WASTE CONTROL
SPECIALISTS LLC

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U.S. Nuclear Regulatory Commission
Chief, Rulemaking and Directives Branch
Division of Administrative Services
Office of Administration
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RULES AND DIRECTIVES BRANCH

References: (1) Radioactive Material License No. R04100

(2) Letter from William P. Dornsife, P.E. (WCS), to Dale Klein, Ph.D. (NRC), re "Information for Consideration by the Commission at Scheduled 04/17/09 Briefing on Low-Level Radioactive Waste", dated April 6, 2009

(3) Federal Register, Volume 74, Number 120, pp. 30175-30170, published on June 24, 2009

Subject: Comments Regarding Potential Rulemaking For Safe Disposal Of Unique Waste Streams Including Significant Quantities Of Depleted Uranium

Dear Sir or Madam:

Waste Control Specialists LLC (WCS) has already submitted comments for consideration by the Commission pertaining to depleted uranium as well as other topics on Low-Level Radioactive Waste (LLW) policy (Reference 2). We were invited and participated in subsequent public workshops that were held on this matter in Rockville, Maryland, and Salt Lake City, Utah. WCS today respectfully submits additional comments on the subject rulemaking initiative for disposal of unique waste streams, including significant quantities of depleted uranium, as requested by Reference 3. These comments are intended to reinforce and supplement the previous comments in Reference 2 and those provided as a participant in the workshops.

WCS received a final license (Reference 1) to dispose of LLW from the Texas Commission on Environmental Quality (TCEQ) on September 10, 2009. This is the only disposal license issued in the U.S. that was fully reviewed under 10 CFR Part 61 requirements and technical standards. The performance assessment (described below) that supported the issuance of the license considered significant depleted uranium waste streams and demonstrated that human health and the environment would be protected not just for the next 1,000 years, but for hundreds of thousands of years into the future. However, TCEQ was reluctant to authorize disposal of these significant depleted uranium waste streams while NRC is considering

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rulemaking in this regard. As a result, the final LLW disposal license that TCEQ issued to WCS allows for the disposal of only certain limited waste streams of depleted uranium.

WCS believes that the technical issues associated with the disposal of significant quantities of depleted uranium, as identified in the documentation associated with this potential rulemaking and discussed in detail at the public workshops, have been fully resolved for its facility in Andrews County, Texas. We therefore encourage NRC to proceed expeditiously with this rulemaking, so that Texas as an Agreement State can promptly establish conforming regulations, thus allowing WCS to pursue a license amendment to authorize the disposal of depleted uranium at its facility.

More importantly however, in the interim, WCS encourages NRC to work with its Agreement States to ensure consistent nationwide implementation of either (1) existing regulations or (2) a uniform depleted uranium disposal ban pending completion of the NRC's rulemaking and issuance of subsequent Agreement State conforming regulations and issuance of appropriate conforming license amendments by individual Agreement States to their licensees.

GENERAL COMMENTS

As the Commission contemplates moving forward with a rulemaking on this topic, significant effort will be needed to understand the regulatory philosophy of each of the Agreement States that currently host radioactive waste disposal facilities. NRC needs to ensure that the rule addresses potential differences in regulatory philosophies by requiring strict compatibility with the rules that are promulgated and strong oversight on uniform implementation of guidance. As such, WCS strongly encourages NRC to provide specific directions to the licensed community on how to proceed in the interim. Specifically, NRC should provide written guidance on how licensees and Agreement States should proceed to determine whether or not a performance assessment is sufficient to allow for the timely disposal of significant quantities of depleted uranium until such time rulemakings by both NRC and Agreement States are finalized.

SPECIFIC COMMENTS

II. Issues With Disposal Of Unique Waste Streams

Issue II–1. Definition of Unique Waste Streams

WCS Comment: WCS does not believe that a definition for a unique waste stream is needed. However, NRC should evaluate all other waste streams assessed in the *Final Environmental Impact Statement on 10 CFR 61 Licensing Requirements for Land Disposal of Radioactive*

Waste (NUREG-0945) containing long-lived radionuclides to determine if other unique waste streams exist that may require additional measures to protect public health and the environment. One such waste stream that should be evaluated is other source material waste streams that exhibit the same long-term hazards as depleted uranium.

Issue II–2. Time Period of Performance

WCS Comment: WCS strongly believes that NRC should promulgate a time period of performance as part of the rulemaking to address the long-term hazards unique to large quantities of depleted uranium. In defining the time period of performance, NRC is encouraged to promote environmental fate and transport models that preferably requires a quantitative and at least qualitative assessment of the impacts to human health and the environment. Given that the hazards associated with depleted uranium do not peak until long after 10,000 years, the time period of performance should be at least 10,000 years and include additional quantitative or qualitative analysis or requirements to address the period beyond.

