



Document Control Desk
Director, Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

July 12, 2007

This report is a follow-up report to Event Report #43423, which was initiated by telephone on 6/14/07. This event was reported due to the finding of an Ohmart SHRM L-200 nuclear gauge in storage at the 1138 Building at Dow Chemical's Midland, Michigan site with an inoperable shutter in the open position on the morning of June 14, 2007. This source contained 35 mCi of Cs-137 in a sealed source.

The current status of this event is as follows:

- A temporary lead shield is attached to the front of the gauge, reducing dose rates to less than 2 mrem/hr at 1 foot from the gauge
- A representative from Ohmart has inspected the gauge and recommended shipping the gauge to their site for disposal
- A crate has been constructed to Ohmart's specifications to ship the nuclear gauge in. The temporary lead shield will remain on the gauge during shipping. Once the crate is completed, the source will be shipped to Ohmart for disposal.

The exact cause and timing of the shutter malfunction is not known. This source shutter lever indicated that the shutter was closed, but the shutter level had become disengaged from the shutter, and the actual shutter was not closed. The source was placed into storage in October, 1994, and no records can be located that would confirm whether the shutter was closed at that time. A review of dosimetry records for the month that the gauge was transferred to storage did not find any significant (greater than 10 mrem) recorded doses to any personnel who may have been involved in the transfer of the source. Subsequent surveys of the storage area did not identify elevated radiation levels. However, the source was stored face-down on a concrete floor, so there were no elevated radiation fields present in the room around the source.

The following corrective actions have been taken to prevent recurrence of this type of event:

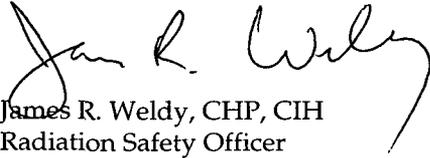
- Sources in storage with internal shutters have been surveyed to check for any other gauges in storage that have open shutters. No other problems were identified.
- Between the time of the source being sent to storage and the recent discovery of the open shutter, procedures for removing sources from vessels and placing them into storage were modified to require using a survey meter to positively confirm that the shutter actually closed. This change has eliminated the potential for the source shutter being left open when the shutter handle becomes disengaged from the source shutter.
- Dosimetry records of individuals in the Radiation Safety Group at the time that the source was transferred to storage were reviewed to check for unusually high doses. The peak dose for this month was found to be 10 mrem, so it does not appear that any significant doses were received during the transfer of the source.

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No excessive doses were recorded on dosimetry worn by employees while working in this building. Dosimetry is required to be worn for any employee entering this building.

Please contact me if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "James R. Weldy". The signature is fluid and cursive, with the first name "James" and last name "Weldy" clearly legible.

James R. Weldy, CHP, CIH
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