

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 7, 2016

TO: S. A. Stokes, Technical Director
FROM: M. T. Sautman, Site Representative
SUBJECT: Savannah River Site Weekly Report for Week Ending October 7, 2016

In order to support hurricane evacuations from the South Carolina coast, the Savannah River Site was closed to non-essential personnel Wednesday through Friday. The site will resume normal operations at 6:30pm Friday.

H-Tank Farms: Workers were loading metal boxes containing waste from the H Diversion Box 8 Vault onto a flatbed trailer. Each of the boxes had dose rates that created a high radiation area. The workers were using a large forklift in order to load two boxes at once onto the trailer. After unloading one of the boxes, the second box (still on the tines) became unsteady and the forklift driver attempted to unload it onto the trailer. While doing this, he apparently lost sight of the forklift tine and unintentionally pushed the box already on the trailer enough (likely more than two feet) so that it fell off the flatbed trailer and landed on its side on the sloped asphalt adjacent the truck. Work was stopped and radiological surveys did not detect any release of contamination from the box. This box contained filters, motors, tools, chokers and other job waste that was bagged. The filters were a concern because they were high efficiency particulate air filters from the Modular Caustic Side Solvent Extraction Unit that would be expected to be loaded with cesium-137 particulates. This box's dose rate was 200 mrem/hr on contact and 120 mrem/hr whole body. The site representative observed SRR plan and execute their recovery actions. That afternoon, workers removed the other boxes and truck from the area, sealed the box-lid seam with tape, secured the lid onto the box with a strap, covered the box with a tarp, and erected and secured a fence around the box to prevent access to the high radiation area. The next day, riggers slid some wood under the box so they could tie two nylon straps around the box. The straps were connected to an engineered boom pole that was attached to a forklift and pulled up until the straps were taut. Then the forklift slowly reversed until the box was tilted enough such that the box would now want to sit on its bottom rather than its side. The boom pole was then slowly lowered until the box was resting upright. After verifying that no contamination had escaped, the box was moved with another forklift back into the vault. Since one of the contributing causes to this event was that the initial loading was not performed with sufficient spotters, two spotters were used during the recovery and SRR Construction is revising their construction management directive for flaggers/spotters for extended boom/telescopic forklifts. SRR Construction also held a stand down with all construction forces to discuss the event and is performing a lesson learned to identify better techniques for loading flatbed trailers.

K-Area: The site representative observed K-Area personnel load and blend the first six containers for the Plutonium Down Blend Project (see 8/26 – 9/16/16 weekly reports). Prior to beginning work, K-Area personnel participated in a thorough pre-job brief where they discussed the scope of work and error likely steps of the procedure. Additionally, during the evolution the operators utilized the reader-worker method for performing the work while demonstrating appropriate three-way communication techniques. While loading a down blend container, the room high humidity alarm was activated. K-Area personnel responded appropriately and quickly placed the material and the glovebox in a safe condition in accordance with their response procedure. The high humidity alarm is not a credited safety control, but it alerts operators that the room humidity is approaching a level at which the plutonium oxide could absorb significant moisture. The alarm cleared and the operators resumed down-blending activities with permission.