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**Subj: Comments of URENCO USA on NRC “Draft Regulatory Analysis for Final Rule: Low-Level Radioactive Waste Disposal” (RIN 3150-AI92; Docket ID NRC-2011-0012), 82 *Fed. Reg.* 48283 (October 17, 2017)**

On October 17, 2017, the Nuclear Regulatory Commission (NRC or Commission) published a Federal Register Notice, 82 *Fed. Reg.* 48283 *et. seq.*, dated October 17, 2017 (Notice), requesting public comment on the draft regulatory analysis prepared as part of its final rule package to amend 10 C.F.R. Part 61 governing low level radioactive waste (LLRW) disposal facilities (see SECY-16-0106, dated September 15, 2016). The Notice specifically indicated that a primary reason for seeking public comment was due to the Commission’s direction in SRM-SECY-16-0106, dated September 8, 2017, to “be informed by broader and more fully integrated, but reasonably foreseeable, costs and benefits to the U.S. waste disposal system resulting from the proposed rule changes, including pass-through costs to waste generators and processors.” (Commission Directive) See 82 *Fed. Reg.* at 48284. The Notice set forth seven (7) specific questions for comment, which to the extent practicable, are addressed in detail below.

UUSA, as the only operating commercial enrichment facility in the United States, is concerned that the proposed rule would result in new waste acceptance criteria and other restrictions that would make it more difficult for enrichment facilities to dispose of significant quantities of DU waste. As such, the proposed rule would also significantly affect uranium enrichment facility licensees such as URENCO USA (UUSA), which is fully responsible for the management and disposal of its depleted uranium (DU) waste in a LLRW disposal facility. Therefore, it is imperative that the NRC staff fully follow the Commission’s directive noted above, and in so doing, carefully consider all comments to the Notice.

As UUSA has commented previously, it is not opposed to the NRC’s present rulemaking, and appreciates the NRC staff’s significant efforts with respect to addressing complicated LLRW disposal issues. However, UUSA believes that, as a matter of sound regulatory policy, the NRC should, as specifically directed by the Commission, comprehensively evaluate the significant costs and perceived benefits that the rulemaking could have on the overall regulated community, including generators of LLRW, and not just disposal facilities.

## Summary of Key Positions

UUSA provides its detailed comments below; however, for the Commission's convenience, we summarize our key positions:

- The Notice makes clear that the seven (7) questions were predicated on Item No. 5 as set forth in the Commission's Directive, SRM-SECY-16-0106. Item No. 5 is specific to being more fully informed on both benefits and costs to waste disposers and pass-through costs to waste generators. The Commission specified its wording for Item No. 5 very carefully. It is, therefore, critical that the NRC Staff not only address each aspect of this Directive, but explain in sufficient detail the bases for its responses.
- NRC's cost analysis should utilize the most up-to-date guidance for conducting such analyses. Although draft NUREG/BR-0058, Rev. 5 may not be final, given the advanced nature of the draft guidance and the importance of using the up-to-date methods, it is inadequate to rely on outdated guidance when up-to-date guidance exists.
- Based on data provided by the Department of Energy (DOE), UUSA believes that the enhanced technical requirements of the proposed rule could impose disposal costs in excess of \$70 million, as well as genuine operational challenges. There can be no doubt that the pass-through of these costs will have a direct and substantive impact on generators like UUSA.
- It is important that the Commission staff reach out to all Disposers, including the potential for new future Disposers, to ensure accurate cost estimates to the extent possible on a per-unit basis.

