



NUCLEAR ENERGY INSTITUTE

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September 9, 2006

Chief, Rules and Directives Branch  
Mail Stop T6-D59  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**SUBJECT:** Request for Comments on the Nuclear Regulatory Commission's Low-Level Radioactive Waste Program (71 Fed. Reg. 38675, dated July 7, 2006)

The Nuclear Energy Institute (NEI)<sup>1</sup> is pleased to submit comments on the subject Federal Registration notice. These comments were developed with input from nuclear energy industry personnel responsible for management of low-level radioactive waste (LLRW) and representatives of the Electric Power Research Institute (EPRI).

NEI and industry personnel participated in a public fact-finding meeting sponsored by the NRC's Advisory Committee on Nuclear Waste (ACNW) on May 23 and 24, 2006. At that meeting, we presented information regarding LLRW generation and disposal by operating and decommissioning nuclear power plants, including information on classes, forms, and current and projected volumes and costs. In addition, we provided input to the ACNW regarding areas where NRC's regulations and guidance for near-surface disposal of LLRW might be more risk-informed and provided information for the NRC staff to consider in its strategic assessment of the LLRW regulatory program. The comments provided in this letter are intended to highlight and supplement the information presented at the May 2006 ACNW meeting.

<sup>1</sup> NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

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*F-RIDS = ADM-03  
Add = J. Kennedy (SEKI)*

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*R. W. Lutes (ARW2)*

## Background

Without regulatory or operational changes, annual volumes of LLRW generated by currently operating nuclear power plants will remain relatively constant through about 2035. At that time, the onset of decommissioning of the current fleet of nuclear power plants will result in a fourfold (or more) increase in the annual volumes of generated LLRW through about 2055, followed by a trend toward zero, when the last plant completes decommissioning in about 2065.

The licensing and operation of new nuclear power plants will obviously add to the annual volumes of LLRW generated. No projections are made at this time due to the uncertainty in licensing and startup schedules and the expected, but as yet not quantified, differences in LLRW generation and disposal practices associated with new plants.

Most LLRW (>90% by volume) generated by operating nuclear power plants is Class A waste. The remainder is Class B and C waste (<10% by volume) and small amounts of greater-than-Class C (GTCC) waste (<1% by volume). For decommissioning nuclear power plants, the ratios of the classes of LLRW (i.e., Class A/Class B and C/GTCC) are similar to that for operating plants, however the predominant types of materials are different (e.g., structural steel, concrete rubble, and soil) and the overall volumes are greater.

Class A LLRW from nuclear power plants is currently disposed of at the LLRW disposal sites at Clive, Utah; Barnwell, South Carolina; and Richland, Washington. Class B and C LLRW is disposed of at the Barnwell and Richland sites. The Clive site is not licensed to accept Class A Stable and Class B/C waste.

At present, there is not a disposal facility licensed for routine disposal of LLRW that is classified as greater-than-Class C (GTCC). Such waste is destined for eventual disposal in a deep geologic repository. Greater-than-Class C LLRW is safely and securely stored at nuclear power plant sites until such time that a licensed disposal facility becomes available.

Access for disposal at the Richland site is restricted to waste generators within the Northwest and Rocky Mountain LLRW Compacts, which include one operating and one decommissioning nuclear plant. At present, the Barnwell site accepts LLRW from all U.S. generators, but under a South Carolina state law, access for disposal will be restricted to waste generators within the Atlantic Compact after July 1, 2008. At that time, about 80% of nuclear power plants will lack access to a LLRW disposal facility that accepts Class B and C waste.

Issues related to the federal Low-Level Waste Policy Act, state compacts, and accessibility of LLRW disposal facilities have been the subject of much discussion and debate involving numerous organizations and agencies. The nuclear energy industry is very concerned that little progress is being made to address the pending lack of access for disposal of Class B and C LLRW and consequent impacts that will occur as a result of the extended storage of such LLRW at licensee sites. Although the comments provided in this letter are primarily focused on risk-informed enhancements to the NRC's strategic assessment of the agency's LLRW regulatory program, we believe that many of the recommended enhancements, if implemented, will also have the effect of mitigating impacts associated with the extended storage of Class B and C LLRW.

