

# POLICY ISSUE INFORMATION

October 22, 2007

SECY-07-0183

FOR: The Commissioners

FROM: Luis A. Reyes  
Executive Director for Operations

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

## PURPOSE:

To provide to the Commission a one year follow-up to the 2006 staff review of the need for rulemaking and/or regulatory guidance on low-level waste storage (SECY-06-0193, "Annual Review of the Need for Rulemaking and/or Regulatory Guidance on Low-Level Radioactive Waste Storage," dated September 6, 2006). In SECY-06-0193, the staff indicated its intent to review, for possible revision or updating, guidance specifically targeted to radioactive materials users and fuel cycle facilities that may be faced with the need to store low-level radioactive waste (LLRW) on a protracted basis due to the loss of access to disposal for certain LLRW by generators in 36 states. This paper provides a status report and estimated completion schedule for the staff's efforts.

## SUMMARY:

In fulfillment of the staff's obligation to inform the Commission annually on the need for updating guidance and/or regulations related to the long-term storage of LLRW, this paper presents a status report on the commitment by staff in SECY-06-0193 to review existing guidance and

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revise or update it as necessary. It provides a summary of efforts to date which involve other U.S. Nuclear Regulatory Commission (NRC) Headquarters offices, the NRC Regions, Agreement State regulatory personnel, and a small sampling of licensees. The staff discusses efforts to inform storage guidance intended for materials and fuel cycle licensees through a dialogue with the Electric Power Research Institute (EPRI). EPRI is in the process of updating LLRW storage guidance for nuclear power plants. The staff also briefly summarizes a similar effort to update LLRW storage guidance in 1994, and the staff's intention to use positions established at that time in the staff's new LLRW storage efforts. The staff has identified no policy issues raised by this paper or the initiative described herein. If, in the implementation process policy issues are identified, the staff will request guidance from the Commission.

#### BACKGROUND:

In SECY-06-0193, the staff committed to perform a gap analysis of existing LLRW long-term storage guidance necessary to develop updated or supplemental guidance for materials and fuel cycle generators who will be forced to store some waste streams as a result of the closure of the Barnwell LLRW disposal facility. The staff also presented an approach and level of effort for completing this task. In the months immediately following the staff's commitment, efforts were temporarily redirected due, in part, to renewed optimism in early 2007 that the Barnwell facility would remain open to non-compact generators and thus reduce the urgency for updated LLRW storage guidance by early 2008. Because of recent decisions by the South Carolina legislature, it now appears likely that the Barnwell facility will be limited to waste from the three-state Atlantic Compact beginning in July 2008.

The most recent staff initiative to update LLRW long-term storage guidance occurred in 1994. At that time, the staff reviewed and consolidated all major guidance for both nuclear power plant and radioactive materials facilities which staff planned to issue in an NRC generic letter, (SECY-94-198, "Review of Existing Guidance Concerning the Extended Storage of Low-Level Radioactive Waste," dated August 1, 1994). SECY-94-198 also offered clarification on several issues that directly impact the long-term storage of LLRW including storage time limitations, the need for 10 CFR 50.59 evaluations, and the need to store in a form suitable for disposal. In its current effort, staff will reaffirm or update the recommendations made in SECY-94-198 insofar as they are applicable to materials and fuel cycle licensees.

The LLRW storage guidance discussed in this paper has been considered and evaluated in the staff's LLRW strategic assessment that was recently sent to the Commission. The strategic assessment identifies and prioritizes a variety of actions that NRC could take in its LLRW regulatory program to ensure that agency objectives are achieved. The staff has ranked, as a high priority task, reviewing and updating extended storage guidance for materials and fuel cycle licensees, as described in this paper. The Barnwell LLRW disposal facility is expected to close to out-of-compact generators next summer, and as a result, LLRW generators located in 36 States will have no disposal option for their Class B and C LLRW. This updated guidance is intended to help ensure safe and secure storage by materials and fuel cycle licensees in the future.