## UUSA's Interest

The NRC's Part 61 rulemaking came about as a result of the licensing of the UUSA facility. During initial facility licensing, the Commission directed the NRC staff to evaluate the disposal of significant quantities of DU waste generated by uranium enrichment facilities. While the staff's original rulemaking efforts were subsequently expanded and bifurcated into the present rulemaking and a separate waste classification rulemaking, they both originated with the issues raised in the UUSA initial licensing proceeding regarding the potential for disposal of large quantities of DU waste from uranium enrichment facilities.<sup>1</sup>

The UUSA facility, located near Eunice, New Mexico, is the only operating commercial enrichment facility in the United States today. UUSA has expanded the capacity of the facility from the original nominal capacity of some 3 million separative work units (SWU) to just under 5 million SWU and is further authorized by the NRC to expand up to 10 million SWU. If the Part 61 rulemaking results in the imposition of more stringent criteria for disposing of DU waste in LLRW disposal facilities or

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<sup>1</sup> The waste classification tables in Part 61 specify criteria for classifying LLRW for land disposal at a near-surface facility. The original development of Part 61 did evaluate depleted uranium, but not in the quantities generated at uranium enrichment facilities. See, e.g., NUREG-0945, Vol 1, "Final Environmental Impact Statement on 10 CFR Part 61 Licensing Requirements for Land Disposal of Radioactive Waste: Summary and Main Report" at S-21 (in the discussion of "Isotopes Considered for Waste Classification Purposes," the NRC noted that in the draft environmental impact statement, a total of 23 different moderately or long-lived radionuclides were considered in the analysis, including DU).

otherwise restricts the number of LLRW disposal facilities that are able to accept DU waste in significant quantities, then UUSA's disposal options could decrease and its related costs would significantly increase, possibly forcing UUSA to store significantly more quantities of DU waste onsite and/or for longer periods. The disposal issue is further complicated by the Part 61 waste reclassification issue that could potentially result in some existing LLRW disposal facilities being unable to accept DU waste (which is to be addressed in a rulemaking subsequent to, and not part of, the final Part 61 rule publication).

These outcomes would have significant adverse financial impacts on UUSA. Given the soft market conditions for uranium fuel following the Fukushima accident, any increase in operational or LLRW disposal costs would create a challenge to continued long term future operations and adversely impact decisions regarding further capacity expansion of the UUSA facility. We note that several nuclear companies have reported financial challenges already this year due to weak conditions in the marketplace, including a material impairment recently reported by UUSA's parent company, URENCO Ltd., against its U.S. based enrichment facility. The possibility of increased costs of LLRW disposal due to new Part 61 requirements will only exacerbate the current financial challenges faced by UUSA and other industry participants.

It is also noted that the nature of the centrifuge technology is such that the machines run continuously over very long time periods. Enrichment facilities with URENCO have been in operations in Europe for over 40 years with continued capital investment. Such longer term facility operation, beyond the current license period of 30 years, is clearly a future consideration for UUSA as dictated by market conditions, along with the process of a licensing extension request. Therefore any changes to waste classification or storage requirements that result in increased cost have a significant cost impact beyond any current estimates.

Based on UUSA's contact with several disposal facility operators across the United States, we understand that increased costs of new requirements resulting from the rulemaking will be passed on to generators, like UUSA, on a dollar-for-dollar basis. Even the NRC's current draft Regulatory Analysis shows some increased costs to disposal facility licensees.<sup>2</sup> Thus, there can be no doubt that the pass-through of such costs will have a direct and substantive impact on generators like UUSA.

The UUSA facility is critical for economic, energy security, and national security/nonproliferation reasons. Uranium enrichment is necessary for the production of fuel for U.S. commercial nuclear power plants. The demand for uranium enrichment services is expected to remain relatively strong in the United States and worldwide, particularly with the continued increased growth of nuclear energy around the globe. For these reasons, Congress has recognized the strategic importance of U.S. domestic uranium enrichment capability.<sup>3</sup>

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<sup>2</sup> *Draft Regulatory Analysis for Proposed Rule: Low-Level Radioactive Waste Disposal Low-Level Radioactive Waste Disposal (10 CFR Part 61)* (Feb. 2015) at iv, 23.

