

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 24, 2009

MEMORANDUM FOR: T. J. Dwyer, Technical Director
FROM: B. Broderick and R.T. Davis
SUBJECT: Los Alamos Report for Week Ending July 24, 2009

Emergency Management: On Thursday, LANL conducted its annual full scale emergency exercise. The exercise simulated an explosion in the Beryllium Technology Facility foundry resulting in several worker casualties and a release of Beryllium from the facility. At one point, the exercise had to be paused for several hours when key participants including Los Alamos County Fire Department, LANL Emergency Response and LANL Emergency Management personnel were called away to deal with an actual hazardous material event, discussed below. Work has begun on an exercise after-action report that will analyze performance and identify opportunities for improvement.

Target Fabrication Facility: The event that led to the pause in the full scale exercise occurred at the Target Fabrication Facility, a radiological facility in Technical Area 35. A worker was transferring a nitric acid solution into a shipping container to prepare it for disposition when an unexpected chemical reaction occurred causing reddish fumes to begin evolving from the container. The worker became concerned that an exothermic reaction occurring inside the shipping container could cause it to fail, so he attempted to transfer the reacting solution into a more robust container. During this attempted transfer liquid began to bubble out of the container. At this point the worker left the room and prompted a facility evacuation. The facility evacuation was complicated by the evacuation alarm being out of service. Also, one individual had not been issued a facility emergency notification pager and remained unaware of the situation and inside the facility for a significant period of time.

Incident command decided to order adjacent facilities in TA-50 to shelter-in-place to protect personnel from exposure to any chemical vapors being exhausted from the Target Fabrication Facility through an unfiltered stack. Notification to shelter-in-place does not appear to have been effectively communicated to all impacted TA-50 facilities, including the WCRR repackaging facility.

Ultimately a hazardous materials team made entry into the facility and stabilized the scene. Fourteen workers, including the individual directly involved in the event were transported to Occupational Medicine where they were examined and released without restriction. The direct cause of the chemical reaction that initiated the event is still under investigation. In part due to similarities with the July 8th exothermic chemical reaction event at another TA-35 facility, the Material Science and Technology division has paused operations involving chemicals, pending reviews of work control documents and walkdowns of laboratory spaces where work with chemicals is performed (site rep weekly 7/10/09).

Formality of Operations: This week, the RANT shipping facility and the WCRR repackaging facility declared 'core' implementation of Conduct of Engineering. RANT and WCRR are the first operating nuclear facilities to complete core implementation of Conduct of Engineering and are also the first nuclear facilities to have declared the set of Conduct of Operations, Maintenance and Engineering as implemented. An independent verification review of Conduct of Engineering at RANT and WCRR is scheduled to begin next week.