DISCUSSION:

Following its report to the Commission in SECY-06-0193, the staff began reviewing current guidance in order to identify possible gaps, inconsistencies or lack of alignment with the current regulatory climate. This review included not only the primary source document that provides such guidance to materials and fuel cycle licensees, Information Notice (IN) 90-09, "Extended Interim Storage of Low-Level Radioactive Waste by Fuel Cycle and Materials Licensees," dated February 5, 1990, but also subsequent clarifying documentation related to the licensing and inspection of facilities that must consider storage and disposition of LLRW. As part of this effort, the staff began a dialogue with cognizant individuals in other Headquarters offices (the Office of Nuclear Security and Incident Response (NSIR), the Office of Nuclear Material Safety and Safeguards and the Office of Nuclear Reactor Regulation), the Regions, State regulatory programs, and licensees whose insight and perspective have been valuable in informing this effort. The process was further informed through comments received as part of an Advisory Committee on Nuclear Waste and Materials (ACNW&M) hosted working group meeting on LLRW management issues (May 23-25, 2006), as well as comments resulting from "Request for Comments on the Nuclear Regulatory Commission's Low-level Radioactive Waste Program" (71 FR 38675; July 7, 2006) soliciting comments on the national LLRW program and NRC's related role.

*APPROACH FOR REVIEW/REVISION OF GUIDANCE*

Based on the reviews and discussions with stakeholders, the staff will use IN 90-09 as the baseline document for any proposed revisions or supplements to guidance. The rationale for this approach is:

1. NRC regional offices and Agreement State radiation control programs are familiar with IN 90-09.
2. References to IN 90-09 have been incorporated in a number of other NRC guidance and procedures documents.
3. IN 90-09 was written at a high enough level to be applicable to the wide range of circumstances characteristic of materials users and fuel cycle facilities.
4. IN 90-09 was the basis for LLRW storage guidance developed by some Agreement States.

The staff will develop a stand-alone revision or replacement for IN 90-09 that would incorporate many of the "first principles" presented in that document and that continue to be applicable to long-term storage of LLRW. Examples include protection of stored waste from climatological stresses, verification of package integrity, and placement to minimize worker exposure. A draft of the document would also present any proposed revisions, additions, and clarifications in a transparent manner so that reviewers and potentially affected parties could readily recognize proposed changes. Revisions whose purpose is not self evident will include a parenthetical explanation. Staff will develop and publish a draft available for comment by the Regions, other NRC offices, and Agreement State regulatory programs, and the public, by late November 2007.

As part of its efforts to inform the process, the staff has planned and in large part implemented site visits to a small number of radioactive materials users who store radioactive waste as part of operations, but whose storage circumstances would change with the loss of disposal capacity. The sampling includes materials users in various categories: universities, medical facilities, radiopharmaceutical manufacturers, waste brokers, and biomedical facilities. One developing uranium enrichment facility was also included. These site visits provided a sense of storage challenges in: (1) various locales (rural and urban); (2) different types of facilities (dedicated LLRW storage and storage incidental to operations); and (3) varying levels of facility complexity, infrastructure and financial capability. The visits included both NRC and Agreement State licensed facilities.

The staff has visited 20 such facilities in 2 NRC regions and 5 Agreement States. This process has involved dialogue with both NRC and Agreement State radiation protection personnel as well as licensee representatives. The staff is cognizant of concerns related to storage raised by the U.S. Government Accountability Office (GAO) in recent reports LLRW. These reports include:

- GAO-04-604, "Low-Level Radioactive Waste: Disposal Availability Adequate in the Short Term, but Oversight Needed to Identify Any Future Shortfalls," dated June 10, 2004;
- GAO-05-967, "Nuclear Security: DOE Needs Better Information to Guide Its Expanded Recovery of Sealed Radiological Sources," dated September 22, 2005; and
- GAO-07-221, "Low-Level Radioactive Waste Management: Approaches Used by Foreign Countries May Provide Useful Lessons for Managing U.S. Radioactive Waste," dated March 21, 2007.