<sup>3</sup> Congress has characterized uranium enrichment as a "strategically important domestic industry of vital national interest," "essential to the national security and energy security of the United States," and "necessary to avoid dependence on imports." S. Rep. No. 101-60, 101st Congress, 1st Session 8, 43 (1989); Energy Policy Act of 1992, 42 U.S.C. Section 2296b-6. National security and defense interests require assurance that the nuclear energy industry in the United States does not become unduly dependent on foreign sources of uranium or uranium enrichment services (S. Rep. No. 102-72, 102nd Congress 1st Session 144-45 (1991)), and domestically produced enriched uranium may also further non-proliferation goals. *Ibid.*

In terms of long-term U.S. energy security, the Energy Information Administration's annual reports on uranium marketing show that the bulk of enrichment supply (generally over 70%) for U.S. nuclear power plants is foreign-based – including suppliers in Russia, China and France that are typically subsidized by their governments and would not be subject to the differential costs resulting from new requirements imposed by the present rulemaking. In this environment, discouraging the expansion of U.S.-based commercial enrichment services, by imposing new LLRW disposal requirements and costs not borne by most foreign providers, would further challenge the availability of long-term domestic enrichment services to U.S.-based utilities. This result would present a further challenge to the U.S. nuclear industry at a time when many merchant nuclear generating plants in competitive markets are facing economic stress despite the significant environmental and economic benefits nuclear energy produces for the country.<sup>4</sup>

The intent of the comments provided is to address cost, however UUSA reserves its right to comment in future proposed comment periods on other aspects of the rule.

## **Comments on the Questions Presented in the Notice**

### **General Comments Regarding the Commission's Directive to the NRC staff**

The Commission provided clear direction in SRM-SECY-16-0106 regarding the draft final rule. The bases and assumptions used by the NRC staff to develop the current draft Regulatory Analysis are not sufficient. To properly develop a Regulatory Analysis, the NRC should revise these bases and assumptions to explicitly and fully address each critical attribute of the Commission Directive, namely:

- 1) *Develop a "broader and more fully integrated" cost-benefit analysis;*
- 2) *Consider all "reasonably foreseeable" costs and benefits "resulting from" the proposed rule changes, including "pass-through costs to waste generators and processors;" and*
- 3) *Consider the impact to "the U.S. waste disposal system."*

Since the Commission did not define these critical attributes, UUSA believes that it is important that the NRC staff explain in its revised Regulatory Analysis how the staff responded to each attribute so that the public can understand the staff's approach and, if necessary, comment upon it during the future comment period.<sup>5</sup>

To assist the NRC staff, we provide the following considerations for each of these critical attributes.

#### **1) *Develop a "broader and more fully integrated" cost-benefit analysis***

It is clear that the Commission believes a comprehensive cost-benefit analysis should be performed for the proposed rule changes, as opposed to the more narrowly focused approach taken in the

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<sup>4</sup> See *The Nuclear Industry's Contribution to the U.S. Economy*, the Brattle Group (July 2015) (estimating that the U.S. nuclear industry contributes some \$60 billion annually to GDP and lowers average annual CO2 emissions by 573 million tons).

<sup>5</sup> This step is extremely important to ensure that a full and understandable record is made regarding the NRC staff's actions in response to the Commission Directive – in particular because as the Notice clearly states, "the NRC staff does not plan to provide a response to these comments [that respond to the Notice]" (82 *Fed. Reg.* at 48284.)

current draft Regulatory Analysis (which did not take into account the broader impact on enrichment facilities and the LLRW disposal system as a whole).

In considering what should be included in the cost-benefit analysis for the supplemental proposed rule, the NRC should be guided by the policy reflected in Executive Orders (EO) 12866 (1993) and 13563 (2011), which the NRC has committed to meet the spirit of these EOs. In addition, the NRC should be guided by the Supreme Court's recent decision in *Michigan v. EPA* (holding that costs to regulated entities are always a relevant factor in an agency rulemaking and that "cost" includes more than the expense of complying with regulations; any disadvantage could be termed a cost"). Consistent with these authorities, the NRC should perform a cost-benefit analysis that takes into account a broad range of costs and other impacts of the proposed rule changes, including the pass-through costs to LLRW generators and processors (discussed further below).

