

November 3, 2011

Dr. Said Abdel-Khalik, Chairman
Advisory Committee on Reactor Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: RESPONSE TO THE ADVISORY COMMITTEE ON REACTOR
SAFEGUARDS REPORT ON THE PROPOSED RULEMAKING TO
INTRODUCE A SITE-SPECIFIC PERFORMANCE ASSESSMENT AND
HUMAN INTRUSION ANALYSIS REQUIREMENT TO 10 CFR PART 61
(RIN-3150-AI92)

Dear Dr. Abdel-Khalik:

The U.S. Nuclear Regulatory Commission (NRC) staff appreciates your continued interest in the development of the proposed rulemaking on the commercial low-level waste (LLW) disposal regulation and related regulatory guidance. The NRC staff also appreciates the views expressed by the Advisory Committee on Reactor Safeguards (ACRS) on this important rulemaking in its September 22, 2011 letter (Agencywide Documents Access and Management System (ADAMS) Accession No. ML11256A191). As you are aware, since the development of Part 61, members of the regulated community have expressed an interest in disposing of large quantities of depleted uranium and blended wastes in commercial LLW disposal facilities. Although the existing regulatory infrastructure is adequate to protect public health and safety, the Commission directed the staff to develop additional requirements to ensure continued safe disposal of these waste streams, and to do so in a timely manner.

The staff's draft proposed rule is consistent with Commission direction for a limited scope Part 61 rulemaking. In the staff requirements memorandum (SRM) for SECY-08-0147 dated March 18, 2009, the Commission directed the staff to proceed with a limited scope rulemaking to specify a requirement for a site-specific analysis for the disposal of large quantities of depleted uranium, develop the technical requirements for such an analysis, and develop guidance for public comment that outlines the parameters and assumptions to be used in conducting such site-specific analyses. The Commission also directed the staff not to alter the waste classification of depleted uranium. Subsequently, in the SRM for SECY-10-0043 dated October 13, 2010, the Commission directed staff to also include blended LLW in this limited scope rulemaking.

The ACRS' first recommendation was that Part 61 not be amended in accordance with the staff's recommended approach, but that the staff develop a risk-informed, performance-based methodology using realistic characteristics. Notwithstanding the ACRS recommendation, the staff considers this set of limited amendments to Part 61 consistent with Commission direction that is risk-informed and performance-based for the reasons discussed below.

First, the proposed amendments would augment an existing requirement at § 61.13(a) to perform a technical analysis demonstrating compliance with the performance objective to protect the general population at § 61.41. This augmentation introduces new terminology (i.e., performance assessment) in § 61.13(a) that is consistent with more modern methodology in SECY-99-100 and NUREG-1573, but continues to serve the same function as the existing requirements for the technical analysis.

Second, the proposed amendments would require an inadvertent intruder assessment to demonstrate compliance with the existing performance objective at § 61.42 to ensure protection of individuals from inadvertent intrusion. Similar to the performance assessment methodology, the inadvertent intruder assessment enables licensees to assess potential exposures that could occur as a result of reasonably foreseeable scenarios. To facilitate compliance with the requirement, the staff has developed guidance that specifically addresses the development of reasonably foreseeable inadvertent intruder scenarios. For instance, the guidance describes how licensees can consider physical (e.g., a lack of potable water) and cultural (e.g., land use) information about the site to limit speculation on hypothetical future intruder activities. Further, staff proposed an intruder assessment requirement that provides flexibility to consider site-specific information in the assessment, thus, making the Part 61 more risk-informed. This is in contrast with the current waste classification system, which is based on an analysis for a reference disposal facility and does not consider site-specific information.

Third, the staff is proposing consideration of a new requirement to perform a long-term analysis at § 61.13(e) to assess how the design of a specific disposal facility considers the potential long-term radiological impacts beyond the period of performance, consistent with available data and current scientific understanding. The staff recognizes that uncertainties can be challenging at very long time periods, such as those beyond the proposed period of performance and is consistent with the previous recommendations from the Advisory Committee on Nuclear Waste, which your letter cites. The staff's recommended approach and implementing guidance provide applicants and licensees the flexibility to determine how best to demonstrate compliance with the Part 61 performance objectives in addition to a more risk-informed, performance-based, site-specific assessment methodology.

Regarding the second recommendation, the staff agrees that the performance assessment period of performance should take into account the site-specific and facility-specific conditions. However, the staff believes that it is important to specify a period of performance in the rule. In September 2009, the staff conducted two public workshops to solicit stakeholder input on major issues associated with the rulemaking. In May 2011, the staff published preliminary proposed rule language for early public comment and conducted a public meeting to discuss the preliminary proposed rule language. At the public workshops and meeting, while there were some that disagreed, the staff heard stakeholder support for specifying a period of performance in the regulations. A period of performance is one of the main technical parameters needed for the disposal of long-lived waste in the near surface environment. The staff determined that providing a specific period of performance in the regulations would enhance the safe disposal of LLW by providing clear direction to licensees and the Agreement States. The specification of technical parameters is consistent with the Commission's direction. To provide additional flexibility, the NRC staff revised the proposed rule language to require an assessment of peak annual dose that occurs "within 20,000 years" rather than "up to 20,000 years."

With respect to the ACRS' third recommendation, the staff agrees with the ACRS that the points made in recommendations 1 and 2 are equally applicable to the disposal of depleted uranium as well as other types of LLW.

Finally, regarding the fourth recommendation, the staff agrees with the ACRS and believes that it has developed a proposed rule that considers the natural features, events, and processes for a given site for a period of time commensurate with the risk for a specific facility and site. For example, the proposed site-specific analyses, associated definitions, and technical analyses requirements are risk-informed and flexible because the underlying regulatory framework specifies the requirements to be met. This approach also provides flexibility to a licensee or applicant regarding how they satisfy those requirements. The proposed approach is warranted considering the site-specific nature of LLW disposal, which can be performed safely using different designs operating at substantially different sites.

The staff appreciates the ACRS' thorough review of the proposed rulemaking on the commercial LLW disposal regulation and related regulatory guidance.

Sincerely,

/RA by Michael F. Weber for/

R. W. Borchardt
Executive Director
for Operations

cc: Chairman Jaczko
Commissioner Svinicki
Commissioner Apostolakis
Commissioner Magwood
Commissioner Ostendorff
SECY

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