WCS encourages NRC to consider the philosophy used by the TCEQ to license[1] WCS' LLW disposal facility in Andrews County, Texas. In its licensing review, TCEQ regulations require a minimum period of performance[2] of 1,000 years after site closure or the period where peak dose occurs, whichever is longer. Under these provisions, WCS was required to demonstrate that the site characteristics were suitably analyzed for a period of 50,000 years, inclusive of climate changes (specifically assuming twice the rainfall), and included in the performance assessment a requirement to evaluate peak dose to infinity. Accordingly, WCS believes that it has demonstrated that its site in Andrews County, Texas, is protective of the long-lived hazards posed by large quantities of depleted uranium (including waste from deconversion processes) to public health and the environment. WCS believes that the approach taken in Texas should serve as a model for the nation.

Issue II–3. Exposure Scenarios for a Site-Specific Analysis

WCS Comment: WCS encourages NRC to require consideration of generic exposure scenarios, such as an intruder scenario, in the rulemaking. WCS again requests NRC to evaluate the licensing process used by TCEQ to license our facility in Andrews County, Texas. During this review, it was determined that disposal of depleted uranium would require placement in reinforced concrete canisters. Use of grout was also required to ensure stabilization of depleted uranium within the concrete canisters. Additionally, the design

[1] On September 10, 2009, TCEQ issued Radioactive Material License No. R04100 to conditionally authorize land disposal of low-level radioactive wastes by WCS.

[2] See Title 30 of the Texas Administrative Code (TAC), Chapter 337.709.

approved for WCS includes an additional concrete liner around the disposal cell as well as a minimum cover thickness of about 10 meters. These measures were specifically required to address the inadvertent intruder scenario.

While WCS encourages NRC to specify in the rulemaking generic exposure scenarios as part of a performance assessment, we recognize that additional information, such as determining fate and transport modeling parameters, should be addressed in regulatory guidance and not rulemaking. In developing regulatory guidance, NRC should build upon its experience related to development of radiological exposure scenarios that have been used to support radiological dose assessments in support of past rulemaking and license reviews involving the License Termination Rule (10 CFR Part 20, Subpart E).

III. ISSUES WITH DISPOSAL OF SIGNIFICANT QUANTITIES OF DEPLETED URANIUM

Issue III–1. Definition of Significant Quantities

WCS Comment: We encourage NRC to define "significant quantities" in the rulemaking in a graded and risk-informed manner. For example, WCS is authorized in Radioactive Material License R04100 to dispose of depleted uranium, excluding depleted uranium from deconversion of UF6, at concentrations less than 10 nCi/g. As previously mentioned, WCS demonstrated in a performance assessment that depleted uranium in large quantities and much larger concentrations could be safely disposed of for a time period much longer than 10,000 years into the future. TCEQ elected to pose this additional concentration-based restriction of 10 nCi/g limiting waste form of depleted uranium authorized for disposal until such time that NRC and then the State complete rulemakings. However, WCS believes conceptually that a similar trigger level could be useful in defining a threshold requiring more rigorous requirements that may be needed to protect public health and the environment from the hazards associated with depleted uranium.

Issue III–2. Time Period of Performance for a Site-Specific Analysis

See WCS comments pertaining to *Issue II–2. Time Period of Performance.*

Issue III–3. Exposure Scenario(s) for a Site-Specific Analysis

See WCS comments pertaining to *Issue II–3. Exposure Scenarios for a Site-Specific Analysis.*

Issue III–4. Source Term Issues for a Site-Specific Analysis

WCS Comment: In regulatory guidance, NRC should clarify that only stable forms (and not UF6) of unique waste streams, including depleted uranium, may be disposed of by shallow land burial. NRC should also provide details in their regulatory guidance on acceptable approaches to determine and quantify source terms that may be used in a site-specific analysis.

Issue III–5. Modeling of Uranium Geochemistry in a Site-Specific Analysis

WCS Comment: WCS believes that NRC should clarify acceptable approaches for modeling of uranium geochemistry in regulatory guidance.

Issue III–6. Modeling of Radon in the Environment in a Site-Specific Analysis

WCS Comment: To address the hazard of radon that decays from the ^{238}U parent over time, NRC should utilize the existing radon flux standard of 20 pCi/m^2-sec as codified in 40 CFR §192, *Standards for the Control of Residual Radioactive Materials from Inactive Uranium Processing Sites.*

WCS appreciates that opportunity to comment on this important rulemaking initiative and hopes that are perspective on this subject is helpful as NRC proceeds forward. WCS requests that a copy of all correspondence regarding this matter be directly faxed (717-540-5102) or emailed (wdornsife@verizon.net) to my attention as soon as possible after issuance. If you have any questions or need additional information please call me at 717-540-5220.

Sincerely,

William P Dornsife

William P. Dornsife, P.E.
Executive Vice President, Licensing and Regulatory Affairs

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