DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 23, 2007

MEMORANDUM FOR: J. Kent Fortenberry, Technical Director
FROM: M.T. Sautman, SRS Site Representative
SUBJECT: SRS Report for Week Ending November 23, 2007

Solid Waste Management Facility (SWMF): While a forklift operator was reversing and turning, he clipped the edge of a rusty, vented transuranic waste drum with a forklift tine. About 1 pint of liquid came out of the 4-inch hole. The workers immediately evacuated Pad 4 and 700 dpm α was found on the operator's shoe. Airborne contamination levels did not increase, but 200,000 dpm α/100 cm^2 was found at the spill and 120,000 dpm α/100 cm^2 on the tine. Tarps were placed over the spill and nearby drums and taped to the floor. A ventilated hut was later built around the area. This weekend, workers will remove nearby drums and pallets, overpack the breached drum, and decontaminate the concrete pad. The traffic control program at SWMF no longer requires spotters.

Emergency Preparedness (EP): The Site Rep observed four live burn drills conducted by the SRS Fire Department (SRSFD) in a hypothetical Savannah River Site (SRS) facility at the Fort Gordon Fire Training Facility. The scenarios involved three station responses to extinguish various fires (real fires and smoke generated by propane burners); rescue contaminated, injured workers; and perform decontamination. Once again, the Site Rep questioned the technical basis of some of the radiological data in the drill. (See 4/20/07 and 11/9/07 reports). For instance, one scenario involved the firefighters' electronic personal dosimeters (EPD) alarming with a six rem cumulative dose. However, this was impossible because only alpha radiation was involved in the release and the EPDs only detect beta and gamma radiation. After discussing this issue with contractor management, all EP drills will be reviewed by Radiological Protection Services prior to being conducted in the field until the proper scenario review protocols are implemented effectively.

These drills provide valuable experience for the SRSFD and Radiological Control Organization (RCO) personnel. The training highlighted some areas that need additional emphasis:

- In one scenario, firefighters caused a simulated criticality event by spraying water on a glovebox containing fissile material. The firefighters asked three times whether it was safe to do so and were incorrectly granted permission each time. This resulted from confusion at the Incident Command Post and personnel who were talking past each other.
- The SRSFD did not react as desired when EPDs alarmed due to simulated very high dose rates or a malfunctioning EPD.
- As was observed last year, RCO personnel need additional hands-on training and practice setting up a decontamination line and doffing contaminated bunker gear. (See 11/24/06 report).

Conduct of Operations: As was recommended by an independent assessment (see 8/3/07 report), SRS facilities are developing Disciplined Operations Sustainability Plans. These plans usually incorporate the following actions to try to prevent a decline in conduct of operations over time: 1) scheduled Work Pauses with a Recharge Briefing and Senior Supervisory Watches (SSW) approximately every ninety days, 2) periodic graded SSWs of all shift crews each quarter, 3) unannounced graded SSWs each quarter, 4) SSWs for planned high-risk or non-routine activities, and 5) targeted SSWs based on formal error analysis results and directed by management.