



July 18, 2014

VIA EMAIL AND FEDEX

Ms. Catherine Haney
Director, Office of Nuclear Material Safety and Safeguards
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

- References:
- (1) Texas Commission on Environmental Quality, Radioactive Material License No. R04100, Amendment 25, CN6006616890, RN101702439
 - (2) NRC Order Modifying Exemption Request from 10 CFR 70, dated October 20, 2009
 - (3) Letter from Rod Baltzer (WCS) to Larry Camper (NRC), Enforcement Discretion for TRU SWBs, dated June 12, 2014
 - (4) NRC Safety Evaluation Report Regarding the Proposed Exemption from Requirements of 10 CFR Part 70, January 2009, ADAMS Accession No. ML081550674
 - (5) Letter J. Scott Kirk (WCS) to Larry Camper (NRC), Plan for Retrieval of Los Alamos National Laboratory Waste Placed in Temporary Storage in the WCS Federal Waste Disposal Facility, dated June 20, 2014
 - (6) NRC Docket No. 70-7005

Subject: Exemption Request to Amend NRC Order Regarding Temporary Storage of Special Nuclear Material in the Federal Waste Disposal Facility

Dear Ms. Haney:

Waste Control Specialists LLC (WCS) hereby requests an exemption to Title 10 of the Code of Federal Regulations (CFR), Part 70, *Domestic Licensing of Special Nuclear Material*, to temporarily store 73 containers of transuranic waste generated by the Los Alamos National Laboratory (LANL) in its Federal Facility Waste Disposal Facility (FWF). WCS believes that compelling reasons justify approval of the exemption request to amend the Order (Reference 2) issued by the U.S. Nuclear Regulatory Commission (NRC) consistent with the criteria specified in 10 CFR 70.17, *Exemptions*.

As discussed with your staff, the quantities of Special Nuclear Material (SNM) in each of the 73 containers temporarily stored at the FWF exceed the quantities sufficient to form a critical mass as defined in 10 CFR 150.11, *Critical Mass*. However, the NRC has previously conducted a safety review approving concentration-based limits for SNM that also addressed physical security and safeguard requirements (Reference 4). The storage of the SNM-bearing waste from LANL in the FWF is compliant with the concentration-based SNM limits and all other requirements as specified in License Condition 206 (LC-206) of Radioactive Materials License (RML) No. R04100 (Reference 1). Approval of the exemption request would simply authorize temporary storage of the LANL waste in the FWF in the same configuration that is authorized pursuant to LC-206 of RML R04100. WCS believes that these safety reviews similarly demonstrate that temporary storage of the 73 containers of SNM-bearing waste in the FWF is bounded and adequately addresses applicable nuclear criticality safety, physical security and safeguard requirements.

Justification

On June 12, 2014, WCS notified the NRC of its plans to move 73 containers of transuranic (TRU) waste from its Treatment, Storage and Disposal Facility (TSDF) to the FWF for temporary storage (Reference 3). WCS moved the 73 containers for temporary storage at the FWF to ensure the protection of public health and safety, as well as protection of the environment on June 13, 2014.

WCS was previously storing 73 Standard Waste Boxes (SWBs) containing TRU waste from LANL in Modular Concrete Canisters (MCCs) on BSU-2. BSU-2 is a licensed storage area for radioactive waste (Reference 1) issued by the Texas Commission on Environmental Quality (TCEQ) and also a permitted storage area for hazardous waste. Storage of the TRU waste is compliant with the concentrations-based limits for SNM as determined by the NRC and specified in LC- 206. The SWBs are over-packs for drums that contain the MN02 waste stream which has been identified by the Waste Isolation Pilot Plant (WIPP) and LANL as being associated with the WIPP contamination event this past February.

Over the course of the investigation, WCS learned that the incident at WIPP may stem from LANL blending nitrate waste with organic kitty litter which may have created the potential for this waste to react and lead to an over pressurization of the container and a sudden release. After this scenario was identified as the potential cause, LANL scientists also informed WCS that this waste may be more reactive at temperatures exceeding 130 degrees Fahrenheit (F). Based on the identified hazard associated with this waste stream, these containers can no longer be shipped back to LANL.

WCS evaluated its storage options to best mitigate any potential on-site incident. WCS determined that the licensed and permitted storage facility where the SWBs were currently being stored would not sufficiently contain any potential contamination event. Based on our operating

expertise and in order to protect the health and safety of our employees and the environment, WCS decided to load all 73 SWBs into individual 65,000 pound standard cylindrical and rectangular MCCs. Each MCC is back-filled with pea-sized river rock which allows for hydrogen gas to permeate through it and not create an additional hazard of hydrogen gas build-up within the SWBs and MCC. We also believed the river rock would be more effective in reducing temperatures in the waste packages.

WCS has continued to monitor temperatures in the MCCs and discovered that temperatures have reached and even exceeded the 130 degrees Fahrenheit threshold. With temperatures continuing to increase, WCS evaluated its options to stabilize or lower the temperatures as well as find additional mitigating options in the event of a reaction and/or release.

WCS evaluated moving the MCCs for temporary storage to the bottom of the FWF which is more than 100 feet below grade. As a surrogate, WCS took the temperature reading inside a cylindrical MCC that was covered with sand and that had been disposed in the Compact Waste Facility. The temperature on the outside of the test MCC was 115 degrees Fahrenheit, but inside was only 82 degrees Fahrenheit. Therefore, WCS determined as an emergency protective measure, the safest and most immediate option available for storage was to transfer the MCCs to the FWF disposal facility and encase them with a large volume of sand.

WCS has submitted a Retrievability Plan (RP) for the LANL waste to describe the actions needed to remove the waste from the FWF at such time that a permanent solution is identified by the DOE (Reference 5). WCS has committed in the RP to remove the LANL waste from the FWF at such time that the waste may be safely transported in commerce for treatment or permanent disposal at a licensed facility.

WCS moved the LANL waste for temporary storage at the FWF to ensure protection of public safety and environmental protection. This waste is currently stored in compliance with the SNM concentration-based limits, and physical security and safeguard requirements previously approved by the NRC at the WCS TSDF, as specified in LC-206. Therefore, WCS respectfully requests approval of the exemption request pursuant to 10 CFR 70.17.

Catherine Haney, NRC

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WCS requests that all correspondences regarding this matter be emailed directly to my attention (skirk@valhi.net) as soon as possible after issuance. If you have any questions or need additional information, please contact me at 972-450-4284.

Sincerely,

A handwritten signature in blue ink that reads "J. Scott Kirk". The signature is written in a cursive style with a large initial "J" and "K".

J. Scott Kirk, CHP

Vice President of Licensing and Regulatory Affairs, Corporate Radiation Safety Officer

cc: Larry Camper, NRC
Gregory Suber, NRC
Maurice Heath, NRC
Charles Maguire, TCEQ
Bobby Janecka, TCEQ
Rodney Baltzer, WCS
Elicia Sanchez, WCS
Jay Cartwright, WCS
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WCS Regulatory Compliance
WCS Records Management