



Department of Energy
Washington, DC 20585

September 19, 2007

MEMORANDUM FOR SHIRLEY J. OLINGER
ACTING MANAGER
OFFICE OF RIVER PROTECTION

DAVID A. BROCKMAN
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FROM: GLENN S. PODONSKY 
CHIEF HEALTH, SAFETY AND SECURITY OFFICER
OFFICE OF HEALTH, SAFETY AND SECURITY

SUBJECT: Type A Accident Investigation Board Report of the July 27, 2007
Tank 241-S-102 Waste Spill at the Hanford Tank Farm

On July 27, 2007, there was a spill of highly radioactive mixed waste from the S-102 Tank waste retrieval pumping system. The cause of the accident was an overpressure of a hose in the dilution line. Although required by the Documented Safety Analysis, the dilution line did not have a backflow device to protect the hose from overpressure.

The Accident Investigation Board evaluated the potential radiation and chemical vapor exposure hazard to workers. The Board found radiation exposures were well below regulatory or corporate administrative control limits. Two workers responding to the event were potentially exposed to chemical vapors. Because of the estimated low concentrations and short duration of the exposure, it is not likely that the spill event caused an overexposure or chronic health impacts. However, the S-102 event could have been more severe if workers had been in the immediate vicinity at the time of the release.

Of particular concern is the failure of tank farm management to properly consider the potential for chemical vapor exposure in the initial response to the accident and in the initial medical actions. Another significant concern was that the engineering reviews and testing conducted to support installation of this pumping system were flawed. The accident also revealed weaknesses in work control, industrial hygiene, radiological protection, medical response, and emergency management. Similar deficiencies have been identified in past events, indicating insufficient management oversight to ensure that nuclear safety and other safety requirements are met.

To ensure safe operations and prevent similar events in the future, the Accident Investigation Board identified Judgments of Need (JON) that require a consolidated corrective action plan. The corrective action plan should include an extent of condition review to determine the applicability of these JONs to other waste retrieval operations. It is the conclusion of the Board that these corrective actions should be completed and validated as effective by the Office of Environmental Management prior to the restart of S-102 waste retrieval operations. The corrective action plan should be submitted to the Assistant Secretary for Environmental Management for approval and to my office for review and comment, within sixty (60) calendar days from the date of this memorandum.

If you or your staff has any questions on this matter, please contact the Accident Investigation Board Chairman, William Miller, Deputy Director Office of Environment, Safety and Health Evaluations, (301) 903 5392, or Charles Lewis, Acting Director, Office of Corporate Safety Analysis at (301) 903-8008.

Attachment: Type A Accident Investigation Board Report of the July 27, 2007, Tank 241-S-102 Waste Spill at the Hanford Tank Farms, Volume 1, September 2007.

cc: w/attachment
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