EPA Comment

During our review of various DOE documents related to shielded containers, we have noted several inconsistencies regarding the thickness of the inner and outer steel shells of the container:

- Dunagan et al. 2007 (Section 2.2) lists the thicknesses of the outer and inner walls as 1/8 in (0.125) and 3/16 in (0.1875), respectively. Elsewhere (i.e., Section 3.1.6.2), the same authors list the combined thickness of the inner and outer steel shells as 0.3125 in.
- According to DOE 2010, Enclosure 1, the inner and outer steel walls are 7 gauge (0.144 in) and 11 gauge (0.091 in), respectively.
- DOE states that the inner wall thickness is 0.1793 in DOE 2009 Enclosure (Section 4.2.3).

DOE should indicate which dimensions are the correct ones and what effects, if any, the corrected dimensions have on the various analyses that DOE has performed.

EPA References

Dunagan, S.C., G.T. Roselle, E.D. Vugrin, and J.T. Long, 2007. *Analysis Report for Shielded Container Performance Assessment* . Sandia National Laboratories, Carlsbad, New Mexico, ERMS 547197. October 31, 2007 .

DOE 2010 . Letter from D. Moody, Manager, Carlsbad Field Office, DOE, to Jonathan Edwards, Acting Director, EPA Radiation Protection Division dated March 4, 2010. *Subject: Submittal of Safety Analyses in Support of the Planned Change Request for Lead Shielded Containers. (* Enclosure 1 is "Summary of the Safety Impact Analysis for the Lead Shielded Container").

DOE 2009 . Letter from D. Moody, Manager, Carlsbad Field Office, DOE, to Jonathan Edwards, Acting Director, EPA Radiation Protection Division dated January 21, 2009. *Subject: Self-Certification of the Shielded Container to Department of Transportation (DOT) Requirements* . (Enclosure is "Shielded Container Type A Evaluation Report.")

DOE Response

The correct dimensions for the thickness of outer shell of the shielded container is 0.120 in. (+/- 0.008 in.), 11 gauge and the inner shell is 0.179 in. (+/- 0.008 in.), 7 gauge. (Washington TRU Solutions, 2007)

Concerning the Shielded Container Performance Assessment document:

Since the analysis in Dunagan et al. (2007) was performed, the inner and outer thicknesses of the shielded container have changed to 0.120± 0.008 in. (11 GA.) for the outer wall and 0.179±

0.008 in. (7 GA.) for the inner wall. Though these values are less than the values in Dunagan et al. (2007) the conclusions formed based on the thickness of the walls remain unchanged. The small reduction of the wall thicknesses will have no impact on the results of the analysis performed in Dunagan et al. (2007).

Concerning the Safety Impact Analysis document:

The dimensions stated in "Summary of the Safety Impact Analysis for the Lead Shielded Container" were incorrect. However the Safety Impact Analysis was performed using the correct dimensions stated above and does not change the results and conclusions in the report i.e., consequences to the public (i.e., the maximally exposed offsite-individual) and to the on-site (facility) worker will not increase with the use of the shielded containers.

The following paragraph, page 1 in "Summary of the Safety Impact Analysis for the Lead Shielded Container" should be replaced with the following paragraph.

> The shielded container has approximately the same exterior dimensions as a 55-gallon drum and holds a single 30-gallon drum that will contain the RH TRU waste (See Figure 1). The cylindrical sidewall of the shielded container has nominal 1-inch-thick lead shielding sandwiched within a double-walled steel shell. The external wall is 11 gauge (0.120 in. (± 0.008 in.) steel and the internal wall is 7 gauge (0.179 in. (± 0.008 in.) steel. The lid and the bottom of the container are made of carbon steel and are approximately 3 inches thick. The 30-gallon inner container has a gross internal volume of 4.0 ft^3 (0.11 m^3) and a maximum loaded weight of 2,260 pounds. The empty weight of the shielded container is 1,726 pounds.

This will be noted as errata to the "Summary of the Safety Impact Analysis for the Lead Shielded Container" document.

Concerning the Shielded Container Type A Evaluation Report:

The analyses, tests, and evaluations performed on the shielded container to demonstrate compliance of the packaging design for use as a standalone DOT 7A Type A packaging were performed using the correct dimensions for the inner and outer shells as stated above. The results and conclusions in "Shielded Container Type A Evaluation Report" for use of the shielded container as a DOT 7A Type A packaging remain valid.

Reference

Shielded Container Assembly, Drawing No. 165-F-026-W5, Rev. B, 2007, Washington TRU Solutions LLC, Carlsbad, New Mexico.