Recent visits to biotechnology companies in Southern California were driven, in part, by the concern raised in GAO-04-604, that, ". . . the [biotechnology] industry, particularly the smaller start-up companies, are not prepared for the financial cost of storing and securing LLRW."

The staff is also informing the process by maintaining awareness of ongoing efforts by the EPRI to update guidance related to LLRW storage by nuclear power plants. An example is the EPRI publication "Guide for Operating an Interim On-Site Low-Level Radioactive Waste Storage Facility," dated October 2004. While much of the guidance contained in the document has been developed to be specifically responsive to the infrastructure, operations, expertise and resources unique to nuclear power plants, most, if not all, of the basic principles are applicable to a much broader range of radioactive materials users and similar to principles included in current guidance applicable to radioactive materials users.

The staff is also aware that increased security considerations in a post-9/11 environment may be appropriate for LLRW storage. During guidance development, staff will consult with NSIR to ensure that any security concerns are appropriately addressed. In addition, the staff is cognizant of international efforts to develop guidelines for waste security (e.g., the International Atomic Energy Agency's "Security of Radioactive Waste" draft). Such guidelines, when finalized, will be a valuable supplemental reference.

It is appropriate to provide a linkage between the current effort to review and update storage guidance with similar efforts documented in SECY-94-198 referenced above. In SECY-94-198, the staff proposed consolidated guidance related to long-term storage of LLRW for all types of licenses. The staff also proposed to update and revise some previous staff positions contained in earlier guidance, particularly Generic Letter 81-38, "Storage of Low-Level Radioactive Waste at Power Reactor Sites," and the previously referenced IN 90-09. With this effort to update guidance for fuel cycle and materials licenses, the staff will adopt, clarify or update, as applicable to materials and fuel cycle licensees, the revised positions contained in SECY-94-198. Efforts, beyond the scope of this paper, related to storage guidance for nuclear power plants, will clarify staff positions in SECY-94-198 as they are related to nuclear power licensees.

The resultant product would replace or revise. It would also provide instructions related to disposition of references to IN 90-09 in other NRC guidance, for example:

- Inspection procedures (IP) like IP 84900, "Low-Level Radioactive Waste Storage" and IP 84850, "Radioactive Waste Management - Inspection of Waste Generator Requirements of 10 CFR 20 and 10 CFR 61;" and
- NUREG-1556, "Consolidated Guidance About Materials Licenses."

#### *TIMETABLE FOR COMPLETION OF GUIDANCE REVIEW AND UPDATE*

The staff has begun drafting revised guidance based on a review of existing guidance, dialogue as noted above, and site visits. The staff expects to have a draft of revised guidance available for review by other Headquarters offices, the ACNW&M, the Regions, Agreement State radiation control personnel, and members of the public, by November 2007. The staff will update the Commission on the progress of the activities. It is anticipated that a final product would be disseminated in early 2008.

#### COMMITMENTS:

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

1. Complete suggested revisions to guidance in draft by November 2007 and provide opportunities for review by other NRC offices and Agreement States.
2. Finalize and disseminate any suggested revisions to guidance by February 2008. Dissemination will include instructions regarding the relationship of revised guidance to related guidance contained in NUREGs and IPs.

#### RESOURCES:

The staff commitment to implement effort as summarized herein does not require additional resources. Resources for Fiscal Year 2008 budgeted 0.3 full-time equivalents. If, during implementation, the staff identifies the need for additional resources beyond those already budgeted, then the staff will estimate the resources needed and consider them within the overall context of the LLRW strategic assessment.

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. In preparing this paper, the staff has considered the insights and experience of a selected sampling of regional licensing and inspection personnel, state radiation control program officers, waste brokers, and radioactive materials users.

Sincerely,

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