### **Suggested Enhancements to the NRC's LLRW Regulatory Program**

Suggested near and long-term<sup>2</sup> actions that can better risk-inform NRC's program for the regulation of LLRW management and disposal include the following:

#### **A. NRC Regulations**

1. [Near-term] Initiate rulemaking to permit the disposal of mixed waste (i.e., waste containing both radiological and non-radiological substances regulated by the NRC and/or EPA) and "very low" LLRW at appropriate hazardous waste disposal facilities regulated under the Resource Conservation and Recovery Act (RCRA). We recommend this action proceed in consultation with the U.S. Environmental Protection Agency (EPA). The EPA has previously published a description of such an approach to risk-informed regulation of certain radioactive materials in an advance notice of proposed rulemaking (68 Fed. Reg. 65120, dated November 18, 2003). Such NRC rulemaking would essentially be a reciprocal of previous EPA rulemaking that exempts certain mixed wastes from RCRA regulations, leaving only NRC to regulate their storage treatment, and transportation (66 Fed. Reg. 27218, dated May 16, 2001).
2. [Long-term] Initiate rulemaking to incorporate regulatory experience and risk-insights from approved (and disapproved) exemptions and alternatives in regard to disposal regulations (e.g., 10 CFR 61.58 and 10 CFR 20.2002). This rulemaking should provide an opportunity to update performance objectives and other standards to reflect contemporary scientific concepts and methodology in the area of radiation protection.

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<sup>2</sup> As used in this letter, near-term refers to the next three years (i.e., 2007-2009) and long-term refers to a period beginning after three years (i.e., 2010 and beyond).

3. [Long-term] Update and continue with rulemaking, previously put on hold by the Commission, to establish radiological criteria for controlling the disposition of solid materials (described in SECY 2005-0054, dated March 31, 2005). We respectfully request this action take into account the comments submitted by letter to the Commission, dated June 30, 2005.

**B. NRC Regulatory Guidance**

1. [Near-term] Regulatory guidance should be developed for robust, long-term storage of LLRW at licensee facilities. Such guidance should encourage timely disposal of LLRW where disposal options are available, but the guidance should recognize interim storage contingencies where such options are not available, potentially for an extended period of time. In 2007, the nuclear energy industry plans to provide the NRC an industry standard for robust, long-term storage of LLRW at nuclear power plants for regulatory review and concurrence.
2. [Near-term] NRC should evaluate risk-informed changes to the Branch Technical Positions (BTPs) on Waste Form and Waste Classification to improve flexibility and reduce unnecessary regulatory burden. For example, a more flexible and risk-informed approach should be considered that allows for greater variability between maximum and minimum concentrations of radioactive material. This would be applicable to situations where radioactive material is integral to the matrix of irradiated hardware, and not readily available for environmental transport at a disposal site. Also, more flexibility should be considered in the criteria applicable to mixing of waste types or streams, where such flexibility can be shown to not have an adverse impact on meeting 10 CFR 61 performance objectives. In 2007, the nuclear energy industry plans to provide the NRC with a white paper outlining the technical basis and justification for risk-informed changes to the BTPs.
3. [Near-term] NRC should develop guidance to support risk-informed utilization of 10 CFR 61.58 and 10 CR 20.2002. Such guidance can greatly facilitate NRC review of proposed alternatives under the two regulatory provisions by outlining formats and content acceptable to the staff, as well as to clarify regulatory review methodology and acceptance criteria that would be applied by the staff in its review.

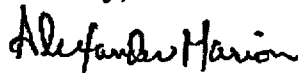
C. Other

1. [Near-term] NRC should coordinate with the states to achieve uniformity in regulatory criteria and guidance for waste classification. This would eliminate differing and more restrictive criteria between states that unnecessarily constrain flexibility and increase burden on regulators and licensees.
2. [Near-term] NRC should evaluate revising Regulatory Guide 1.21 to improve the tracking, reporting, and quality of LLRW disposal information. For example, the guidance should be revised to reflect current waste management practices in regard to intermediate waste processors that have the effect of changing shipped versus disposed LLRW volumes and concentrations. Also, NRC should consider modifying the guide to enable the NRC to obtain required information directly from the Department of Energy (DOE) Manifest Information Management System (MIMS) and thereby reduce the duplicative reporting burden on licensees. In the subject notice, the NRC requested specific input on actions NRC and other agencies can take to improve their communication with affected and interested stakeholders. In our view, creating a high quality LLRW disposal database with current, complete, and accurate information is a key prerequisite for transparency and credibility in the agency's communications with stakeholders.

In addition to our comments provided here and at the May 2006 ACNW workshop, NEI has reviewed and supports the recommendations provided to the NRC by the Council on Radiopharmaceuticals and Radionuclides (CORAR), the Utility Solid Waste Advisory Group (USWAG), and the Advocates for Responsible Disposal in Texas (ARDT).

The nuclear energy industry greatly appreciates the opportunity to provide NRC input for consideration in the agency's strategic assessment of its LLRW regulatory program. Please contact me (202-739-8080; [am@nei.org](mailto:am@nei.org)) or Ralph Andersen (202-739-8111; [rla@nei.org](mailto:rla@nei.org)) if you have any questions.

Sincerely,



Alexander Marion