

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555-0001

December 30, 2008

**NRC REGULATORY ISSUE SUMMARY 2008-32
INTERIM LOW LEVEL RADIOACTIVE WASTE STORAGE AT REACTOR
SITES**

ADDRESSEES

All holders of operating licenses for nuclear power reactors, including those that have permanently ceased operations, and for research and test reactors.

INTENT

The U.S. Nuclear Regulatory Commission (NRC) is issuing this regulatory issue summary (RIS) to clarify the current NRC staff position regarding the long-term, interim storage of low level radioactive waste (LLRW) at facilities licensed under Title 10, Part 50, "Domestic Licensing of Production and Utilization Facilities," of the *Code of Federal Regulations* (10 CFR) and to provide an acknowledgement, with certain conditions, of the proposed NEI/EPRI Guidelines for Operating an Interim On-Site Low-Level Waste Storage Facility, Final Draft, April 2008.

As of July 1, 2008, LLRW generators in 36 States are no longer able to ship Class B and C LLRW to a disposal facility. Therefore, facilities in those States will have to store their Class B and C LLRW for an indeterminate amount of time. Since 1981, NRC has issued a number of generic communications containing information related to interim LLRW storage. This RIS will consolidate relevant information and clarify past positions. This RIS requires no action or written response on the part of the addressees.

BACKGROUND INFORMATION

The Low Level Radioactive Waste Policy Act of 1980 made States responsible for disposing of LLRW generated by commercial entities within their State. The Act also encouraged the States to form regional compacts. To date, there are 10 Compacts and all but 7 States are a member of a compact. The States that are not affiliated with a compact are Maine, Massachusetts, Michigan, New Hampshire, New York, North Carolina, and Rhode Island. The Low-Level Radioactive Waste Policy Amendments Act of 1985 established milestones, penalties and incentives for States or regional compacts to develop their own low-level waste disposal facilities. Currently, there are three operating LLRW disposal facilities in the United States, located in Barnwell, South Carolina (Barnwell), Clive, Utah (Clive) and Richland, Washington (Richland). LLRW is defined in 10 CFR 61.2. Per 10 CFR 61.55, LLRW is classified as Class A, B, or C. Class A waste makes up approximately 99 percent of the LLRW and has the lowest level of radioactivity. Class A waste usually consists of slightly contaminated paper products and clothing, rags, mops, equipment and tools, and filters with low levels of radioactivity. While

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Class B and C waste makes up approximately one percent of the LLRW, it has a higher level of radioactivity. Class B and C usually consist of materials such as filters, resins, and irradiated hardware.

The Clive facility only accepts LLRW in waste Class A. All LLRW generators in the United States may ship Class A waste to Clive for disposal, subject to waste acceptance criteria and some compact constraints. The Richland facility only accepts Class A, B and C LLRW from waste generators in the Northwest Compact (WA, OR, ID, MT, UT, WY, AK, and HI) and the Rocky Mountain Compact (NV, CO, and NM). As of July 1, 2008, the Barnwell facility will only accept Class, A, B, and C LLRW generated in States that are members of the Atlantic Compact (SC, NJ, and CT).

SUMMARY OF ISSUE

Since July 1, 2008, LLRW generators in the District of Columbia, the Commonwealth of Puerto Rico, the U.S. Territories, and in the 36 States not part of the Atlantic, Northwest or Rocky Mountain Compacts have no available disposal facility for their Class B and C waste. These LLRW generators will now have to store the LLRW on-site for an indeterminate amount of time.

Previous Information

Since 1981, the NRC has issued a number of generic communications providing information for storing LLRW on licensees' sites. The following is a summary of documents that specifically address interim storage of LLRW on reactor sites.

Generic Letter (GL) 81-38, "Storage of Low-Level Radioactive Wastes at Power Reactor Sites": The NRC issued GL 81-38 in November 1981 as a result of a reduction in the availability of waste disposal in the United States when three disposal sites permanently closed. GL 81-38 informed licensees that if the on-site LLRW storage capacity was to be increased, then the licensee must perform an evaluation under the provisions of 10 CFR 50.59, "Changes, tests, and experiments." If an unreviewed safety question was identified as a result of the evaluation, then the licensee was to apply to the NRC for a license under the provisions of 10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material." GL 81-38 stated that the 10 CFR Part 30 license was for the administrative convenience of the Commission and was not intended to be substantively different than an application for amending the 10 CFR Part 50 license. The 10 CFR Part 30 license would be issued for a 5-year term and could be renewed for additional 5-year terms if the need for on-site LLRW continued. GL 81-38 also provided guidance to be used in the design, construction and operation of the LLRW storage facility.

