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Subject: Yellow Alert: Subcontractor Employee Struck by Falling Pipe

The following Bechtel Jacobs Company, LLC Lesson Learned was generated as a result of an incident that occurred at the East Tennessee Technology Park (ETTP). It is being disseminated for potential generic implications, as similar situations could occur at other facilities. If you have any questions, please contact Joanne Schutt at (423)574-1258, e-mail=s6u@ornl.gov <mailto:e-mail=s6u@ornl.gov> .

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TITLE: **Subcontractor Employee Struck by Falling Pipe**

IDENTIFIER: Y-1998-OR-BJCETTP-0101 DATE: October 6, 1998

LESSONS LEARNED STATEMENT: Adequate planning and proper scheduling of work crews are essential functions of every job. Supervisors must analyze the hazards involved with each job to be performed each day by each crew and coordinate the work activities such that one crew does not jeopardize the safety of another crew.

DISCUSSION: During decontamination and demolition activities, a subcontractor employee was working at a ground floor location, at a waste loading station, adjacent to an elevated slab (mezzanine area). Workers on the mezzanine were cutting pipe in pipe racks approximately eight feet above the mezzanine deck, working from step ladders, using an electric bandsaw. The workers were sawing three-inch schedule 40 pipe into four-foot sections. The helper was required to support the four-foot pipe section during the second cut with the aid of a one-inch tab left in place during the first cut. In this case, the helper failed to maintain control of the pipe section, causing the pipe section, still tabbed to the main run of pipe, to swing down and break free of the main run, striking the mezzanine floor. The pipe is believed to have rolled off the edge of the mezzanine slab (slab has no toe boards), falling into the work zone on the main floor, striking the employee working in the work zone on the upper section of his arm. The waste loading area was found not flagged off as a potential drop zone for material dropped from the mezzanine work area. The employee was transported to a private physician for medical attention and then returned to work with a light-duty restriction.

ANALYSIS: The direct cause of this event was determined to be that the helper in the two-man cutting crew assigned to cutting three-inch diameter pipe in an elevated pipe rack failed to maintain his grip on the section of cut pipe as the final cut was made, allowing the pipe to fall to the mezzanine floor, where it rolled to the edge of the deck, and rolled off the mezzanine deck (deck has no toe board) striking another employee on the upper section of his right arm.

The root cause was that the subcontractor management did not adequately plan and schedule work crew activities, in that these two work crews were exposed to potential conflict due to excessively close proximity (one crew nearly overhead of the other crew). Management did not fully assess the hazards of elevated pipe cutting operations.

RESOLUTION/RECOMMENDED ACTIONS: Immediately after this accident, the subcontractor project manager initiated a stand down of all work. A safety meeting was conducted with all employees to discuss the details of this accident. The required use of the buddy system for all work was reinforced. A foreman /supervisor was added to the work crew, increasing the number of foremen / supervisors from two to three, under the direction of a general foreman, improving foreman-to-worker ratios significantly, and providing closer supervision of the work activities. A daily management planning meeting was established to ensure better planning, crew segregation, and hazard analysis. Traffic areas beneath elevated work will be flagged off 100% of the time. Work crews will be prohibited from working in close proximity.

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NAME OF AUTHORIZED DERIVATIVE CLASSIFIER: D. D. Holt
NAME OF REVIEWING OFFICIAL: D. D. Holt
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DOE FUNCTIONAL CATEGORIES: Safety, Conduct of Operations
BJC FUNCTIONAL CATEGORIES: SH - Safety and Health, OP - Conduct of Operations, PC - Planning & Controls
HAZARDS: Elevated Work, Mechanical/Structural
WORK ACTIVITY: Decontamination & Decommissioning

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 <mailto: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.