



November 14, 2017

CD17-0257

Ms. Annette Vietti-Cook  
Secretary  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001  
ATTN: Rulemakings and Adjudication Staff

**Reference: Docket ID NRC-2011-0012**

**Subject: Comments on the “Draft Regulatory Analysis for Final Rule: Low-Level Radioactive Waste Disposal,” 82 FR 48283**

Dear Ms. Vietti-Cook:

EnergySolutions appreciates the opportunity to provide comments in response to the *Federal Register* notice regarding the U.S. Nuclear Regulatory Commission’s (NRC) *Draft Regulatory Analysis for Final Rule: Low-Level Radioactive Waste Disposal*.

EnergySolutions has prepared responses to the questions posed by staff in the *Federal Register* notice, which are contained in the attachment. In our comments, we provide detail regarding the costs we have incurred and foresee incurring in the future to implement the rule as proposed by staff in SECY-16-0106, *Final Rule: Low Level Radioactive Waste Disposal*. As we have pointed out in our comments throughout this rulemaking proceeding, staff has underestimated the cost to the U.S. waste disposal system to comply with the rule as proposed. We hope that the attached comments are helpful to staff in more precisely describing these costs.

EnergySolutions believes that the direction given by the Commission in SRM-SECY-16-0106 will lead to a rule that is more technically sound and reasonable and that effectively protects health and safety of the public. In particular, we appreciate that the Commission has reinforced its previous direction to the staff to use a 1,000-year compliance period. As noted in our July 24, 2015 comments on the proposed rulemaking, a 10,000-year time period necessitates analyses that simply are not technically credible. The use of a performance period to estimate impacts many thousands of years into the future is a far more reasonable approach.

We also appreciate the Commission’s direction that the rule should apply only to those disposal sites that intend to dispose of large quantities of depleted uranium. To indiscriminately apply the new rules to all disposal sites is not justified and imposes an unreasonable cost on the waste disposal system. In our attached comments, we provide data to not only quantify this effect, but also to identify the unintended consequences of such an approach.

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Finally, we urge the Commission to direct staff to discontinue its plans to initiate another rulemaking to revise the concentration tables in 10 CFR 61.55. We continue to believe that the site-specific approach in the proposed 10 CFR 61.58 is technically superior to any generic approach to defining waste streams or characterizing disposal sites. The proposed approach also enables a licensee or applicant to account for specific volumes of waste and associated radioactive isotopes, which is more fundamentally sound than the existing concentration-based classification system. We do not see any benefit to revisiting the question of classification of any isotope, including uranium, or of restructuring the classification tables.

EnergySolutions looks forward to the opportunity to provide comment on the supplemental proposed rule to be published in this matter.

Thank you again for this opportunity to comment. Questions regarding these comments may be directed to me at (801) 649-2109 or [dshrum@energysolutions.com](mailto:dshrum@energysolutions.com).

Sincerely,

Daniel B. Shrum  
Senior Vice President, Regulatory Affairs

## **Comments – LLW Regulatory Analysis**

### ***Question 1: Is the NRC considering appropriate alternatives for the regulatory action described in the draft regulatory analysis?***

The NRC considered only two alternatives in its regulatory analysis, either no action or amending Part 61. It is reasonable to treat those as the only alternatives. One could have made a case for analyzing other subsets of amending Part 61, e.g., analyzing the cost to a disposal site operator and agreement state of demonstrating that a site met the standard for not having disposed of large quantities of long-lived isotopes and thus need only satisfy the 1,000-year compliance period. However, that question is now moot, given that the only compliance period under consideration is 1,000 years. Even were that not the case, it is not likely that additional alternative analyses would generate useful information regarding the cost of the rulemaking.

EnergySolutions does not propose that the Commission consider additional alternatives in its regulatory analysis.

### ***Question 2: Are there additional factors that the NRC should consider in the regulatory action? What are these factors?***

Yes, NRC should consider the cost to the generators of depleted uranium (DU) of having to store these waste streams because there is no disposal alternative. The U.S. Department of Energy (DOE) currently is storing 5,400 drums of DU at the Clive site in Utah. This waste was shipped to Clive for disposal in late 2009 for disposal authorized by its Radioactive Material License. The waste was placed in storage because of the uncertainty regarding the prospect of an NRC rulemaking addressing the classification of uranium and it remains in storage to this date. DOE bore the cost of constructing a facility in which to store these wastes, as well as the ongoing costs for storage. The cost to DOE for the construction of this facility was \$1,290,000. Storage fees to date are \$4,800,000.