GL 85-14, "Commercial Storage at Power Reactor Sites of Low-Level Radioactive Waste Not Generated by the Utility": The NRC issued GL 85-14 in expectation that no new LLRW disposal facilities would be available for several years. GL 85-14 provided guidance for licensee requests to store LLRW at reactor sites, including storage of LLRW generated elsewhere. GL 85-14 stated that, as a matter of policy, the NRC is opposed to any activity at a nuclear reactor site which is not generally supportive of activities authorized by the operating license or construction permit and which may divert the attention of licensee management from its primary task of safe operation or

construction of the power reactor. Accordingly, GL 85-14 determined that interim storage of LLW within the exclusion area of a reactor site, as defined in 10 CFR 100.3(a), was subject to NRC jurisdiction regardless of whether or not the reactor was located in an Agreement State. GL 85-14 reiterated that a Part 30 license is required for LLRW storage and that an amendment to the 10 CFR Part 50 license may also be required. GL 85-14 described the criteria a licensee application for LLRW storage must meet, including a determination by the utility licensee that the proposed LLRW commercial storage activities do not involve a safety or environmental question, and that safe operation of the reactor will not be affected.

Information Notice (IN) 89-13, "Alternative Waste Management Procedures in Case of Denial of Access to Low-Level Waste Disposal Sites": The NRC issued IN 89-13 in February 1989 to address the possibility of restrictions for disposing of LLRW, particularly for licensees in Vermont, New Hampshire and Michigan. IN 89-13 also provided suggestions on ways to minimize possible adverse consequences of interim storage by minimizing the waste generated on-site. Suggested actions included evaluating potential safety problems and technical difficulties arising from long term storage, reviewing ways to minimize waste generation, and reviewing alternative waste management and disposal methods.

SECY-94-198, "Review of Existing Guidance Concerning the Extended Storage of Low-Level Radioactive Waste" (ML071640462): SECY-94-198 consolidated previous staff guidance and clarified that 10 CFR Part 50 licensees no longer have to apply for a 10 CFR Part 30 license to store LLRW because they are already authorized under Part 30, within the limits of their Part 50 operating licenses, to possess and store LLRW on-site.¹ In the event that the storage of LLRW was not within the limits of a given facility operating license, SECY-94-198 stated that the licensee should seek to amend its Part 50 license. For power reactor licensees, SECY-94-198 also eliminated the five-year limit for on-site storage of LLRW generated at the site. SECY-94-198 also clarified that a 10 CFR 50.59 evaluation was not required for LLRW storage in those instances where no changes in the facility or procedures as described in the safety analysis report are involved. The paper also stated that LLRW should be stored safely and that containers for interim long term storage of LLRW should be compatible with the waste type and possible environmental factors to prevent container corrosion. Additionally, the LLRW should be stored in such a manner as to prevent potential gas generation from processes such as radiolysis, biodegradation, or chemical reaction.

On-site Storage Considerations

Since July 1, 2008, licensees in 36 States have had to store their Class B and C waste on-site. The operation of a licensee's on-site LLRW storage facility must comply with the requirements in 10 CFR Part 20, "Standards for Protection Against Radiation," including 10 CFR 20.1801, "Security of Stored Material," which requires that licensed materials stored in controlled or unrestricted areas be secured from unauthorized removal or access. Also, under Part 20 requirements, licensees storing LLRW on reactor sites for an indefinite period of time must

¹ SECY-94-198 noted that "commercial storage of [LLRW] generated by other licensees on the reactor site would still require a separate Part 30 license for the operation of that facility."

ensure that, in connection with such LLRW storage, occupational doses are as low as is reasonably achievable and that doses to individual members of the public are within regulatory limits. In addition, licensees must ensure that the storage of LLRW has been accounted for in their Part 20 radiation protection programs, including meeting the requirements for surveys and monitoring, labeling, and reports and record retention.

When evaluating interim long-term on-site LLRW storage, Part 50 licensees must consider the applicability of the general design criteria listed in Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50, specifically Criteria 61, 63 and 64. Criterion 61, "Fuel Storage and Handling and Radioactivity Control," specifies that fuel storage and handling, radioactive waste and other systems that may contain radioactivity shall be designed to assure adequate safety under normal and postulated accident conditions. Criterion 63, "Monitoring Fuel and Waste Storage," states that appropriate systems shall be provided in fuel storage, radioactive waste systems, and associated handling areas to (1) detect conditions that may result in loss of residual heat removal capability and excessive radiation levels and (2) to initiate appropriate safety actions. Criterion 64, "Monitoring Radioactivity Releases," specifies that there must be a method for monitoring the level of radioactivity in effluent release pathways and to the plant environs.

