INSPECTION PROCEDURE 84900

LOW-LEVEL RADIOACTIVE WASTE STORAGE

PROGRAM APPLICABILITY: 2600 and 2800

84900-01 INSPECTION OBJECTIVES

To determine whether fuel cycle and materials licensees who store low-level radioactive waste (LLRW) are doing so safely and in accordance with license conditions. This procedure may be applied to any licensee who stores LLRW, regardless of when the storage facility was established. It is important to note that LLRW storage may be discretionary for business or process management considerations or non-discretionary because of lack of disposal capacity or other disposition pathway. The requirements of this procedure are separate from and in addition to those of Inspection Procedure 84850, which addresses the establishment and maintenance of procedures and quality assurance with respect to the waste form, classification, stabilization and manifest requirements of 10 CFR Part 20 and 10 CFR Part 61.

84900-02 INSPECTION REQUIREMENTS

02.01 Management Controls and Surveys. Determine whether the procedures for placement, inspection and repackaging of LLRW are clear and available to all who need to use them, and that they have been approved by management. Confirm that inspections and surveys of stored LLRW have been performed at the required frequency and properly documented, and that the licensee has conducted and properly documented all required effluent sampling. Review the results of inspections and surveys of LLRW in storage focusing on licensee follow-up actions to problems identified. Check the licensee's records on LLRW storage, determine whether the records provide accountability and determine how long LLRW has been in storage. Confirm that the licensee is within authorized possession limits. Confirm that any required checks of fire protection systems have been performed.

02.02 Adequacy of Storage Area. Confirm that LLW is stored in a restricted area (or in accordance with the requirements of 10 CFR Part 20 Subpart I) and is secured against unauthorized removal. Check that waste containers are visible to allow routine inspection and that they are readily accessible to licensee personnel. Confirm that the

placement or stacking of containers is stable and that containers are not deformed under load, or likely to fall. Determine that "as low as reasonably achievable" (ALARA) considerations are used in the placement of the higher activity waste containers in the storage area. Check that the storage area is posted in accordance with Part 20 requirements.

Confirm that the containers are protected from reasonably expected environmental conditions, including fire and flooding, and that the storage location is not subject to extremes of temperature or humidity (i.e., near a boiler room, laundry area, etc.). Check ventilation of the storage area to determine if it is sufficient to prevent build-up of any gases produced by waste decomposition.

02.03 Package Integrity and Labeling. Examine a representative number of packages for signs of swelling, leakage, deformation or deterioration (i.e., rusting or other corrosion which may lead to breach).

Check to determine that the licensee's packages are clearly and properly labeled in accordance with 10 CFR 20.1904 and 20.1905 and that low level radioactive waste is transferred or disposed in accordance with 10 CFR 20.2006.

84900-03 INSPECTION GUIDANCE

General Guidance

Some licensees already have LLRW storage facilities. Depending on the specific situation of a State or Compact, LLRW may be in storage for anywhere from several months to several years. In general, because the safety hazard of LLRW storage facilities--especially for dry LLRW storage—is generally low, extensive inspection efforts are not warranted. The inspection effort, therefore, should be geared toward assuring that licensees who are storing LLRW for such periods are in compliance with possession limits and license conditions, and do not develop an "out-of-sight, out-of-mind" attitude. This will best be done by examining the licensee's records to ensure that the required surveys, inspections and accountability checks are being done and then following up with a physical examination of the storage area and waste containers/packages.

If possession of increased quantities of LLRW necessitates the implementation of increased controls (Order EA-05-090) and the Order imposing fingerprinting and criminal history records check requirements (Order EA-07-305), verify licensee's program and procedures for such implementation.

If a licensee's circumstances are likely to necessitate a request for increased possession limits which could, in turn, lead to the imposition of EA-05-090 and EA-07-305, the inspector should ensure that the licensee is compiling necessary documentation and provide guidance to the licensee regarding the process for providing documentation to NRC staff.

