

US EPA ARCHIVE DOCUMENT



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

DEC 11 2008

OFFICE OF  
AIR AND RADIATION

Dave Moody, Ph.D.  
Manager, Carlsbad Field Office  
Department of Energy  
P.O. Box 3090  
Carlsbad, NM 88221

Dear Dr. Moody:

The Environmental Protection Agency (EPA) has reviewed the U.S. Department of Energy's (DOE) letters—dated October 29, 2008 (L1) and December 1, 2008 (L2)—related to the Remote-Handled (RH) shielded container planned change request. In addition to this information, EPA has been reviewing previously submitted information on this topic. The Agency does not feel it is appropriate to approve DOE's planned change request at this time because previously identified items have not been addressed.

As stated in our December 7, 2007 letter, EPA believes that three items must be completed before we can issue an approval. 1) The container must be approved by the US Nuclear Regulatory Commission (NRC). 2) The container must be approved by the US Department of Transportation (DOT). 3) The Waste Isolation Pilot Plant (WIPP) site contractor must complete the shielded container Documented Safety Analysis (DSA).

We appreciate DOE's position that the container design will not change due to NRC's review and that the planned change request should be approved without these requirements being fully complete. However, EPA believes it is prudent to wait for these steps to be fully accomplished before issuing an approval. Moving RH waste from the walls to the floor of the repository is an important design change, and the documentation that has been provided does not adequately address the issues associated with using shielded containers. These issues are explained in detail and can be found in Attachment A.

EPA also believes it is necessary to more clearly outline our expected public process. The Agency will fully engage and include public input/comment to support our final decision. EPA expects to open a public comment period (between 30-60 days) on our proposed decision and will continue to accept input from interested stakeholders as we continue our review process following the comment period. To make an adequate and defensible decision, the Agency must ensure that public concerns are appropriately considered. Based on all of these factors, it must be made clear that EPA's conclusions

on the shielded container PCR will not be made final for several months following our initial proposed decision.

In summary, EPA believes that the NRC and DOT approval processes have not been completed, and that the DSA is not adequately complete as well. Furthermore, the Agency will need time to implement its proposed public process, as outlined above. For these reasons, the EPA will wait to make its final decision on the shielded containers planned change request.

If you have any questions regarding these issues, please contact Tom Peake at (202) 343-9765.

Sincerely,



*for* Jonathan Edwards, Acting Director  
Radiation Protection Division

Enclosure

cc: Electronic Distribution  
Elizabeth Cotsworth, EPA HQ  
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Steve Zappe, NMED  
Nick Stone, EPA Region 6  
Kimberly Hardin, NRC/HQ  
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bcc: WIPP Team

## **Attachment A Detailed Comments**

### **NRC Approval:**

EPA continues to follow DOE's interactions with NRC. As noted in letter L2, NRC submitted a Request for Additional Information (RAI) on November 26, 2008. NRC's questions appear related to flammable gas, waste shipping categories, 1-day and 9-day transport and unloading time, 30-gallon drum construction materials, inconsistency in load type resistance of the shielded container compared to other containers, heat load, modeling input files and parameters, as well as other topics. EPA continues to stress that NRC's final approval is needed before we can proceed. Please provide NRC's final approval when it is available so that the Agency can verify that the container design has not changed.

### **DOT Certification:**

Included with letter L1 is the "Shielded Container Type A Evaluation Report," completed by Washington TRU Solutions LLC. This report appears to be an internal site report documenting testing of the new shielded container to verify that it complies with DOT requirements. However, the document does not appear to be a final DOT approval, nor does it clearly provide evidence that the container is self-certified, if applicable. DOE states in L1 that WTS, "...now has certified the shielded container to DOT standards." L1 also states, "Use of the shielded container as a stand alone DOE 7A Type A packaging requires that compliance with all requirements stipulated in the DOE regulations be set forth in the Certification Document and its appendix, and in the drawing, specification, and handling and operation manual referenced in the document."

EPA needs a final approval from DOT that verifies DOE compliance with the requirements stated above. If self-certification is appropriate, DOE must provide improved documentation and presentation to show compliance with DOT requirements, and also show that no changes have been made to the design to achieve this approval.

### **Documented Safety Analysis (DSA):**

DOE/WIPP-07-3372 (DSA) was referenced in L1, where DOE states that, "The WTS Nuclear Safety Department has conducted an assessment..." However, this DSA does not appear to be included with this letter. DOE included what might be considered a partial DSA. WTS believes that the Pipe Over Pack (POP) is an adequate container substitute for the shielded container and therefore depends on the previous results for the new shielded container qualification by supposition and comparison only. EPA does not believe this to be adequate because the container may perform differently.

Attached to L1 is the "Nuclear Safety Assessment of Shielded Containers in the WIPP System of Operations," a memorandum that was produced by the WTS WIPP Nuclear Safety Staff. In Section 4.0, the POP is equated with a shielded container and

the POP DSA is applied to the shielded container evaluation. It is stated that the POP may be bounding in this regard and "...is at least as robust." The POP may or may not be as robust; it may depend on the accident being considered. WTS highlights three events in its analyses that may cause loss of shielding or confinement (LOC): 1) forklift tine punctures, 2) puncture due to shrapnel from explosions, and 3) drop down the waste shaft – all, with, or without a subsequent fire. It is stated that, "In each of these bounding operational events of concern, the shielded container (assumed to be in a 3-pack assembly) would be bound by the current accident consequences." It would seem that a POP punctured by a tine or shrapnel may perform differently than a shielded container. The waste in a POP is much further from the surface of the outer container than the shielded container. The puncture tine or shrapnel may intersect RH waste in the shielded container in a much shorter distance than the POP because the RH waste is closer to the container surface. A forklift tine may intersect waste in the shielded container before the operator realizes his mistake. Therefore, it may not be clear that a POP does in fact perform like a shielded container. EPA believes that a DSA is needed before EPA can approve this request.

#### **Nuclear Criticality Analysis:**

In Section 4.0 of the memorandum "Nuclear Criticality Safety Evaluation for Contact-Handled Transuranic Waste at the WIPP, WIPP-016," is referenced. As stated in the document, "The evaluation concluded that no credible critically accident scenarios exist for the CH TRU waste storage, handling, and disposal process at WIPP that would involve shielded containers. ... In addition to criticality, the bounding operational events of concern involving shielded containers are LOC (loss of containment) events with subsequent fire."

It appears that DOE is attempting to utilize the CH Criticality evaluation to support the RH shielded container PCR and to substitute it in some way for the DSA. EPA attempted to make this connection by examining the criticality report in more detail. Though the criticality report was noted to be a final document via its submission to the Agency, EPA found it to be incomplete and difficult to review. For example, out of 137 references to certain sections of the report, 34 showed "Section –"; out of 336 table references, 21 showed "Table –"; and out of 260 figure references, 18 showed "Figure –". All of these instances did not include the reference number needed to make the reference useful or complete.