

POLICY ISSUE
(Information)

August 29, 2008

SECY-08-0124

FOR: The Commissioners

FROM: R. W. Borchardt
Executive Director for Operations

SUBJECT: ANNUAL REVIEW OF THE NEED FOR RULEMAKING AND/OR
REGULATORY GUIDANCE ON LOW-LEVEL RADIOACTIVE WASTE
STORAGE

PURPOSE:

To inform the Commission of the U.S Nuclear Regulatory Commission (NRC) staff's efforts related to the review and revision of guidance related to extended interim storage of low-level radioactive waste; and of staff's intention to consolidate updated storage guidance for all licensees consistent with the Strategic Assessment for Low-Level Radioactive Waste (LLRW) regulation.

BACKGROUND:

In Staff Requirements Memorandum SECY-03-0223, "Rulemaking Plan: Assured Isolation Facilities," dated January 29, 2004, the Commission directed staff to provide an annual update on the need for regulations or regulatory guidance related to extended interim storage of LLRW. In 2005 staff advised the Commission that regulations specific to extended storage of LLRW were unnecessary and that existing guidance was sufficient. In SECY-06-0193, "Annual Review of the Need for Rulemaking and/or Regulatory Guidance on Low-Level Waste Storage," dated September 6, 2006, staff maintained its position that the NRC regulatory framework was

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sufficient for regulation of LLRW storage. However, the staff informed the Commission of its intention to review and update storage guidance. Staff cited the age of the guidance in light of today's regulatory environment and the increased likelihood that storage issues were likely to become more relevant to many licensees due to the loss of access to the Barnwell LLRW disposal facility as of July 2008. Staff also indicated that it intended to focus first on updating guidance for fuel cycle and materials licensees. This was because reactor licensees, although dealing with larger volumes of Class B and Class C LLRW (per 10 CFR Part 61), already have infrastructure and resources in place to manage extended interim storage so the need for updated guidance was less acute. Many radioactive materials users, on the other hand, may have limited resources and infrastructure to seamlessly transition to extended interim storage of LLRW. Additionally, the staff was aware of an effort by the Electric Power Research Institute, on behalf of the Nuclear Energy Institute, to develop LLRW storage operations considerations at nuclear utilities.

In its annual report on the subject in 2007, SECY-07-0183, "Annual Review of the Need for Rulemaking and/or Regulatory Guidance on Low-Level Radioactive Waste Storage," dated October 22, 2007, staff outlined its process for reviewing and updating guidance for extended interim storage of LLRW for fuel cycle and materials licensees. Staff intended to use an earlier generic communication, Information Notice (IN) 90-09, "Extended Interim Storage for Fuel Cycle and Materials Licensees," as the first communication to be revised. Reasons cited were familiarity with the document by inspectors and States, its citation in many other NRC reference documents, and the fact that it was the basis for guidance developed by some States. Staff also informed the Commission of its intent to inform the effort through site visits to a variety of LLRW storage circumstances, to consult with other headquarters' offices, the Regions and State radiation control program officials.

As of July 1, 2008, the Barnwell LLRW Disposal Facility became exclusively the host facility for the Atlantic Compact (Connecticut, New Jersey, and South Carolina). Generators of Class B and C LLRW in the 36 States that do not have access to either the Barnwell facility or the LLRW disposal facility in Richland, WA will no longer have a disposal pathway for Class B and C LLRW. Many of these licensees will have no alternative but to store such waste on-site as part of their licensed operations. It is anticipated that most Class A waste that is not subject to either compact restrictions or compact limitations may be disposed of at an Energy Solutions owned disposal facility in Clive, UT.

Of the 104 operating nuclear power plant units, 8 are located in States within compacts with low-level radioactive waste disposal facilities (LLRWDF) that will continue to accept Class B and C waste. (This number will increase to 12 if the effort to license a disposal facility in Texas is successful.) Plants that do not have a disposal outlet for Class B and C waste are likely to accumulate such waste at an average rate of 200-250 cubic feet per year/unit, according to data from the U.S. Department of Energy Manifest Information Management System (MIMS). This figure may be reduced over time as initiatives to reduce the volume of Class B and C waste produced during operations are implemented.

There are approximately 18,600 materials licensees in 35 Agreement States and approximately 3,700 materials licensees in NRC jurisdiction. Most of these licensees generate little or no radioactive waste. Many use short-lived isotopes that can be stored and allowed to decay in accordance with 10 CFR Part 20. Of the relatively small amount of waste generated by materials licensees, most is Class A waste. However, a significant number of them generate a

small amount of Class B and Class C waste and will be required to deal with the loss of disposal capacity. The most likely waste streams appear to be radioactive sealed sources and liquids containing relatively long-lived isotopes resulting from radiochemical production. According to data from MIMS, total annual volumes of such waste are approximated at 6,000 cubic feet, mostly from non-defense government sources. The Department of Energy is continuing to implement its Offsite Source Recovery Program that recovers unwanted, orphaned, and abandoned sealed sources. More than 15,000 sources have been collected to date. In addition, the Conference of Radiation Control Program Directors and DOE have entered into a cooperative agreement to support sealed source consolidation and disposal efforts at the State level.

In March 2007, a U.S. Government Accountability Office (GAO) report evaluated foreign approaches to LLW management (GAO-07-221). GAO indicated that it may be useful to develop and implement a national radioactive waste management plan, and that there is no single Federal agency or other organization responsible for coordinating LLW stakeholder groups to develop such a plan.