To ensure that the NRC staff develops the most up-to-date analysis, the staff should apply its most recent guidance in this area. Specifically, due in part to a 2014 GAO report (GAO-15-98), NRC has proposed substantive enhancements to its *Regulatory Analysis Guidelines* (draft NUREG/BR-0058, Rev. 5), which includes guidance on performing cost-benefit analysis. (See 82 FR 18163 et seq., dated April 17, 2017). Among other things, this updated guidance includes an appendix addressing how "qualitative factors" should be considered in Regulatory Analyses (and back-fitting cost-benefit analyses) consistent with the Commission's guidance in SRM-SECY-14-0087. In that SRM, the Commission directed that the staff should use quantitative analyses "to the extent possible" and use qualitative factors only to "inform decision making, in limited cases, when quantitative analyses are not possible or practical."<sup>6</sup>

Although draft NUREG/BR-0058, Rev. 5 has not been issued as final yet, given the advanced nature of the draft guidance the NRC staff should nevertheless apply the enhanced cost-benefit protocols to the re-evaluation of the draft Regulatory Analysis.

***2) Consider all "reasonably foreseeable" costs and benefits "resulting from" the proposed rule changes, including "pass-through costs to waste generators and processors"***

In SRM-SECY-16-016, the Commission directed the staff to consider all "reasonably foreseeable" costs and benefits "resulting from" the proposed rule changes. We believe this means more than just the direct compliance costs that would be incurred by LLRW disposal facility operators; it means that reasonably foreseeable indirect costs also should be considered. And, whether direct or indirect foreseeable cost impacts, these costs must be considered for waste generators and processors (such as uranium enrichment facility operators that generate large quantities of DU) as well as waste disposal operators.

During prior comments, UUSA presented evidence that a commercial disposal facility would be able to pass through on a "dollar-for-dollar" basis any additional costs it incurred to comply with the rule changes. In fact, UUSA has been told this by one of the likely disposal site operators. Because of the limited LLRW disposal options available, such a dollar-for-dollar pass-through is reasonably foreseeable. It is also reasonable to assume that any waste disposer who states they can already meet the requirements of the new proposed rule could increase their disposal cost fees regardless.

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<sup>6</sup> This guidance is consistent with the concerns Congress has expressed to the NRC about reliance on qualitative factors. See letter from Rep. Upton and other members to then Chairman Macfarlane, dated September 19, 2014.

They are under no obligation to restrict such cost increases, especially if any competitors are required to make additional investments to comply which they would then need to pass along to waste generators. Accordingly, the cost impact “resulting from” the NRC’s rule changes would actually fall on a generator like UUSA, and not the commercial disposal facility. For this reason, the Regulatory Analysis for the rulemaking must consider costs to generators like UUSA who would be disposing of large quantities of DU.

Similarly, the NRC must consider the pass-through costs of a federal (DOE) disposal option for DU as part the supplemental rulemaking effort. The DOE disposal option is a pass-through cost to UUSA because DOE is required to bill UUSA “in an amount equal to the Secretary’s costs.” See [42 U.S.C. § 2297h-11\(a\)\(3\)](#). How DOE itself plans to dispose of any DU it takes from UUSA is not completely defined, but from DOE’s most recent filings, it appears that it is considering commercial sites, including the EnergySolutions site in Utah and the WCS site in Texas, as options for final disposition of DOE’s own DU stockpiles. *Notice of Intent To Prepare a Supplemental Environmental Impact Statement for Disposition of Depleted Uranium Oxide Conversion Product Generated From DOE’s Inventory of Depleted Uranium Hexafluoride*, [81 Fed. Reg. 58,921](#), 58,922 (Aug. 26, 2016). Therefore, it is likely that DOE will consider final disposition at a commercial facility as part of its updated costs estimate for UUSA.

