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Subject: Blue Alert: Chemical Storage Cabinet Blew Over

Title: Chemical Spill Occurred When Outdoor Flammable Materials Storage Cabinet Blew Over

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LESSONS LEARNED: Outdoor storage structures may be susceptible to high wind conditions or other weather phenomena that could result in hazardous materials releases or damage to stored items. Consideration should be given to siting exterior storage structures in protected locations, or to prohibiting outdoor storage of items that could adversely impact the environment if released.

DISCUSSION OF ACTIVITIES: Sometime during the evening of April 8 or early morning hours of April 9, a gust of wind blew over a free-standing flammable materials storage cabinet outside a building at a waste storage facility. The cabinet contained liquid chemicals in glass bottles. A 4-liter bottle of decahydronaphthalene ruptured, and the contents leaked through the seams of the cabinet to the ground. No other containers broke; however, the cabinet also contained m-cresol, 4-fluorophenol and 4-chlorophenol. Had these chemicals co-mingled, a violent chemical reaction or possible self ignition could have occurred. When a researcher arrived at the facility the next morning, he discovered the cabinet laying on the ground and the associated chemical spill. A HAZMAT Team was subsequently dispatched to the scene and cleaned up the spill. Facility personnel moved the remaining contents of the flammable materials cabinet to another storage location. The flammable materials cabinet was decontaminated and residues were placed in a satellite storage area. Other outdoor storage cabinets at the site were inspected to determine if they too were vulnerable to high wind conditions. Facility personnel moved the contents of a second flammable materials cabinet to prevent a recurrence.

RECOMMENDATIONS: Spring weather often means wind. In March, wind gusts up to 42 miles per hour were recorded in Los Alamos. This incident can easily happen at another DOE site unless prompt action is taken to inspect exterior storage sites to determine if they are vulnerable to high wind conditions. Corrective actions may be required to secure cabinets in place or to relocate cabinets to protected areas. Alternatively, cabinet contents may need to be moved to interior storage locations. If chemicals from multiple cabinets are relocated to a single storage area, chemical compatibility and segregation issues should be reviewed to ensure that chemicals are properly stored. Improper storage of chemicals is just as dangerous as having a flammable materials cabinet blow over.

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DOE FUNCTIONAL CATEGORY: Natural Phenomena Hazards
KEYWORDS: wind, storage cabinet, chemical, flammability

REFERENCES: n/a

FOLLOW-UP ACTIONS: Information in this report is accurate to the best of our knowledge. As a means of measuring the effectiveness of this report, please contact the originator of significant action(s) taken as a result of this report or of any technical inaccuracies you find. Your feedback is appreciated.