

Date: Fri, 12 Feb 1999 10:20:34 -0600  
From: Meredith Brown <racer@lanl.gov>  
Subject: Yellow Alert: Inspecting Stored Chemicals

The following Yellow Alert is being issued to make personnel aware of the importance of regularly inspecting chemicals in storage for detection of deteriorating containers. Please forward to the appropriate employees in your area of responsibility. No formal response is required by the ORNL Lessons Learned Program.

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**TITLE: Stored Chemicals Required Regular Inspections**

IDENTIFIER: Y-1999-OR-LMERX10-0202 DATE: February 12, 1999

**LESSONS LEARNED STATEMENT:** Chemicals in storage should be regularly inspected by facility management for detection of deteriorating containers to prevent spills from failed containers.

**DISCUSSION:** On October 26, 1998, a rigging crew was moving a 55-gallon drum of diethylbenzene (DEB) from a bulk chemical storage area to the facility where it was to be used. Upon arriving at the storage area the riggers identified the drum to be moved and visually inspected it. The drum was moved outside and placed on its side on the forks of a lift truck for movement to a flatbed truck. Apparently when the drum was placed on its side, the internal movement of the liquid created enough pressure to rupture a couple of pinhole-size areas in a rusted portion of the bottom of the drum. This allowed a small amount of DEB to spill onto the forks and the ground. Proper personnel were notified who transferred the contents from the leaking steel drum to a new poly-lined drum and cleaned up the spill. All chemical contamination from the spill was removed and packaged for proper disposal.

Four personnel from the evacuated buildings were sent to onsite medical as a precautionary measure. The personnel were observed for possible fume exposure and no treatment was necessary.

**ANALYSIS:** The cause of the leak was failure of the drum containing the chemical due to corrosion after prolonged storage. The chemical storage area where the spill occurred was remotely located from the facility where the chemicals were used. Chemical storage buildings to properly store the material were installed near the facility and plans were in place to repackage and relocate the chemicals. Since the storage site was remote, facility management did not make regular inspections of the area to assess the condition of stored material.

**RESOLUTION/RECOMMENDED ACTIONS:** The drums in storage have been inspected for corrosion and chemicals in suspect drums were transferred to new drums. The drums were relocated to the new

chemical storage facility where regularly scheduled safety inspections are conducted by facility management and health and safety professionals.

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PRIORITY DESCRIPTOR: Yellow / Caution

DOE Functional Category: Operations

LMER Functional Category: Facility Management

KEYWORDS: chemicals, storage, drum failure, spill, deteriorating containers

REFERENCES: ORO--ORNL-X10CHEMTEC-1998-0009

**FOLLOW-UP ACTION:** Information in this report is accurate to the best of our knowledge. As means of measuring the effectiveness of this report, please notify Connie Arnwine at 423-241-3134 or e-mail a93@ornl.gov of any action taken as a result of this report or of any technical inaccuracies you find. Your feedback is important and appreciated.