From a regulatory standpoint, the DOE disposal option is the primary path forward for UUSA to address DU as waste, and therefore the NRC staff must consider this factor despite their being a separate commercial option that *theoretically* exists. The NRC licensed the UUSA facility on the basis of the DOE disposal option, as the costs of private sector disposal were too theoretical at that time to substantiate. See *Louisiana Energy Services* (Natl. Enrichment Facility), CLI-06-22, 64 NRC 37 (2006). The NRC recognizes the critical role the DOE disposal option plays in the UUSA licensing basis, as it requires that the facility’s decommissioning funding assurance increase in line with increases in the DOE cost estimate. See SNM-2010 License Condition 16.d (“The total amount funded for depleted uranium disposition shall be no less than the updated DOE cost estimate.”). Therefore, a proper reading of the Commission SRM is that the NRC staff must review the DOE disposal option and related cost estimates as part of the supplemental proposed rule to revise Part 61.

Finally, from the public records, it does not appear that any of the existing LLW facilities have disposed of large quantities of DU - the primary focus of the Part 61 rulemaking. Without these existing facilities, either on their own volition or through DOE, providing realistic cost data to the NRC, its cost/benefit analysis will be hampered. UUSA recognizes that there may be special challenges when seeking such information, such as claims that the information constitutes proprietary data or analyses, whose disclosure is likely to be limited by confidentiality agreements. However, such data and/or analysis are probably the best, if not the only, means of assuring an accurate cost/benefit analysis. UUSA believes it is critical that the NRC reach out to these entities for such realistic cost input and, in fact, that it is mandated by the Commission’s directive to consider all reasonably foreseeable costs and benefits.

### **3) Consider the impact to “the U.S. waste disposal system”**

It is noteworthy that the NRC directed the staff to analyze costs and benefits to “the U.S. waste disposal system.” Among others implications, it appears that the Commission is concerned that the proposed rule changes not have an adverse effect on the overall the current U.S. Compact system



for LLRW disposal. Under the U.S. Compact system, only four licensed LLRW disposal facilities are operating today. Of these, only the EnergySolutions Clive facility in Utah and the WCS facility in Andrews currently appear to be most likely disposers for generators of DU, including UUSA. The LLRW Policy Act of 1980 authorizes the states to form interstate Compacts, which in turn have the legal authority to restrict access to their regional disposal facilities. So a commercial generator's access to LLRW disposal depends on where the generator is located, and even with access, it may be subject to additional fees as an out-of-Compact generator (e.g., both exit and entry fees) and other restrictions (e.g., physical limits on out-of-Compact disposal amounts). Because these fees and restrictions will present substantive impacts to out-of-Compact generators, it is imperative that these aspects be fully evaluated and included in the NRC staff's cost analysis.

Another key aspect of the U.S. LLRW disposal system is that Agreement States regulate all four of the operational LLRW disposal sites. In its proposed rulemaking for Part 61, the NRC concluded that for disposal licensees in Agreement States, the compatibility requirement would be Category Level C for some of the most significant provisions of the new rule, such as the technical analyses required under proposed 10 CFR 61.13. Under that category and consistent with its 1997 Policy Statement on Agreement State compatibility, the NRC stated that a state program "should embody the essential objective of the corresponding Commission program elements."

NRC, however, recently announced an enhanced *Agreement State Program Policy Statement*. In this newly revised Policy Statement, the NRC indicated that states may be more restrictive than NRC program elements; "however, they should not be so restrictive as to prohibit a practice authorized by the AEA and in the national interest without an adequate public health and safety or environmental basis related to radiation protection." Thus, NRC has effectively established a floor and ceiling for how states may implement the Part 61 requirements for disposal site licensees in Agreement States.

Given this guidance, UUSA believes that in order to effectively implement the Commission's directive in SRM-SECY-16-016, the NRC staff must evaluate whether state requirements for disposers are too restrictive, in particular with regard to UUSA who, as the only domestic enricher for the US, has a strategic national interest role. As part of this evaluation, the NRC should consider requesting the affected Agreement States to provide information on their compliance plans, as well as compliance plans from the licensed disposal facilities in their jurisdictions, which should include information on expected compliance costs. In this way, the NRC can evaluate whether state requirements would be overly restrictive or contrary to the national interest, including the national security interest in maintaining a domestic source of uranium enrichment.

