

Date Mon, 24 Apr 2000 104443 -0600  
From Meredith Brown [racer@lanl.gov](mailto:racer@lanl.gov)  
Subject- Yellow Alert- Overhead Crawl Space Issues

Title: Yellow Alert- Worker Falls Through Ceiling While Working In Attic Crawl Space

Identifier MD L00-094 Date 4/24/00

**Summary-** Working in overhead crawlspaces creates the potential for fall hazards.

**Discussion-** On Friday March 24, 2000, at Mound Labs, in Miamisburg, OH, at approximately 0940 hours, a Radiological Control Technician (RCT) working in the crawl space above Research (R) Building, Corridor 4, stepped on a recessed light fixture and pushed it out of the ceiling. The RCT fell into the hole left by the light fixture and caught himself with his arms. The electrician working with the RCT was able to grab him from his back and pull him back into the crawl space. The ceiling of the corridor is approximately nine feet from the floor. The light fixture was trimmed with asbestos material, which fell into the corridor. The RCT and electrician were wearing the required Personnel Protection Equipment (PPE) for both radiological and asbestos protection. This equipment included full-face respirator, full set of anti-contamination clothing, and hard hat. The RCT and electrician exited the crawl space and the work being performed was stopped. During the pre-job briefing, the fall hazard was discussed and awareness for the need to stay on the metal hanger system was brought up. While the corridor ceiling will support the averaged size person, it is not designed for that purpose and personnel are advised to stay on the metal hanger system. Lights and other fixtures that come through the corridor ceiling will not support much weight.

**Analysis-** A site wide program does not exist for the control of entry to overhead crawlspaces to perform work. If a Maintenance Service Request (MSR) [the MSR is a work request] is performed, the request goes through the local Core team and the fall hazard is identified and a JSHA is written to enhance awareness of the proper places to walk in the particular crawlspace. Because of numerous utilities run in the crawlspaces, access to some areas becomes very tight and wearing personnel protection equipment (PPE) makes it difficult to maneuver and see where your going. If a person is not extremely careful, they can step in the wrong place or on fixtures that came come loose, thereby increase the potential to fall through the ceiling.

**Resolution-** Until crawlspace entry requirements are permanently added to work control procedures, any entry to a crawlspace should require the following

1. All crawlspace work should be classified as at least moderate hazard work, and require as a minimum a JSHA for entry. Mound's Structural Engineer should be contacted if structural concerns exist.
2. Use a "two man rule" where a spotter must be used for crawlspace work. The spotter can not be performing the actual work and they must maintain a line of site at all times. The consideration of radio communications may be another option to tell if someone is in trouble versus the requirement for two man rule with line of site.

3. A walk down of the ceiling must be performed prior to developing the JSHA, it is recommended that the area engineer or other personnel knowledgeable of the crawlspace be contacted for hazards identification.
4. Wherever possible hazards should be mitigated. Put planking down to walk on, shore up light fixtures, cover holes, remove debris, etc.
5. If a respirator is required for asbestos work, a half-face respirator should be used to permit better vision.
6. A straw man JSHA should be provided that has checklist items for possible hazards in crawlspaces and good practices for working in crawlspace. The straw man JSHA is a development tool only. This does not by-pass the requirement for developing a job specific JSHA for each entry.
7. A pre-job briefing must be held prior to entering the crawlspace. Hazards awareness must be covered in the pre-job, the person in the crawlspace must be aware of their surroundings at all times.
8. Label crawlspace entrances with the requirement to contact the Building Manager and develop a JSHA.
9. Change work package procedure to include required JSHA for crawlspace work on the checklist.
10. Revise MSR Manual MD-50000 to include work in crawlspaces on the moderate hazard list. Revise PP-1059B, Attachment A, General Work Planning Checklist to include crawlspace hazards and requirements.

Estimated Cost Savings Cost avoidance in work delays, potential fines, and medical expenses  
Originator BWXTO, Mound Labs, Miamisburg, Ohio  
Validator George F. Nafziger  
Contact George F. Nafziger, 937-865-4598, [nafzgf@doe-md.gov](mailto:nafzgf@doe-md.gov)  
ADC Ron Mahan, 937-865-5556  
Reviewing Official D. Punch  
Descriptor Yellow / Caution  
Keywords crawl space, overhead, fall,  
References Mound Morning Report dtd March 27,2000  
DOE Functional Category CN, DD, DE, MAOT, MAEL, MAME  
Hazard OT