



Environment, Safety and Health Advisory

Three Type B Accident Investigations Initiated in January 2006

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Special Operations Reports are issued to initiate management actions in response to events whose subject matter represents significant Departmental safety concerns.

Environment, Safety and Health Alerts are issued to initiate immediate action on potentially significant safety issues.

Environment, Safety and Health Bulletins are issued to share information and recommend actions on potential safety issues.

Environment, Safety and Health Advisories are issued to provide information to the DOE Complex on potentially significant safety or health issues.

PURPOSE

The purpose of this Safety Advisory is to highlight three recent personnel injury events in the Department of Energy (DOE) that concern problems with conduct of operations and human performance. During January 2006, the Department experienced 19 injuries reported in the Occurrence Reporting and Processing System (ORPS), with three of the events being severe enough to require Type B Accident Investigations.

BACKGROUND

DOE had a relatively good performance year in calendar year 2005 with a significant decline in the number of serious accidents compared with the previous calendar year. There were two Type B Accident Investigations conducted in calendar year 2005: a chemical inhalation, and a radiological control issue.

However, in the first month of calendar year 2006, the DOE complex already experienced 19 injury events reportable in ORPS where individuals have suffered broken limbs, severe burns, or lacerations. Three of the events require Type B Accident Investigations. A brief description of each occurrence follows:

On January 3, 2006, while installing floor grating panels at the K-25 Building, an employee fell approximately 40 feet when one of the concrete floor panels under him collapsed. Emergency response personnel initially determined that the employee suffered a broken leg and a possible broken arm. The employee was air-transported to UT Medical Center in Knoxville, TN, where no internal injuries were identified. The employee underwent surgery for the broken arm, and the broken leg was set without surgery. The employee was discharged from the hospital January 9, 2006. [ORPS Report No. EM-ORO--BJC-K25ENVRES-2006-0001]

On January 10, 2006, a first-line manager received first- and second-degree burns on his face, neck, the side of his head, and left hand from a flash fire at the Savannah River National Laboratory. The fire occurred as the manager was using wipes soaked in isopropyl alcohol to perform secondary cleaning of an attritor vessel that contained pyrophoric residues. A principal investiga-

tor working with the manager used MET-L-X[®] extinguishing agent to smother the fire, and the area was evacuated. Emergency response personnel arrived on the scene and administered first aid to the burned employee before transporting him to a local hospital. [ORPS Report No. EM-SR--WSRC-LTA-2006-0002]

On January 11, 2006, while operating a table saw at the Heyrend Way Facility (a Science and Technology Campus facility located in Idaho Falls), a worker suffered a severe hand injury when the saw blade amputated the worker's little finger and cut across his palm. The saw blade guard was not in place at the time of the accident, as required. The injured worker was transported to a local hospital, where he underwent surgery, and remained in the hospital for 6 days. [ORPS Report No. NE-ID--BEA-INLLABS-2006-0001]

IMPLICATIONS

It is still too early to reach any specific conclusions regarding causal factors for the Type B accidents. However, the information that is currently available on the three Type B accidents indicates that worker behavioral lapses or inattention to work surroundings, failures to properly identify and analyze hazards, and noncompliances with written procedures and OSHA requirements contributed to each of these events.

RECOMMENDED ACTIONS

Previous success in work evolutions should not instill a feeling of complacency in personnel working at DOE facilities. Facility managers should:

- reinforce to their workers the importance of attention to the task at hand;
- emphasize the need to ensure that hazards are appropriately identified in the planning phase of work; and
- ensure that their workers comply with all applicable procedures and OSHA requirements.

More specific recommendations will be provided after the three Type B accident investigations are completed.

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PREVENT EVENTS

Learning from Industry Experience

PREVENT EVENTS is intended for use by personnel during morning meetings, pre-job briefings, and work unit meetings to communicate key industry experience.

Management

1. Has senior management established expectations for excellence in human performance and safety culture and an intolerance for process and workplace deficiencies?
2. Do teamwork and worker cooperation result from a culture of trust, respect, and fairness?
3. Is the value of communicating information that can affect human or equipment performance highly valued?
4. Do managers and supervisors routinely communicate and reinforce desired values and behaviors through observation, coaching, counseling, rewards, and performance feedback? Do these managers and supervisors also seek frequent input for performance improvement as well as trend performance?

Work Planners and Supervisors

1. Are key work processes implemented as designed and are they periodically assessed to eliminate weaknesses that could affect human performance? Key work processes include planning and scheduling, plant modifications, work controls, and use of operating experience to prevent future adverse events or improve performance.
2. Do work preparation and pre-job briefings identify critical actions, potential human errors, and their

effects on the facility, contingency plans, and applicable operating experience?

3. Are procedures and other work documents verified and validated for accuracy and usability? Are deficiencies corrected promptly?
4. Are changes to work plans and work schedules critically reviewed for unanticipated conditions that can cause errors or have an undesirable effect on the facility?
5. Do our root cause analyses identify the organizational, process, and individual contributors to human performance events?

Training

1. Are workers trained in error-prevention techniques? Do workers understand the bases and importance of these techniques, and are they trained to practice them?

Individual Worker

1. Am I alert and ready to perform work? Are there personal situations on my mind that could distract me from performing work safely?
2. Am I watchful for conditions or activities that can have an undesirable effect on my work performance or safety?
3. Do I stop work when I encounter changed or uncertain conditions?
4. Do I properly follow procedures and other work documents?
5. Do I understand and consistently use error-prevention techniques for task-specific situations?
6. Do I promptly report deficiencies and suggested improvements in processes, documents, equipment, and the workplace?

