

## STORAGE/TREATMENT OF FEMP LABORATORY STANDARDS

### INVENTORY

The Fernald Environmental Management Project (FEMP) is currently storing 130 radiological laboratory standards (total volume of approximately 24.3 liters) in Room 180 of the Laboratory. These standards consist of solutions of Plutonium-239, Cesium-137, Barium-133, Ruthenium-106, Polonium-210, Radium-226, Thorium-229, Strontium-90, Americum-241 and 243, and Lead-210 in 1-2 Molar (M) Nitric Acid or 0.1M Hydrochloric Acid. No current need for these standards has been identified although they are in useable form (i.e. have not expired). These standards meet the definition of corrosivity (D002).

### STORAGE

The lab standards are currently stored in volumetric flasks with teflon tape over the cap. The flasks are stored in secondary containment filled with vermiculite and are secured in locked cabinets. Only one analyst in the laboratory has access to the keys to these cabinets.

The FEMP is planning to store these standards in their current configuration in the Laboratory until treated (currently planned to begin in mid-May). In order to minimize potential contact with these standards due to ALARA concerns, hazardous waste labels will not be placed on the individual volumetric flasks. However, signs will be placed on the outside of the cabinets and at the entrance to Room 180 to identify the use of this area to store hazardous waste. A spill kit has been placed inside the room. The FEMP will conduct weekly inspections of the standards and will maintain copies of the inspection logs in the RCRA Operating Record.

### TREATMENT

Treatment of the standards will be conducted as a treatability study. An experimental technology will be used to immobilize the lab standards for subsequent disposal at the Nevada Test Site (NTS). This technology involves the use of Gubka blocks and was developed in Russia (Gubka is Russian for sponge). The blocks are comprised of glass microspheres formed with a silicate binder and have a high surface area. The Gubka is placed on the surface of an open container filled with the laboratory standard. The Gubka floats and absorbs the standard, pulling the liquid into the interstitial voids via capillary action. The liquid evaporates, leaving the radio-metal and salts deposited in the pores. The loaded Gubka is in a final form that meets waste acceptance criteria for disposal at NTS as low-level waste.