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From: Meredith Brown <racer@lanl.gov>
Subject: Yellow Alert: Handling Drums Safely

The Project Hanford Lessons Learned below is approved for public release.

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Project Hanford Lessons Learned

Title: **Handling Drums Safely**

Date: January 29, 1998
Identifier: 1998-RL-HNF-0004

Lessons Learned Statement:

Proper rigging equipment must be used, procedures must be followed, and safe lifting practices must be observed to prevent dropping drums.

Drum lifting devices which depend on friction or hook engagement may release their load if the drum weight is relieved while the drum is being handled.

Trucks and vans used for transporting waste should not have any loose ropes attached to the roll-up door strap.

Chain buckets can prevent hoist chains from contacting loads and becoming tangled on protruding bolts.

Discussion of Activities:

Summary:

Three recent incidents of dropped waste drums have highlighted the need for a safety reminder. Everyone involved with drum handling activities must constantly think about safety throughout the handling process.

Details:

Lessons Learned Bulletin 1997-RL-HNF-0039 described an event resulting in an injury. A drum being lifted with barrel hooks on a continuous-loop sling struck an obstacle while being loaded onto a truck and dropped to the truck bed. A worker on the truck was injured when he fell to the ground while avoiding the falling drum.

In another drum handling operation, the bolt on the lid clamping-ring became entangled in the free end of the hoist chain. The free end of the hoisting chain was traveling in the upward direction as the drum was being lowered. The load weight was relieved from the rigging, the hooks disengaged, and the drum dropped six to eight feet. There were no injuries nor spread of contamination. The hoist was not equipped with a chain bucket to collect and feed out the free

end of the hoist chain. Although not a required attachment, using a chain bucket is a good practice to prevent the free end of the chain from contacting the load.

Recently while off-loading waste drums from a covered van in the Central Waste Complex, a drum was pulled off its pallet by a rope extension on the pull-down strap on the roll-up door of the van. No release or injuries occurred. This type of van typically has a strap hanging from the bottom of the roll-up door which the drivers/operators reach to close the door. The strap is usually secured out of the way during the unloading process. This particular van had an additional rope with a loop at the bottom attached to the strap to make it easier to reach from the ground. As a pallet of drums was being moved from the back of the van, the wind caught the strap and rope and blew it into the path of the load. Expecting that the strap and rope would slide harmlessly along the load, the teamsters and operators continued unloading. However, the "eye" of the rope caught on the bolt in the lid band of a drum closure and dislodged the drum from the pallet causing it to fall to the ground.

Analysis:

These three accidents collectively indicate a pattern that may lead to more severe injuries or a large spill. These events demonstrate that even routine activities can pose hazards when simple precautions are overlooked or ignored.

Recommended Actions:

Supervisors of drum handling operations should reinforce to their crews the need to maintain constant awareness of hazards, and always to position themselves clear of suspended loads. They must assure themselves that they are safe from hazards and continuously survey the situation for changing conditions. Apply established work planning methods such as written procedures, job hazard analysis, or verbal work instructions for effective hazard identification and control.

Install chain buckets on permanently installed hoists unless there is an overriding justification not to do so.

Remove ropes attached to pull-down straps on roll-up doors of vans used for transporting drums. Alternatively, securely fasten the ropes out of the way while loading or unloading the van.

Priority Descriptor: YELLOW/Caution

Functional Category: Occupational Safety and Health

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References: Hanford Lessons Learned Bulletin 1997-RL-HNF-0039; PNNL Lessons Learned Bulletin 97PNNLBOPEM02