

Date: Wed, 17 Dec 2003 19:33:14 -0500

Subject: Yellow Alert: Acid Sprays Into Eyes of Employee

The following Los Alamos National Laboratory Yellow Alert is distributed for review and utilization by other DOE sites and facilities. Please direct any questions to Linda Collier at lcollier@lanl.gov, or (505) 667-0604.

TITLE: Acid Sprays Into Eyes of Employee

IDENTIFIER: LANL TA55-2003-0001 (Original 1st Take number, LANL PS-7, No. 0301)

LESSONS LEARNED: This interim lessons learned was published as a 1st Take, providing preliminary analysis and initial recommendations to help prevent possible recurrence at other LANL sites. An additional alert about this event will follow if the investigation reveals details that indicate an unknown hazard exists for other employees involved in this type of activity.

DESCRIPTION: On July 30, 2003, a C-INC postdoctoral employee narrowly escaped serious injury when approximately 1 milliliter of a mixture of hydrochloric and hydrofluoric acid sprayed into his eyes while he was working in Building 1 at TA-48. The employee inserted a syringe into a slip-fit seal and attached it to a resin column in a custom-made arrangement to move the acid through the column. The employee performed this work within a fume hood and wore prescription safety glasses (without side shields), a lab coat, two pairs of latex gloves, and booties. When he depressed the syringe plunger, acid sprayed out from around the plastic seal over the top of his safety glasses and into his eyes. He was quickly aided by co-workers, who guided him to an eyewash station and irrigated his eyes. Emergency personnel then transported the employee to the Los Alamos Medical Center, where he received immediate attention, including lengthy eye irrigation. An ophthalmologist subsequently determined that the employee did not appear to have suffered permanent eye damage, and the employee was released back to work without restrictions.

PRELIMINARY ANALYSIS: The investigation into this event is ongoing and formal findings will be made available when the investigation is complete. However, preliminary analysis indicates that the chemical fume hood and safety glasses were not an adequate level of protection for the hazards associated with the work being performed. Preliminary review of safe work practice documents that served as the basis for authorizing the employee's chemistry activities revealed that the Hazard Control Plan was general in nature and thus relied on the worker's knowledge and expertise to conduct this activity. Neither the HCP nor any other documents contained adequate details regarding specific hazards or associated controls, and did not address or authorize the custom apparatus. It is important to note that the MSDSs for both hydrochloric and hydrofluoric acids specify the use of either chemical goggles or a full-face shield.

INITIAL RECOMMENDATIONS: Managers and supervisors must ensure workers are equipped with proper PPE, physical barriers, and adequate administrative tools for the task at hand. Additionally, the level of training that is provided to employees must be sufficient to enable them to recognize when additional hazards may be present, and controls and assistance are required. Employees also help to protect themselves when they perform their own hazard analysis before performing work. The C Division Director alluded to these principles in an all-

hands alert that read in part: "Before you perform an activity, ask yourself a simple question ? What is the worst possible thing that can happen to me in performing this task?? Managers, supervisors, and workers must ask this question and assure the work process addresses this worst-case scenario before authorizing or performing potentially hazardous activities."

Priority Descriptor: Yellow/Caution

Work/Function: Laboratory Experimentation

Hazard: Personal Injury/Hazardous Material

ISM Core Function: Analyze the Hazards; Develop and Implement Hazard Controls

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Authorized Derivative Classifier: Patricia Vardaro-Charles

Reviewing Official: Patricia Vardaro-Charles

References: Occurrence Report # ALO-LA-LANL-RADIOCHEM-2003-0015

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 Linda Collier at (505) 667-0604, e-mail at lcollier@lanl.gov of any action taken as a result of this report or of any technical inaccuracies you find. Your feedback is important and appreciated.