In addition to this waste stream, DOE stores much larger quantities of DU at its former enrichment facilities at Portsmouth and Paducah. Urenco also stores DU at its commercial enrichment facility in New Mexico because of the lack of a disposal facility. Disposal of these waste streams is dependent upon the NRC completing the rulemaking.

EnergySolutions believes that the NRC should include these storage costs in its regulatory analysis.

### ***Question 3: Is there additional information concerning regulatory impacts that the NRC should include in its regulatory analysis for this rulemaking?***

Yes, there is additional information that the NRC should use in calculating the regulatory impacts of this rulemaking. There exists a significant body of data regarding the cost of the preparation of a performance assessment for a LLW disposal site. The NRC should make use of

this information to prepare a more realistic regulatory analysis than was done for the proposed final rule.

The regulatory analysis goes into great detail regarding the methodology used for the preparation of the cost estimates for the cost to the disposal site operators and agreement states for the implementation of the rule. The end result, however, is a significant underestimation of the costs that is the result of reliance upon unrealistic assumptions. The NRC assumptions regarding the hours necessary to prepare a PA (FTEs), the hourly labor rates, and division of labor are not indicative of real costs actually incurred by licensees.

More importantly, NRC assumptions that disposal site operators would be updating and using existing modeling tools, and that new waste streams are only introduced at the time of license renewal are also incorrect. *EnergySolutions* is using a new model developed specifically for the purpose of preparing a performance assessment to analyze the disposal of DU in a new cell for a 10,000-year compliance period.

*EnergySolutions* does not believe it would be productive for the NRC to invest resources in refining its data. Hypothetical estimates of hourly rates and FTEs will never be more than rough estimates, and there is better information available. Rather, it would be prudent for the NRC to benchmark its estimates against real-world costs.

For its Clive site, *EnergySolutions* has spent approximately \$3,000,000 to date in contractor costs to prepare a PA that demonstrates that DU can be disposed in compliance with the expected parameters of the proposed rulemaking. That cost is for one cell alone, which would be licensed for the disposal of DU and other government waste streams. This cost includes demonstrating compliance for a 10,000-year period, the basis that the NRC used in the preparation of its regulatory analysis. *EnergySolutions'* direct costs for managing this effort and supporting reviews by the Utah Division of Waste Management and Radiation Control (DWMRC) is approximately \$1,500,000.

*EnergySolutions* was also directly billed for the costs incurred by the Utah DWMRC for its review of the PA. These costs exceeded over \$2,000,000 (approximately \$1,700,000 for its contractor and \$320,000 for staff costs) and will ultimately be borne by the generators that dispose of DU at Clive. All of these costs, both *EnergySolutions'* and Utah DWMRC's, are costs to date for an effort that is not yet complete. The final cost will be higher. The costs as of October 2017 are summarized in the table below.

	EnergySolutions	Utah DWMRC
Contractor Costs	\$3,000,000	\$1,700,000
Direct Costs	\$1,500,000	\$320,000
<b>TOTAL</b>	<b>\$4,500,000</b>	<b>\$2,020,000</b>

EnergySolutions has not undertaken any work to prepare an updated PA for its Barnwell site in response to this rulemaking. It is not EnergySolutions' intention to dispose of large quantities of DU at Barnwell. If the proposed rule had gone forward as proposed to the Commission, EnergySolutions would have had to prepare a PA for the site regardless of its intent related to the disposal of DU at the Barnwell site. It is reasonable to assume that the cost would have been comparable to that for Clive, and that the State of South Carolina would have borne costs similar to those borne by the State of Utah.

**Question 4a: Are all costs and benefits properly addressed to determine the economic impact of the rulemaking alternatives?**

No. As described in more detail elsewhere in this response, the regulatory analysis fails to properly quantify the costs of preparing a PA to comply with this rulemaking, and fails even to consider whether there would be increased costs of disposal associated with the rulemaking.

**Question 4b: What cost differences would be expected from moving from the discussed 1,000 year and 10,000 year compliance periods to a single 1,000 year compliance period?**

The principal difference is that the preparation of a PA to demonstrate compliance with a 1,000-year compliance period is a more straight-forward, more credible, more defensible, and less costly exercise than the preparation of a PA for a 10,000-year compliance period. Increasing the performance period is not just a simple matter of changing an input in a PA. Studies to validate the performance of man-made materials (e.g., concrete, steel, and liners), waste forms, and other inputs have not been conducted to demonstrate compliance for 10,000 years. All EnergySolutions' operating disposal sites have PAs that consider time periods that exceed 1,000 years. Thus, in theory, no additional analyses would be required to comply with the proposed revisions to §61.7 and §61.13. Even if additional analyses were necessary to effectively address the disposal of large quantities of DU, the shorter compliance period will be much more straightforward to model, resulting in lower costs.

