



Catherine E. Heigel, Director

Promoting and protecting the health of the public and the environment

July 24, 2015

Ms. Annette Vietti-Cook
Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
ATTN: Rulemaking and Adjudications Staff

RE: Proposed 10 CFR Parts 20 and 61 Rule (80 FR 16082)
Low-Level Radioactive Waste Disposal
Docket ID NRC-2011-0012

Dear Madam Secretary:

The South Carolina Department of Health and Environmental Control (SCDHEC) appreciates the opportunity to provide comments to the proposed 10 CFR Parts 20 and 61 rulemaking regarding low-level radioactive waste disposal, as published in the *Federal Register* on March 26, 2015 (80 FR 16082). SCDHEC believes the proposed revisions to the existing regulations directly impact the State of South Carolina as an Agreement State and as one of the four sited states, and looks forward to receiving the full consideration of the U.S. Nuclear Regulatory Commission.

1. Administrative Comments

Changes are proposed for the language in 61.28(a); however there is no listing for 61.28(a) in the "Proposed Compatibility Category for 10 CFR Part 61" on page 16112 of the Federal Register. There is, however, a listing for 61.28(a)(2) which also has proposed changes.

2. Applicability of Part 61 to Existing Licensed Facilities

NRC should provide clarification regarding the conflicting requirements in 61.1(a) and those in 61.13.

The applicability of the original rule published in 1982 was set forth in 61.1(a) which states, "Applicability of the requirements in this Part in effect on the effective date of this rule will be determined on a case-by-case basis and implemented through terms and conditions of the license or by orders issued by the commission." Many of the Part 61 requirements were eventually applied through license conditions to near-surface disposal facilities in operation on the effective date of the rule, and the applicability was determined on a case-by-case basis as stated in 61.1(a). This language afforded regulators of licensed disposal facilities the flexibility to consider when and if each facility should comply with the new requirements based on practical, economical and technical considerations.

Language is proposed to be added in 61.13 requiring that technical analyses shall be submitted by all “Licensees with licenses for land disposal facilities in effect on the effective date of this subpart...at the next license renewal or within 5 years of the effective date of this subpart, whichever comes first.” The case-by-case decision making afforded by 61.1(a) is thereby taken away in the proposed language of 61.13.

At the very least, the proposed rule language should be clarified to reflect which requirement, 61.1(a) or 61.13, is the overarching one.

NRC should reconsider its interpretation of 61.1(a).

During a public meeting in Columbia, SC on June 2, 2015, an NRC representative indicated that the language in 61.1(a) was only intended to apply to the initial Part 61 requirements and not to subsequent revisions to Part 61. That interpretation is not made clear by the current or proposed language.

While the use of the term “case-by-case” may have been intended to refer to a facility, the proposed changes to Part 61 are the most significant since its promulgation and warrant flexibility for each existing requirement given the nature of the new requirements. It is unclear what flexibility exists in the applicability of the original and the proposed new Part 61 requirements.

The State of South Carolina does not support “grandfathering” as a means to relieve the licensee’s regulatory obligation to protect public health and the environment without discretion. The applicability of the requirements should continue to be evaluated on a case-by-case basis.

The NRC suggested in the public meeting that states can exempt licensees from the requirements using the provision found in 61.6. This would seemingly shift the burden from the NRC to the states to determine whether such an exemption would be appropriate; however, this action would be subject to review by the NRC for adequacy during its formal Agreement State program evaluation.

NRC should clearly indicate that the applicability of individual requirements of the rule would be determined on a case-by-case basis. In support of the suggestion, note that the current and proposed language: “implemented through terms and *conditions* of the license”, implies that the individual requirements of Part 61 may be applied separately, since only a single *condition* of a license is necessary to require compliance with Part 61 as a whole.

In summary, the NRC should revise the language to indicate that “case-by-case” refers to each individual licensed facility and to each individual requirement. It is understood that many of the requirements of Part 61 are related; therefore, the regulator would have to carefully consider how to individually apply the requirements of the regulation. NRC should structure the regulation to be amenable to individual application of requirements where practical. This could be accomplished by separating the proposed new requirements for technical analyses into an appendix or subpart.

Since the main reason for revising the requirements in Part 61 are related to the generation of unexpected new waste streams, the new requirements should focus on future disposal at all facilities and consider the relevancy to existing licensed facilities.

