

US EPA ARCHIVE DOCUMENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

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OFFICE OF  
AIR AND RADIATION

Mr. Jose Franco, Manager  
Carlsbad Field Office  
U.S. Department of Energy  
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Dear Mr. Franco:

The U.S. Environmental Protection Agency has determined that the Department of Energy (DOE) has met the Agency's August 8, 2011 condition placed on the DOE's use of shielded containers for remote-handled (RH) transuranic waste destined for disposal at the Waste Isolation Plant (WIPP). The DOE is now authorized to ship waste from approved streams using the shielded container assembly (SCA).

The EPA's previous approval considered the potential impacts of the shielded container assembly on transportation, facility operations and long-term repository performance, and took into account significant public comment. The Agency approved the DOE's planned change request to use the SCA at WIPP in a letter dated August 8, 2011, subject to the following condition:

*'Prior to shipping shielded containers to WIPP, DOE must still demonstrate a consistent complex-wide procedure to ensure that the shielded containers containing RH waste remain below the Land Withdrawal Act surface dose rate limit for CH waste of 200 millirem per hour.... No shielded containers may be shipped to WIPP from any RH TRU site until EPA inspects and approves the implemented procedure.'*

The DOE has now presented a process to be used at all waste generator sites throughout the weapons complex to demonstrate that each SCA will comply with the 200 mrem/hr surface dose rate limit. The administrative process used to identify waste eligible for disposal in shielded container assemblies and the surface dose measurement procedure *Shielded Container Assembly Loading* (CCP-TP-081, Rev. 2) together provide a high level of confidence that no shielded container assembly will exceed the 200 mrem/hr surface dose rate limit.

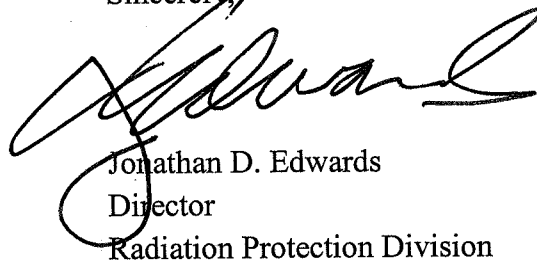
The purpose of the EPA's condition was to verify that a container with a surface dose rate greater than 200 mrem/hr could not be approved for shipping due to measurement uncertainty. The Agency found that the DOE meets this goal by combining multiple measurements and shielding calculations. The process begins by taking dose rate measurements to define the maximum dose rate at the surface of RH waste containers. This maximum dose rate is then used to calculate whether each drum is eligible to be loaded in a SCA. From a series of computer modeling analyses of the shielded container, the DOE has

determined that the SCA should reduce the surface dose of the inner container by a factor of at least 25. The Department currently provides additional protection by dividing the maximum surface dose of the inner container by a dose reduction factor of only 20 (in essence assuming that the SCA will provide only 80 percent of the minimum expected shielding) to verify that once loaded in a SCA, the surface dose rate will be below the limit. After loading, the entire exterior surface of the SCA is surveyed, including the top and bottom, eliminating the possibility of missing a localized area with a higher dose rate. The maximum observed dose rate is used as the measurement of record. The Agency, therefore, concludes that the DOE has demonstrated a system of controls which will prevent the shipment of a SCA with a surface dose rate in excess of the limit.

The EPA reached this decision after reviewing the shielded container process, the revised procedure and additional documentation provided by DOE on August 5, 2013. In addition, EPA observed the loading of a shielded container assembly at Argonne National Laboratory on June 13, 2013 and considered stakeholder comments that were received on August 6 and 12, 2013.

If you have any questions, please contact Jonathan Walsh at (202) 343-9238.

Sincerely,



Jonathan D. Edwards  
Director  
Radiation Protection Division

cc: Jonathan Walsh, EPA  
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