In 2007, the NRC revised NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," in anticipation of receiving new reactor license applications. While NUREG-0800 was revised and updated in anticipation for new license applications, it is also used by staff during license amendment reviews for operating plants. Chapter 11.4, "Solid Waste Management System," specifies the information that NRC staff has determined should be included in a Construction and Operating License Application. Appendix 11.4-A, "Design Guidance for Temporary Storage of Low-Level Radioactive Waste" provides specific guidance to licensees for increasing on-site LLRW storage capacity.

Proposed EPRI Guidelines

In May 2008, the Nuclear Energy Institute submitted the draft report, "Guidelines for Operating an Interim On-site Low Level Radioactive Waste Storage Facility, Final Draft, April 2008," prepared by the Electric Power Research Institute. This report, known as the Guidelines Report, includes guidance for licensees on recordkeeping, waste containers and waste forms, monitoring and inspecting, and on combining Class B and C waste into greater than Class C (GTCC) waste for extended on-site storage for LLRW. With the exception of the section on combining B and C class waste into GTCC, the NRC staff finds the guidelines to be consistent with NRC information contained in this RIS and other NRC guidance such as NUREG-0800. The Guidelines Report provides an acceptable method for recordkeeping, determining waste forms and waste containers and monitoring and inspecting the interim long-term storage of LLRW. While NRC has indicated that volume reduction of LLRW is generally appropriate, NRC has not developed a position on combining Class B and C waste together to form GTCC waste.

Summary

With the access to Barnwell now being limited to only licensees in States that are members of the Atlantic Compact, clarification of applicable NRC information was appropriate. This RIS consolidates relevant information on interim long-term storage of LLRW. Of note, Part 50

licensees do not have to obtain a separate Part 30 license for on-site storage of LLRW generated at that site, and therefore, the 5-year limit on storing such LLRW on-site remains not applicable.

BACKFIT DISCUSSION

This RIS reiterates the current staff position that there is no need for power reactor licensees to obtain a Part 30 license for storing LLRW generated at the site for a duration greater than 5 years. Previously, GL 81-38 indicated that a licensee may need a Part 30 license for storage of LLRW when the storage time duration would exceed 5 years. In 1993, the staff proposed rulemaking requiring the need for the Part 30 license for storage of LLRW. This rulemaking effort was withdrawn since Part 30 already allows for LLRW storage at Part 50 licensed facilities with no time limit. In response to the staff's proposal to withdraw this rulemaking, the Commission issued a Staff Requirements Memorandum on February 1, 1994, which directed the staff to establish guidance identifying that a Part 30 License was not required for Part 50 Licensees. These efforts established the current staff position. This RIS requires no action or response. This RIS does not impose a regulatory staff position interpreting Commission rules that is either new or different from a previously applicable staff position and, therefore, it is not a backfit as defined by 10 CFR 50.109. Consequently, the staff did not perform a backfit analysis.

FEDERAL REGISTER NOTIFICATION

A notice of opportunity for public comment on this RIS was not published in the *Federal Register* because the RIS is informational and does not represent a departure from current regulatory requirements. However, a public meeting to discuss the RIS and obtain comments from interested parties was held on September 10, 2008. The meeting summary is available under ADAMS accession number ML082540738.

CONGRESSIONAL REVIEW ACT

This RIS is not a rule as designated by the Congressional Review Act (5 U.S.C. §§ 801-886) and therefore, is not subject to the Act.

Paperwork Reduction Act Statement

This RIS contains information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.) These information collections were approved by the Office of Management and Budget, approval numbers 3150-0011 and 3150-0014.

Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting documents displays a currently valid OMB control number.

CONTACT

This RIS requires no specific action or written response. Please direct any questions about this matter to the technical contact listed below.

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Enclosure:

References

Note: NRC generic communications may be found at the NRC public website at <http://www.nrc.gov> under Electronic Reading Room/Document Collections.

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REFERENCES

NUREG-0800, Standard Review Plan for the Review of Safety Reports for Nuclear Power Plants, March 2007.

Generic Letter GL-81-38, Storage of Low-level Radioactive Wastes at Power Reactor Sites. November 10, 1981.

Guidelines for Operating an Interim On Site Low Level Radioactive Waste Storage Facility, EPRI, Final Draft April 2008.

Information Notice 89-13. Alternative Waste Management Procedures in Case of Denial of Access to Low-level Waste Disposal Sites. February 8, 1989

Generic Letter GL-85-14, Commercial Storage at Power Reactor Sites of Low level Radioactive Waste not Generated by the Utility. August 1, 1985.

SECY-94-198, Review of Existing Guidance Concerning the Extended Storage of Low-Level Radioactive Waste. August 1, 1994