In the section titled, "Why do the regulatory requirements need to be revised?" (p. 16087 of the Federal Register), one of the reasons provided is related to new waste streams that were not envisioned during the development of 10 CFR Part 61. These waste streams include, but are not limited to, depleted uranium from enrichment facilities, LLRW from DOE operations, blended LLRW streams in quantities greater than previously expected, and the generation of different LLRW streams that may result from new technologies. The concerns related to the disposal of these waste streams are not entirely applicable to all existing facilities. For example, only two of the existing facilities are candidates for the disposal of Depleted Uranium (DU) from enrichment facilities or from DOE. Also, one of the disposal facilities disposes all waste with intruder barriers so the "large scale blending of Class B and C concentrations of LLRW with Class A to produce a Class A mixture that could result in a dose to an inadvertent intruder that is above 500 mrem" would not be relevant. Since the waste streams described will be considered for future disposal only, the associated new requirements should affect future disposal operations only.

The proposed amendments should not apply to closed portions of a facility undergoing post-closure care, where significant resources have been expended to achieve closure, and where additional engineering controls to meet the inadvertent intruder standard are technically and economically impracticable. Excavation of DU waste presents a real dose to workers, as opposed to a hypothetical dose to someone sometime in the geologic future.

3. Applicability of Part 61 to Waste Already Disposed

NRC should allow flexibility in determining the applicability of the proposed requirements to waste already disposed and future waste disposal taking into consideration established precedence, technical and economic considerations, and the effect on overall site design.

Although many Part 61 requirements were eventually applied to waste disposal facilities that had licenses in effect on the effective date of the original Part 61, the requirements were typically only applied to future waste disposal operations. Waste already disposed was not required to be evaluated to determine whether it may have been considered Class B or Class C waste under the then new waste classification system. Such an evaluation was not considered necessary since a decision to apply new stability and intruder protection requirements to waste already disposed would likely be disruptive to the disposal system, result in an increase in dose to workers and potentially the general population, and create an unnecessary technical and economic burden for the licensee and the regulator.

The proposed language in 61.7(f)(2) states that waste classified under 10 CFR 61.55(a)(6) may not decay to acceptable levels in 100 years and safety is provided by limiting quantities and concentrations of the material consistent with the disposal site design. Such limitations on quantities and concentrations can only reasonably be applied to future waste disposals.

Similarly, 10 CFR 61.7(f)(3) states that waste that will not decay to acceptable levels in 100 years "...must be stable and be disposed at a greater depth..." and "where site conditions prevent deeper disposal, intruder barriers such as concrete covers may be used." For waste already disposed, classified under 10 CFR 61.55(a)(6), and where site conditions prevent deeper disposal, the only option would be to use intruder barriers. The incorporation of such barriers into site design as a remedial measure could have negative consequences. For example, high integrity containers (special containers designed to provide stability) within the disposal unit have structural design requirements based in part on the overburden expected in the disposal environment. In this example, adding concrete barriers on the surface would be incompatible with the overall site design and could compromise the integrity of the high integrity containers. Also, for LLRW disposal facilities, one of the major activities is typically to install a final engineered cap as an engineered barrier and to enhance site stability. For one site, the final cap has been installed for the majority of the disposal area. Once the final cap is installed and the related drainage features of the site are designed, any modification such as adding concrete barriers would compromise the overall site design.

It is clear that at the time of the initial promulgation of the requirements in Part 61, NRC recognized the need to allow for flexibility in applying new regulations to existing facilities by explicitly addressing its applicability to existing facilities in 61.1(a). The language in 61.1(a) aligns with the philosophy that waste disposed in good faith and in accordance with applicable standards in place at the time should not necessarily be subject to new requirements that may be technically impractical and/or financially prohibitive. The reasons to adopt such a philosophy remain valid regardless of whether disposal facilities were able to eventually comply with some of the, then new, requirements. The NRC should continue to adhere to this philosophy.

4. Regulatory Analysis and Backfit Analysis

While backfitting is not required by regulation for the new proposed Part 61 revisions, NRC should consider performing a comparable analysis.

The NRC voluntarily performed a regulatory analysis and published **Draft Regulatory Analysis for Proposed Rule: Low-Level Radioactive Waste Disposal (10 CFR Part 61)** in February 2015. The NRC did not perform a backfit analysis as described in 10 CFR 50.109. Neither a backfit analysis nor a regulatory analysis is required by statute or regulation for 10 CFR Part 61. However, the NRC has been voluntarily performing regulatory analyses since 1976.