DISCUSSION:

Staff anticipates that the impact of loss of access to the Barnwell facility will not be dramatic and immediate, but rather gradual. It is anticipated that accumulations of Class B and C waste for most fuel cycle facility and materials licensees will be manageable in the near term. For fuel cycle facilities this is a function of infrastructure and resources and for materials licensees a function of the relatively small volumes. Possible exceptions may be the few licensees who produce liquid Class B or C waste or licensees in the process of decommissioning or relocating operations.

In its continuing efforts to address this issue, staff plans to evaluate the need for additional supplemental guidance in the form of a NUREG that is the proposed culmination of the initiative to update LLRW storage guidance.

In early 2008, while in the process of revising IN 90-09, staff determined that a Regulatory Issue Summary (RIS) was a more appropriate form of generic communication than an Information Notice. Staff completed its revision to the extended storage guidelines for fuel cycle and materials licensees and issued RIS 08-12, "Extended Interim Storage of Low-Level Radioactive Waste by Fuel Cycle and Materials Licensees," dated May 9, 2008.

Staff plans a somewhat parallel effort to review guidelines prepared by the Electric Power Research Institute (EPRI) for LLRW storage at nuclear utilities, "Guidelines for Operating an Interim On-Site Low Level Radioactive Waste Storage Facility." Staff is currently conducting its review of the EPRI document and anticipates a response, in the form of a RIS, in Fall 2008. The RIS is also likely to clarify some earlier regulatory positions regarding storage of LLRW at utility sites presented as staff positions in SECY 94-198, "Review of Existing Guidance Concerning the Extended Storage of Low-Level Radioactive Waste," dated August 1, 1994.

Staff has commenced a review and update of NRC inspection procedures relevant to LLRW storage by fuel cycle and radioactive materials licensees. Inspection Procedures 84850, "Radioactive Waste Management - Inspection of Waste Generator Requirements of 10 CFR Part 20 and 10 CFR Part 61" and 84900, "Low-Level Waste Storage," were revised,

provided for Regional review and are expected to be issued in September 2008. Updates to other inspection procedures related to LLRW are also being considered.

Office of Federal and State Materials and Environmental Management Programs (FSME) staff anticipates accompanying inspections of a variety of different types of licensees who are storing LLRW. This will afford the opportunity to acquire the perspective of both inspectors and licensees. Such interaction will allow identification of any deficiencies or lack of clarity in inspection procedures and thus inform future revisions.

FSME will coordinate with the Office of Nuclear Material Safety and Safeguards, the Office of Nuclear Reactor Regulation, and the Office of New Reactors to ensure the identification and consideration of any crosscutting issues associated with extended interim storage. If such issues are identified, FSME staff will coordinate responses, as necessary, in the form of regulatory guidance, amended inspection procedures or generic communications. If security issues are identified, coordination will include the Office of Nuclear Security and Incident Response.

Staff also anticipates extensive interaction with Agreement State radiation control program officials in order to continue to keep informed of any incremental problems or concerns arising from extended storage of LLRW by State radioactive materials licensees. This will be accomplished by participation in periodic Agreement State conference calls, communication with the Organization of Agreement States, response to specific requests for technical assistance from State radiation control programs, and interaction with State officials at various conferences.

Staff will also maintain a dialogue with representatives from key industry groups, such as the Council on Radionuclide and Radiopharmaceuticals Manufacturers, the National Organization of Test, Research, and Training Reactors and others, to maintain awareness of any general industry concerns.

There will also be a continuing dialogue at periodic public meetings with licensees, industry representatives, State radiation control officials as well as other stakeholders to identify, discuss, and achieve risk informed resolution of evolving issues related to extended interim storage of LLRW. Staff anticipates participating in such meetings through 2009.

Under the assumption that the current circumstances mandating extended interim storage of LLRW continues, the initiatives identified herein will be used to inform and provide input to a comprehensive guidance document (most likely in the form of a NUREG document) that provides integrated and detailed guidance to all licensees who must provide for extended interim storage of LLRW. FSME will have the lead in the preparation of the document with input from other NRC headquarters offices, Regional offices and in consultation with States and industry.

COMMITMENTS:

The staff has committed to the following actions in this paper:

1. Continue process of development and compilation of detailed guidance related to low-level radioactive waste storage, as needed. Staff will work with the Agreement States, as appropriate.
2. Report to the Commission in December 2009, in the next of this series of SECY papers, any concerns and challenges associated with the loss of access to disposal at Barnwell that have been identified by licensees, State regulators, inspectors or other stakeholders. The report will also include a status summary of NRC staff initiatives to address and mitigate the concerns and challenges.

RESOURCES:

The staff commitment to implement effort as summarized herein is consistent with the Strategic Assessment of Low-Level Radioactive Waste Regulatory Program (SECY-07-0180, dated October 17, 2007). Baseline LLRW staff resources for Fiscal Year 2009 are budgeted at 3.5 full-time equivalents. It is anticipated that the workload described herein can be accomplished as part of the baseline.

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection. The Office of the Chief Financial Officer has reviewed this paper for resource implications and has no objections. Other NRC program offices for which low-level waste storage is an important consideration were coordinated with in the preparation of this paper.

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