRC licensees comply with DOT's hazardous material regulations. For shipments of LLRW or other low level radioactive materials using NRC-certified packages and which are not exempted by § 71.10 from the 10 CFR Part 71, verify that the licensee has implemented the requirements, as applicable, of 10 CFR 71, subparts C, G and H.

From direct observation of packaging and shipping activities in progress (if possible), review of appropriate records, and from discussions with responsible licensee staff, are the following transportation program activities adequate:

1. Radiation and contamination surveys of packages and vehicles (10 CFR 173.441 and 173.443).

2. Shipping paper documentation (49 CFR Part 172, subpart C).

3. Package marking and labeling (49 CFR Part 172, subpart D; and §§ 172.400-407 and 172.436-440.)

4. Loading and storage, blocking and bracing of packages.

5. Vehicle placarding and driver's instructions, when required.

6. Notifications to state agencies, when required.

7. Emergency response information (49 CFR 172, subpart G).

   Once per year during the backshift while a licensee's radioactive material shipment is in transit, call the licensee's emergency response number listed on the shipping paper and determine whether the licensee can provide, in a timely manner, the emergency response information, required by DOT requirements specified in 49 CFR 172.600-172.604. The specific contents of the emergency response information that must be provided are described in 49 CFR 172.602. Requirements for the 24-hour emergency response telephone number are described in 49 CFR 172.604 and include the following:

   (a) The number must be monitored at all times while the hazardous material is in transit.

   (b) The number must be the number of a person who is either knowledgeable of the hazardous material being shipped, and has comprehensive emergency response and incident mitigation information, or who has immediate access to such a person.

   (c) The number must be entered on the shipping paper.

All emergency response information required by DOT regulations must be accurately provided on shipping papers or other documents, and the licensee must be prepared to respond promptly with the information needed, when called. Emergency responders will expect the licensee to remain on the line until the information needed has been provided. As general guidance, emergency responders will also expect this information to be provided within 15 minutes.

For additional background information on this requirement, see NRC Information Notice 92-62, August 24, 1992.

8. For shipments of LLRW and other radioactive materials using NRC-certified packages and which are not exempted from 10 CFR Part 71 by §71.10, has the licensee implemented, as applicable, the appropriate requirements specified in 10 CFR 71 Subparts C, G and H?

9. Compliance with the shipper/carrier registration requirements of 49 CFR Part 107 Subpart G (see Information Notice 92-72, dated October 28, 1992).

b. Based on a review of records and reports, was there any incident in which there was a substantial reduction of the effectiveness of packaging? Did the licensee take prompt and adequate corrective actions, based upon some reasonable root cause analysis, to prevent a recurrence?

86750-04 INSPECTION RESOURCES

Completion of this inspection procedure is expected to take, on average, approximately 20 hours of direct inspection on site for a single unit site. Multi-unit sites are expected to require an additional 8 hours of direct inspection for each additional unit.

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