Finally, while the NRC has decided to address waste classification until after the Part 61 rulemaking effort is completed, the NRC staff should nevertheless be cognizant of the impacts to the U.S. waste disposal system that changing the classification of DU could have and, thus, should factor such implications into its cost analysis (if the NRC chooses not to do so, the agency should commit to re-opening the Part 61 rulemaking if changes in classification could reasonably result in substantive impacts on the U.S. waste disposal system, and in particular impacts the disposal of DU).

## Specific Comments on NRC's Questions

Below UUSA responds to certain specific questions listed in the Federal Register notice on which the NRC seeks input.

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

As a general matter, UUSA believes the NRC should refine and add to the alternatives evaluated in the draft Regulatory Analysis. A key purpose of a regulatory analysis is to help the NRC evaluate reasonable alternatives for the regulatory action. As the NRC's *Regulatory Analysis Guidelines* state, "[i]dentifying and evaluating alternative approaches to resolve problems is a key element in meeting the NRC's regulatory analysis policy."<sup>7</sup> In discussing the identification of alternatives, the guidelines state that the "initial set of alternatives should be broad and comprehensive but should also be sufficiently different to provide meaningful comparisons and to represent *the spectrum of reasonable possibilities*."<sup>8</sup>

In contrast, the draft Regulatory Analysis here (in section 2) evaluates only two alternatives for the rulemaking: (1) the no-action alternative – *i.e.*, "maintain the [Part 61] regulations as written" or (2) adopt the proposed rule changes. Instead of evaluating the "spectrum" of reasonable alternatives, the draft Regulatory Analysis evaluates only the two extremes – either no change at all or the extensive proposed amendments to Part 61. The draft Regulatory Analysis makes no meaningful effort to identify, much less evaluate, lesser alternatives that could achieve the essential goals of the rulemaking but reduce the burden on affected entities.

As a threshold matter, then, the draft Regulatory Analysis appears inadequate in its consideration of alternatives. Potential alternatives might include using different periods of analysis or requiring fewer or less burdensome new analyses. For example, one alternative would be to use a single 1,000 year compliance period, without a performance period assessment beyond 10,000 years, consistent with item 2 in the Commission's SRM (regarding reinstating the 1,000 year compliance period).

A second concern is that the NRC's Regulatory Analysis should address other reasonable options for depleted uranium disposal. The draft Regulatory Analysis indicates that the only two disposal facilities for large quantities of DU are the EnergySolutions Clive, Utah facility and Waste Control Specialists LLC (WCS) at Andrews, Texas. DOE, however, has identified a third option -- the Nevada Test Site (now known as the Nevada National Security Site or NNSS) in Nye County, Nevada. Further, the analysis should consider the possibility of a new, as of yet not defined, location for a waste disposer to operate under the rule, *i.e.*, the analysis should consider a range of facilities and locations.

For over a decade DOE has recognized that the NNSS is a viable option for DU disposal. In 2004, DOE issued two site-specific environmental impact statements (EISs) and two records of decision (RODs) ([DOE/EIS-0359](#) and [DOE/EIS-0360](#)), addressing the management and disposition of approximately 760,000 metric tons of depleted uranium hexafluoride in about 63,000

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<sup>7</sup> *Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission, Draft Report for Comment*, NUREG/BR-0058, Rev. 5 (published April 2017), at 2-10.

<sup>8</sup> *Id.* at 2-10 (emphasis added).



cylinders. When the RODs were issued, DOE deferred a decision on the transportation and disposition of the DUF<sub>6</sub> conversion product for additional NEPA review. At the time, two proposed disposal locations were considered: the DOE-owned LLRW disposal facility at the Nevada Test Site (now NNSS), and the Envirocare facility in Utah (now known as EnergySolutions).