***Question 4c: Are there any unintended consequences of making this revision?***

EnergySolutions believes that the consequences of making this revision are clear and that they correct the flaws of the final rule as initially proposed by staff. First, from a policy perspective, it corrects the flaw of requiring an active disposal site operator to prepare additional analyses for a site that proposes no changes in operation despite the fact that the NRC has found no safety basis to do so. Second, it corrects the flaw of assuming that there is a valid technical basis for quantifying technical analyses for a period of 10,000 years, which simply is not reasonable.

EnergySolutions does not foresee unintended consequences of the revisions directed by the Commission in the SRM.

***Question 5: Are there any costs that should be assigned to those sites not planning to accept large quantities of depleted uranium for disposal in the future?***

No. The Site-Specific Analysis Rulemaking was initiated to address the disposal of waste streams not previously analyzed, principally depleted uranium.<sup>1</sup> A site not intending to dispose of any of depleted uranium should not be burdened with preparing a costly PA, which would be a cost borne by the generators of waste disposed at such a site.

It is important to note that there would be unintended consequences if the rule had gone forward as proposed to the Commission. That is because at least one of the sites that does not intend to dispose of DU, EnergySolutions' Barnwell site, would have incurred costs for the preparation of a PA that does not address the wastes actually disposed of at the site. Those costs, which could total as much or more than the annual cost of operating the facility, would have been paid by the site's customers and/or from institutional funding sources.

The Barnwell site is the disposal site for the Atlantic Compact, and the majority of the waste disposed at that site is generated by the nuclear utilities that operate reactors in that compact region. These nuclear power plant operators would have had to bear the costs of preparing a PA that has nothing to do with the waste streams that are disposed of at Barnwell. Disposal pricing for the Barnwell facility is calculated based on the costs of operating the facility, and these costs

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<sup>1</sup> While the rulemaking is described as addressing other waste streams, e.g., blended waste, the principal focus is on depleted uranium. To the extent that the disposal of large quantities of blended waste also goes beyond the analyses prepared at the time Part 61 was promulgated, that omission is not relevant at a site that takes Class A, B, and C wastes. Low level radioactive wastes are blended for the purpose of creating a lower classification waste stream, which is not necessary for disposal at a site that has been licensed for the disposal of all LLW classes of waste. Both of the sites that have stated they do not intend to dispose of large quantities of DU are licensed to accept Class A, B, and C waste; therefore, the issue of whether or not blended waste was properly analyzed in the original promulgation of Part 61 is moot because these sites are already licensed to accept Class C waste.

are then recouped on a per cubic foot basis from the generators in the region. Assuming, as described above, that the cost for preparing a DU PA for Barnwell would be roughly the same as that for Clive, the Atlantic Compact generators would have had to bear the cost of preparing a PA that is equivalent to the annual cost of operating the facility. That is to say, the per cubic foot price for the disposal of waste in the Atlantic Compact would have at least doubled for that time period with no benefit whatsoever to the generators of the waste

***Question 6: Is NRC's assumption that only two existing LLRW sites (i.e., EnergySolutions' Clive Utah disposal facility and Waste Control Specialists' Texas disposal facility) plan to accept large quantities of depleted uranium for disposal in the future reasonable?***

EnergySolutions can only answer this question on its own behalf and does not speak for the other site operators. We can say that we do not intend to dispose of large quantities of DU at our Barnwell disposal facility. We do intend to take large quantities of DU for disposal at our Clive disposal facility.

***Question 7a: What additional costs or cost savings, not already considered in the draft regulatory analysis, will the supplemental proposed rulemaking or alternatives cause to society, industry, and government?***

The draft regulatory analysis, considers, but fails to properly quantify, the cost to disposal site operators of preparing the necessary technical analyses to comply with the rulemaking. As described above, the NRC should substitute more realistic costs for those included in the regulatory analysis.

***Question 7b: What are the potential transfer ("pass-through") costs to the waste generators and processors?***

Any costs that are associated with the additional analyses necessary to comply with the rule will ultimately be passed on to the waste generators and processors who dispose of their waste at Clive. In addition, it is possible that a site (or more likely, an individual disposal cell at a site) that is used for the disposal of depleted uranium will be designed, constructed, and operated in a way that is more restrictive, and therefore costly, than would normally be the case for a Class A disposal cell. These increased costs would be passed on to generators or processors that ship waste for disposal in that cell.