Date: Mon, 24 May 1999 13:09:51 -0600
From: Meredith Brown <racer@lanl.gov>
Subject: Yellow Alert: Contaminated Lead Bricks Shipped Offsite

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Title: Contaminated Lead Bricks Shipped Off Site
Date: May 7, 1999 Identifier: 1999-RL-HNF-0021

Lessons Learned Statement: Previously used/recycled material should be surveyed and monitored to detect contamination that may have escaped detection during release-to-excess surveys.

Discussion of Activities: Five contaminated lead bricks were received in a shipment of recycled bricks. Investigation determined that the bricks probably had been used previously at the Hanford site.

On January 28, 1999 a health physics technician (HPT) found a contaminated lead brick during a spot survey on a pallet of recycled bricks. Isotopic analysis showed Cs-137 contamination at 35,000 dpm/100 cm2 beta-gamma. The contaminated brick was double bagged in plastic and placed in a radioactive material area (RMA). A verification survey of the remaining bricks on the pallet found four additional contaminated bricks. Radiological control personnel surveyed the remaining bricks at the local vendor's facility and found one additional contaminated brick.

Analysis: Investigation into the source of the bricks revealed that they probably had been used several years earlier at the Hanford site. Records showed that they had been released to excess according to procedures in effect at the time. Two batches had been surveyed, indicating that they had been at least potentially contaminated. The remaining four batches had been released from areas not radiologically controlled. Knowledge of past and present work practices and a questioning attitude enabled the HPT to effectively spot check the opened pallet of bricks and to control the contamination discovered.

A Core Function of the Integrated Safety Management System could have prevented this incident had it been more effectively implemented:

Identify Hazards and Requirements - Identify controls to prevent hazards. In this situation the hazard of spreading contamination to the public was apparently not adequately identified and controlled in the original procedures for releasing materials to excess.

Recommended Actions: Be alert for contamination on recycled materials that may have been used in contaminated areas. Areas hidden from release surveys may contain contamination that can become exposed with use in a new environment. Thoroughly survey materials originating from the vicinity of

contaminated areas. Lead bricks are frequently used as shielding in radiological areas so they have a high probability of being contaminated. Extra care should be taken when releasing them for offsite transfer.

Priority Descriptor: YELLOW/Caution based on release of contamination off site.
Functional Categories (DOE): Radiation Protection, Conduct of Operations, Environmental Protection, Packaging and Transportation
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