

Date: Mon, 11 May 1998 07:37:21 -0400
From: eub@ornl.gov (Cynthia M. Eubanks)
Subject: Yellow Alert: Near-Miss Involving Fallen Light

The attached Bechtel Jacobs Company, LLC Yellow Alert is being issued to communicate a near-miss incident at the East Tennessee Technology Park (ETTP). Please disseminate as applicable. If you have any questions, please contact Joanne Schutt (s6u@ornl.gov) at (423)574-1248.

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TITLE: Near-Miss Involving Fallen Light Fixture and Ceiling Tiles

IDENTIFIER: Y-1998-OR-BJCETTP-0401
DATE: April 27, 1998

LESSONS LEARNED STATEMENT: Contractors need to thoroughly evaluate work related to fastening light fixtures to ceilings to ensure that maintenance personnel follow all applicable codes and good work practices.

DISCUSSION: At approximately 8:00 a.m., on March 10, 1998, an employee reporting to work unlocked his office and discovered that two fluorescent light fixtures and some ceiling tiles had fallen overnight. The fixtures and ceiling tiles fell from an area directly above a computer workstation. Fortunately, the incident occurred on the off shift, and the office was unoccupied and locked.

The employee notified the K-1001 building operator of the incident. The building operator identified and deenergized the electrical circuit that supplies the fluorescent light fixtures. The building operator locked the office restricting admittance and notified the Park Shift Superintendent's (PSS) Office. The building operator also requested Industrial Hygiene to evaluate the ceiling tiles, and they determined that the ceiling tiles do not contain asbestos. The building operator contacted electrical maintenance to isolate and repair the fluorescent light fixtures.

ANALYSIS: Personnel Error - In Attention to Detail was the most probable direct and root cause for this incident. Approximately five years ago, electricians installed new fluorescent lights in Building K-1001. Reduction in work force and other personnel changes prevented identification of persons involved with this project. The original lights were suspended by metal rods extended from a junction box through the existing ceiling. The rods were removed, and the new light fixtures installed flush mounted to the ceiling. The ceiling was Sheetrock covered with 12-inch square tiles (glued to Sheetrock).

It was apparent upon investigation that two of the four toggle bolts used to secure the fixtures were properly installed. (Bolts extended through the tile and Sheetrock). A third toggle bolt had not been completely inserted which prevented the toggle from expanding.

The fourth toggle bolt was only secured to the 12-inch tile because a small area of Sheetrock above the tile had been removed leaving a void. The ceiling tile alone does not provide adequate support for the fixture nor meet requirements of the National Electric Code 370-23. Investigation showed that the 12-inch tile with the toggle bolt separated from the Sheetrock resulting in excessive stress on the remaining bolts which resulted in the light fixtures falling from the ceiling.

The Bechtel Jacobs Company has planned to review this incident with all maintenance personnel in routine safety meetings and in addition issue a formal lessons learned to minimize the potential for recurrence of this type of incident.

RESOLUTION/RECOMMENDED ACTIONS:

1. Visually inspect all light fixtures in K-1001 for potential loose conditions.
2. Issue work order for electricians to further inspect identified potential problem lights.
3. Review the Occurrence Report and National Electric Code 370-23 with all maintenance personnel in the routing safety meeting during the month of May.
4. Issue a formal Lesson Learned.

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NAME OF REVIEWING OFFICIAL: A. S. Quist

PRIORITY DESCRIPTOR: Yellow/Caution

KEYWORDS: near-miss, ceiling, light fixture, electrical

REFERENCES: Occurrence Report: ORO--LMES-K25GENLAN-1998-0005

DOE FUNCTIONAL CATEGORY: Maintenance

BJC FUNCTIONAL CATEGORY: MA - Maintenance

HAZARD CATEGORY: Health/Hygiene Other

WORK ACTIVITY: Facility Maintenance

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 Joanne E. Schutt at 423/574-1248, e-mail at s6u@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. Cynthia M. Eubanks, eub@ornl.gov Performance/Quality Assurance Org. Bechtel Jacobs Company, LLC Phone: (423)576-7763; Pager = 873-6968 Fax: (423)574-5398