Given the significant costs to licensees, license applicants and regulators associated with implementing the new proposed requirements, and considering that the proposed revisions represent the most substantial changes to Part 61 since its promulgation, the NRC should consider performing an expanded analysis similar to a backfit analysis in order to assess whether the proposed revisions will provide for a substantial increase in the overall protection of the public health and safety and that the associated direct and indirect costs are justified by the benefits. In performing the expanded analysis, the NRC should address the pertinent items listed in 10 CFR 50.109 (c).

5. Long-term Stability Requirements

The proposed requirement to demonstrate stability for a period of 10,000 years seems incommensurate with the overall concept of near-surface disposal of LLRW.

The concepts section 61.7 refers to 100, 300 and 500 year timeframes in multiple instances, but not timeframes on the order of thousands of years. Specifically, 61.7(a)(2) for waste characterization requires that site characteristics should take into account the radiological characteristics of the waste and be evaluated for at least a 500 year timeframe and 61.7(f)(3) suggests that the effective life of an intruder barrier be at least 500 years. 61.7(f)(1) suggests that Class B and C waste forms or containers should be designed to be stable over 300 years. However, the language proposed in 61.44 requires long-term stability of the disposal site for the newly defined compliance (1000 years) and protective assurance periods (10,000 years) which are much longer timeframes.

The concept of stability for a period of 10,000 years is not realistic with the overall concept of near-surface disposal of LLRW given the constantly changing surface environment over time. In addition, engineered barriers for near-surface disposal have finite lifespans, which is inconsistent with the concept of surface stability for 10,000 years. Further, computational models that are required to determine whether a disposal facility can achieve site stability out to 10,000 years are only as good as the inputs that are used, and these inputs are probabilistic at best.

6. Adequacy of the Cost and Benefit Estimate developed in the Regulatory Analysis document [Executive Summary, Section III.M.(5)]

The Draft Regulatory Analysis for Proposed Rule: Low-Level Radioactive Waste Disposal (10 CFR Part 61) February 2015, Executive Summary states the following:

“Cost to the Industry. The proposed rule would result in an average undiscounted implementation cost per licensee of an estimated \$1,000,000, followed by an estimated undiscounted annual cost of \$4,000 per licensee. Overall, the industry will incur an estimated undiscounted implementation cost of \$4.0 million, followed by an estimated annual cost of \$16,000.

Cost to the Agreement States. The proposed rule would result in additional costs to the Agreement States with all costs resulting from implementation. On average, each Agreement State would incur an estimated undiscounted implementation cost of \$525,000. Overall, the Agreement States will incur an estimated undiscounted implementation cost of \$2.1 million.”

Although this regulatory analysis does provide assumptions of the estimated costs for implementation of Revisions to Part 61, the estimated implementation costs presented are generic in nature and do not include site specific considerations that could substantially increase these costs. Also, there are potential additional costs that may not have been considered. These include, but may not be limited to, costs associated with procuring regulatory technical expertise required to review and comment on the performance assessments that utilize the new complex

methods proposed, and costs associated with potential remediation activities at existing sites under the current Part 61 requirements.

The regulators of existing facilities are estimated by NRC to expend substantial resources in implementing the proposed new requirements. Many states do not have the resources or expertise to review analyses that are substantially more complex than the current required analyses and will likely need to seek assistance from the NRC staff or private companies to perform the reviews. External review assistance is more expensive than internal reviews and most states do not have funds set aside for this. License fees could potentially be increased to support the more complex reviews but license fees are typically set in regulation and would require legislative support to increase and therefore could not be guaranteed. It is our understanding that actual costs incurred by licensees that completed similar performance analyses (to meet state requirements for DU acceptance that are already in place), and those incurred by Agreement States reviewing the analyses, substantially exceeded the NRC cost estimates published in the Regulatory Analysis document. NRC should reconsider the basis for these cost estimates and publish updated information.

Any site that does not intend to accept large quantities of DU waste (the main driver behind the proposed new regulations) at their licensed disposal facilities should not incur the significant expenditures necessary to review and implement proposed Part 61 requirements.

Thank you for considering these comments in finalizing the revisions to 10 CFR Parts 20 and 61.

Sincerely,

A handwritten signature in blue ink, appearing to read "D. Scaturo", with a long horizontal line extending to the right.

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Director, Division of Waste Management
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