Subsequently, in a draft Supplemental Analysis (SA) issued in 2007 to evaluate whether a Supplemental EIS (SEIS) would be needed, DOE assessed the impacts of off-site transportation and disposal at EnergySolutions and/or the NNSS. See DOE/EIS-0359-SA1 and DOE/EIS-0360-SA1 at 1-2; DOE Office of Environmental Management, "[Disposition of Uranium Oxide From Conversion of Depleted Uranium Hexafluoride](#)." DOE determined in the draft SA that an SEIS would not be required for the proposed action. However, it delayed finalizing the SA, to see whether WCS would be able to take DU waste too, and, if so, whether it should include WCS in its NEPA analysis.

DOE subsequently decided to prepare an SEIS, given the time that passed since the original EISs and draft SA, and the fact that WCS was now an additional candidate to accept DU waste. In August 2016, DOE announced its plans to prepare an SEIS in a Notice of Intent.<sup>9</sup> It appears this NEPA action remains ongoing. DOE Office of Environmental Management, "[Disposition of Uranium Oxide From Conversion of Depleted Uranium Hexafluoride](#)." In any case, DOE has been consistent in pursuing DU disposal at three sites -- EnergySolutions, WCS, and NNSS.

Thus the NRC, in the Part 61 Regulatory Analysis, should address whether a federal disposal facility such as the NNSS should be an option for DU waste from a commercial enrichment facility, and evaluate the costs and benefits of that option. As a matter of regulatory consistency, the NRC's evaluation of alternatives for DU waste disposal should parallel DOE's analysis of the same subject. Moreover, the Regulatory Analysis should consider what the potential impact would be if DOE were to decide to dispose of its DU inventories at the NNSS facility. In that scenario, the quantities of DOE's DU waste to be disposed of at the commercial LLRW disposal sites may be significantly reduced, potentially resulting in higher costs for generators who utilize the commercial LLRW disposal sites.

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

As reported in June 2017, the U.S. District Court for the District of Delaware entered an order enjoining the merger proposed between EnergySolutions and Waste Control Specialists. This decision highlights the substantial concern about competition in the waste disposal industry, an industry that the evidence demonstrated is incredibly difficult to enter.

Although the Court's decision ostensibly preserves the "opportunity" for competition, sufficient competition is still not assured as, at most, there may be only two LLW disposal sites available to accept large quantities of DU (in fact, right now, there is only one). Given this specter, it is important that the NRC Staff's review consider the implications of limited competition and how the market for such disposal services is affected. As noted above, waste disposers may not be

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<sup>9</sup> See DOE, Notice of Intent to Prepare a Supplemental Environmental Impact Statement for Disposition of Depleted Uranium Oxide Conversion Product Generated from DOE's Inventory of Depleted Uranium Hexafluoride, 81 Fed. Reg. 58,921, 58,922 (Aug. 26, 2016), available at <https://www.gpo.gov/fdsys/pkg/FR-2016-08-26/pdf/2016-20501.pdf>.

under any cost increase limitations despite their current level of compliance with the new rule, especially if any competitors were required to make additional investments.

Under E.O. 12866 (which the NRC is not required to follow, but has generally committed to consider), cost-benefit analysis best-practices indicate that where market power by existing industry participants could be unduly exercised (e.g., due to limited competition and/or other factors such as compact fees and volume restrictions), federal agencies should evaluate whether there could be realistic impacts on the waste disposal market. This is particularly important here where the market cost are relatively non-transparent.

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

As discussed in the comments submitted by UUSA on July 23, 2015 for NRC-2011-0012-077, Low Level Radioactive Waste Disposal Rulemaking, this rulemaking unequivocally results in additional regulatory impact which is currently not included in the regulatory analysis. With the Part 61 rulemaking resulting in the imposition of more stringent criteria for disposing of DU waste in LLRW disposal facilities or otherwise restricting the number of LLRW disposal facilities that are able to accept DU waste in significant quantities, then UUSA's disposal options decrease and its related costs could significantly increase, possibly forcing UUSA to store significantly more quantities of DU waste onsite and/or for longer periods. This could also force UUSA to seek other de-conversion and disposal options. UUSA's operating license would then require an amendment to reflect the larger quantity and prolonged storage needs.

