

environment due to leakage of plutonium solutions through tank cooling coils. The loss of experienced facility personnel through resignation and retirement was an issue of marginal concern, with the recognition that this could become a serious concern if the current trend continued. The report did not include the Mark-31 targets in the materials of serious concern. DOE evaluated the request to pursue alternative arrangements for compliance with NEPA under the emergency provisions of 40 CFR 1506.11 in light of the Office of Environment, Safety and Health's evaluation and determined that the appropriate action would be to accelerate the evaluation of stabilization alternatives for the F-Canyon plutonium solutions by preparing a separate environmental impact statement on an accelerated schedule.

The vulnerabilities associated with the continued storage of the plutonium in solution have also been documented by the Defense Nuclear Facilities Safety Board (DNFSB). In April 1994, the DNFSB "concluded from observations and discussions with others that imminent hazards could arise within two to three years unless certain problems are corrected. . . . The Board is especially concerned about . . . (s)everal large tanks in the F-Canyon at the Savannah River Site (that) contain tens of thousands of gallons of solutions of plutonium and trans-plutonium isotopes. . . . If an earthquake or other accident were to breach the tanks, F-Canyon would become so contaminated that cleanup would be practically impossible. Containment of the radioactive materials under such circumstances would be highly uncertain . . . therefore, the Board recommends . . . (t)hat preparations be expedited to process the dissolved plutonium and trans-plutonium isotopes in tanks in the F-Canyon at the Savannah River Site into forms safer for interim storage. The Board considers this problem to be especially urgent."

While the Defense Nuclear Facilities Safety Board noted that no emergency presently exists, the Board also noted that the plutonium solutions in F-Canyon could present an imminent hazard within two or three years. Given that even the shortest time to complete stabilization is almost two years, the Department concluded that expediting the decision to stabilize plutonium solutions was prudent.

As noted above, DOE determined that there are safety concerns associated with plutonium solutions stored in F-Canyon that warrant consideration of actions prior to the issuance of a Record of Decision for the Interim Management

of Nuclear Materials EIS. Therefore, DOE decided to prepare the F-Canyon Plutonium Solutions EIS on an expedited basis. On August 23, 1994, DOE published in the **Federal Register** a notice amending the NOI for the Interim Management of Nuclear Materials at the SRS. The notice explained DOE's decision to prepare the F-Canyon Plutonium Solutions EIS.

The NOI for the Interim Management of Nuclear Materials EIS requested public comments and suggestions for DOE to consider in its determination of the scope of that EIS, and announced a public scoping period that ended on May 31, 1994. DOE held scoping meetings in Savannah, Georgia, North Augusta and Columbia, South Carolina, on May 12, 17, and 19, 1994, respectively. As a result of this public scoping process, DOE received comments applicable to the stabilization of F-Canyon plutonium solutions from individuals, organizations, and government agencies, and has considered these comments in the preparation of the F-Canyon Plutonium Solutions EIS.

On September 9, 1994, the U.S. Environmental Protection Agency published a Notice of Availability (NOA) in the **Federal Register** (59 FR 174, pages 46643-46644), which started the public comment period on the Draft F-Canyon Plutonium Solutions EIS; DOE published a corresponding NOA for the Draft EIS on September 9, 1994 (59 FR 174, pages 46627-46628). The public comment period ended on October 24, 1994.

DOE revised the Draft EIS in response to written and oral comments received during the public comment period from individuals, organizations, and Federal and state agencies. Public hearings were held in Columbia and North Augusta, South Carolina, and Savannah, Georgia (October 4, 6, and 11, 1994, respectively). On December 30, 1994, EPA published a Notice of Availability of the Final F-Canyon Plutonium Solutions EIS in the **Federal Register** (59 FR 250, page 67706), following distribution of approximately 400 copies to government officials and interested groups and individuals.

The Department of Energy received letters from the following organizations following the distribution of the Final EIS: (1) the South Carolina Department of Transportation; (2) the Centers for Disease Control, U.S. Department of Health and Human Services; (3) the National Oceanic and Atmospheric Administration, U.S. Department of Commerce; and, (4) the U.S. Environmental Protection Agency (EPA), Region IV. The EPA Region IV

letter indicates that a comment on the Draft EIS concerning impacts to ecological systems is only partially addressed in the Final EIS. The Final EIS briefly considered the potential for impacts to ecological systems and concluded that none of the alternatives discussed in the EIS would affect threatened or endangered species or any of the flora or fauna routinely found in the vicinity of F-Canyon areas. Therefore, DOE did not include a detailed analysis of the impacts on ecological systems in the Final EIS. DOE will be discussing with EPA how to better represent/analyze potential impacts of emissions on ecosystems. The EPA Region IV letter states that the preferred alternative will have the least overall impact and that EPA supports DOE's action. The National Oceanic and Atmospheric Administration concluded that no federally-listed threatened or endangered species under its jurisdiction would be affected by the proposed action. The other organizations had no comments on the Final EIS, and indicated they supported DOE's action plans or provided neither an indication of support nor opposition of DOE's action plans.

## II. Alternatives

The proposed action addressed in the Final F-Canyon Plutonium Solutions EIS is to stabilize the plutonium solutions in order to eliminate the risks inherent in storing this plutonium in liquid form. DOE examined four alternatives for stabilizing the solutions, and a no-action alternative, in the Final EIS.

### A. No Action

DOE would continue to manage the existing 303,000 liter (80,000 gallon) inventory of solutions in stainless steel tanks in the F-Canyon. The solutions would be monitored and corrective actions taken, as necessary, to minimize the potential for precipitation of the plutonium and the possibility of an inadvertent criticality. This action would continue for the 10-year time period evaluated in the Final EIS.

### B. Process to Plutonium Metal (the Preferred Alternative)

Under this alternative, DOE would use the existing F-Canyon and FB-Line processes and equipment to convert the plutonium solutions to metal. The metal would be a chemically stable form of plutonium that DOE could produce without modifying the existing equipment. Because there is no need for additional plutonium for weapons, DOE would not attempt to meet previous isotopic or chemical purity