Specific Guidance

03.01 Management Controls and Surveys. Review the license file and identify any special authorizations and requirements for LLRW storage. Determine where LLRW is being stored. Review how long the LLRW has been stored (with respect to its general physical condition) and examine the licensee's accountability and security procedures for the waste. Determine whether the licensee is within the authorized possession limits. Review the licensee's procedures for safe placement, inspection and repackaging of LLRW in storage. Determine whether or not the licensee has conducted and properly documented: (1) inspections of LLRW packages to assure they maintain integrity; (2) radiation surveys of individual packages and the storage area, in general;(3) any required effluent sampling; (4) plans for curtailment or modification of activities that generate LLRW (IN 89-13); (5) plans and strategies for disposition of various waste streams (NUREG 1556); (6) if applicable, implementation of increased controls and order imposing fingerprinting and criminal history records check requirements; and (7) qualifications of persons responsible for management of stored waste (if different from qualifications for other radioactive material management). Review the licensee's records for waste placed in storage, and determine whether they are adequate to account for the LLRW stored.

03.02 Adequacy of Storage Area. Inspect the storage area(s) to assure its adequacy with respect to:

a. Access control and security.

b. Access to, and housekeeping around, waste packages. Adequate lighting should be provided to permit identification of unsafe radiological and non-radiological conditions.

c. Stable placement of waste or waste packages.

d. Protection from environmental elements, fire and flooding, avoidance of temperature/humidity extremes, and ventilation considerations. Inspection should include, as appropriate, the verification of presence of fire/smoke detection alarms and/or suppression equipment.

e. Adequacy of materials (packaging, packing material, sorbents etc.) and equipment (scaffolding, shelving, fork lifts, cranes etc.) necessary for waste storage operations.

f. Adequacy of electrical and mechanical systems necessary for storage operations.

g. Effluent management (prevention, detention, collection, and processing).

h. Posting and labeling.

03.03 Adequacy of Storage Area Infrastructure/Environment. Note the relationship and juxtaposition of LLRW storage to other activities both related and unrelated to LLRW storage. These may include both licensed and unlicensed activities and/or facilities that may impact the adequacy of certain structures to accommodate stored LLRW (e.g. storage of LLRW in outbuildings near other, unrelated facilities that are controlled by someone other than the licensee). Storage structures are likely to vary and include permanent buildings, outbuildings, sheds, sea vans, etc. The adequacy of storage structures to accommodate long-term storage of LLRW can depend significantly on the surrounding activities and environment.

03.04 Package Integrity and Labeling. Examine several waste packages to determine whether the packages are adequate for the expected term of storage. Determine whether the type of packaging maintains its package integrity and that the packages are properly labeled. Examine integrity of package handling considerations such as slings, hooks, and pallets. Examine evidence of incipient package deterioration; evidence of fading or marring of marking and labels.

84900-04 REFERENCES

NRC Information Notice No. 89-13, "Alternative Waste Management Procedures in Case of Denial of Access to Low-Level Waste Disposal Sites," February 8, 1989.

NRC Information Notice No. 93-50, “Extended Storage of Sealed Sources,” July 9, 1993.

NRC Regulatory Issue Summary 2008-12, “Considerations for Extended Interim Storage of Low-Level Radioactive Waste by Fuel Cycle and Materials Licensees,” May 9, 2008.

NRC, Order Imposing Increased Controls, EA 05-090, November 14, 2005.

NRC, Order Imposing Fingerprinting and Criminal History Record Checks Requirements for Unescorted Access to Certain Radioactive Materials, EA 07-305, December 5, 2007.

NUREG 1556, “Consolidated Guidance About Materials Licenses,” November 2001 et seq.

END

Attachment 1
Revision History for 84900

Commitment Tracking Number	Issue Date	Description of Change	Training Needed	Training Completion Date	Comment Resolution Accession Number
N/A	12/22/08 CN 08-037	Completed 4 year historical search and found no commitments. Added references related to Increased Control Order and Fingerprinting and Criminal History Order and qualifications of waste storage personnel. Added several additional factors related to adequacy of storage area, storage infrastructure, and storage environs; Added additional package handling considerations. Deleted "Resource" discussion.	none	N/A	ML081980823