***Question 4: Are all costs and benefits properly addressed to determine the economic impact of the rulemaking alternatives? 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? Are there any unintended consequences of making this revision?***

UUSA supports the Commission's decision to align a 1,000 year compliance period. Additionally, UUSA questioned any technical basis that would support the 10,000 year compliance period.

***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?***

UUSA is not providing any input on whether any costs should be assigned to those sites not planning to accept large quantities of DU for disposal in the future.

***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?***

As discussed in the response to Question #1, UUSA believes that this assumption is not reasonable and should consider the addition of a DOE disposal option and possibly a new waste disposer should there be financial interest to license such a site.

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

Previously, it appears that the NRC has considered the projected costs to the radioactive waste disposal repositories as one-time costs of compliance. However, it cannot be disputed that any change in the disposal techniques associated with DU will result in a "per-unit" cost increase. For example, if compliance with the Part 61 revision necessitates deeper burial of DU, there will be a fixed "per-unit" cost increase passed through to generators like UUSA. This is not a one-time cost; and its impact is dependent upon the disposal volume required and its application over an extended time line (most likely beyond the current 30 year license should UUSA seek to extend the license).

Each year the DOE provides UUSA with a depleted UF<sub>6</sub> de-conversion and disposal cost estimate for use in UUSA decommissioning funding. The disposal portion of this estimate includes cost information from two DU disposal site options. WCS, an agreement state site in Texas, has stated that they are currently in compliance with the proposed revision. WCS represents the ceiling of the DU disposal estimate provided to UUSA by the DOE.

UUSA will produce approximately 133,000 MT of depleted UF<sub>6</sub> over a nominal 30 year operating life. This equates to a DU disposal volume of approximately 75,000 yd<sup>3</sup>. The current costs for disposal under the existing Part 61 rule range from \$569.43/yd<sup>3</sup> to \$1,517/yd<sup>3</sup> (WCS disposal option). Therefore, total disposal costs under the existing rule range from \$43,000,000 to \$114,000,000 (WCS disposal option).

The low end potential cost of DU disposal of \$43,000,000 is most likely not compliant with the revised Part 61 rule while the high end of \$114,000,000 is compliant with the revised rule. UUSA will lose any option aside from the higher end cost, and, therefore, it can be assumed that the potential cost increase to UUSA due to this rulemaking could be as high as \$70,000,000 in 2017 dollars. Additionally, UUSA may extend the operating life of the enrichment plant well beyond 30 years. UUSA may also expand the capacity of the plant up to the current licensed limit of 10 million SWU when market conditions improve in the future. Accordingly, the \$70,000,000 cost to UUSA can be considered to be a conservatively low estimate of the passed through costs of the revised rule. The existing Regulatory Analysis does not include this significant cost impact due to pass-through costs from the disposer.

As already noted, there may be only two, or one, commercial options for DU disposal, WCS and the EnergySolutions facility in Clive, UT. It is required that the NRC consider this and obtain the additional information necessary to perform an adequate regulatory analysis from low-level waste repository operators like EnergySolutions, including the possibility of other disposers. This regulatory analysis must include consideration of "per-unit" cost increases that will be passed through to generators like UUSA.

\* \* \* \* \*

UUSA appreciates the efforts of the NRC and the opportunity to comment on the questions presented in this Notice. If you have any questions, please contact Wyatt Padgett, Licensing and Performance Assessment Manager, at 575-394-5257.

Respectfully,

A handwritten signature in black ink, reading "Stephen R. Cowne". The signature is fluid and cursive, with the first name "Stephen" and last name "Cowne" clearly legible.

Stephen R. Cowne  
Chief Nuclear Officer and Head of Compliance