

Date sent: Thu, 23 Jul 1998 08:57:35 -0500
From: Meredith Brown <racer@lanl.gov>
Subject: Blue Alert: Drum Inspection Criteria

TITLE: Drum Inspection Specifications Necessary to Ensure Adequate Inspections

IDENTIFIER: 1998-LA-LANL-ESH7-0006

DATE: July 23, 1998

LESSONS LEARNED STATEMENT: Mandatory drum inspections for drums intended to contain hazardous material should be contractually required to ensure that drum configurations and physical integrity are adequate to prevent a loss of control of hazardous material. Inspection requirements should be specified in purchase contracts with drum manufacturers and/or suppliers to ensure that sufficiently rigorous inspection are performed to identify structural weaknesses and product defects.

ANALYSIS: Recently, twenty-one Skolnik brand drums intended for use in transporting hazardous material were received from a just-in-time supplier.

All of the drums were inspected and rejected by the end user because of cracked welds and/or moisture and rust inside the drums. The drums were United Nation (UN) tested and carried solid and liquid UN certifications.

The just-in-time contract was modified in 1997 to require drum inspections; however, inspection criteria was not included in the requirement. Consequently, the supplier was only performing visual inspections and the drums were not being opened to inspect the interior condition. Therefore, the drum deficiencies were not noted until the end user requisitioned the drums. At that time, the drum lids were removed and cracks in the welds were found in the top chime of the drums.

Moisture and rust were also noted in a few of the drums. Apparently, improper weld temperatures during the manufacturing process caused weld rods to puncture the steel on the drums. The resultant holes were patched with solder and ground smooth on the exterior of the drum. Solder burrs that could possibly tear inner barrier bags and cause unanticipated releases of hazardous materials remained inside the drums.

A stop-use action was initiated with the just-in-time supplier to temporarily halt drum shipments. Digital photographs of the cracks and rust damage were forwarded to the manufacturer to document the deficiencies. Other Laboratory users who received drums out of the lot in question were contacted and all the drums were recalled.

The manufacturer will reissue the appropriate number of drums to the Laboratory. The replacement drums will be inspected before being accepted, and complete acceptance inspections will be performed on all drum shipments until the contract has been modified to specify inspection criteria. Once the contract is revised and inspections consistently indicate that acceptable drums are being delivered, random sampling will be implemented for drum shipments.

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DOE FUNCTIONAL CATEGORY: Quality

KEYWORDS: defective drum, weld, inspection, contract

REFERENCES: Problem Notification; Skolnik Drum Inspection / Rejection memo dated 07/14/98

FOLLOW-UP ACTIONS: Information in this report is accurate to the best of our knowledge. As a means of measuring the effectiveness of this report, please contact the originator of significant action(s) taken as a result of this report or of any technical inaccuracies you find. Your feedback is appreciated.