Savannah River Site
Citizens Advisory Board

Recommendation 215
F-Canyon Complex Decommissioning

Background
The F-Canyon Complex began operations in 1954 and was used to process plutonium and other materials for national defense purposes. This facility used nitric acid dissolution and a chemical solvent extraction process to separate special nuclear material (e.g., plutonium and uranium) from irradiated reactor targets and other materials from the Department Of Energy (DOE) complex. The F-Canyon Complex included both the F-Canyon and FB-Line facilities. F-Canyon is a 175,000 square foot plutonium and uranium separations facility at the Savannah River Site (SRS). Recovered plutonium nitrate solutions were transferred to the 68,000 square foot FB-Line facility for conversion to plutonium metal.

All materials known to be suitable for treatment in the F-Canyon Complex have been processed. Therefore, DOE concluded that that the operation of F-Canyon Complex is not required for current or future stabilization, disposition, or Defense Programs needs and began the deactivation process, which included the reduction of hazards (e.g., flushing vessels and chemical inventory reductions). The F-Canyon Complex deactivation plan was originally based on an indefinite delay between deactivation and decommissioning. Decommissioning means that the facility structure and any residual radiological and/or chemical hazards are permanently removed or dispositioned. SRS's Citizens Advisory Board (CAB) Recommendation #184, "F-Canyon Complex Deactivation and Post Deactivation", adopted Jan. 27, 2004, recommended that "…DOE move directly to begin the decommissioning process after deactivation has been completed and bypass the lengthy Post Deactivation phase…" In November 2004, DOE changed the decommissioning timing from "indefinite' to "near term' ranging from 0 to 15 years. DOE strategy is for the preliminary decommissioning planning phase to begin this year with actual decommissioning activities to occur between 2009-2015

The closure of facilities in the F-Canyon Complex will follow the established SRS protocol for a site-specific, graded approach to decontamination and decommissioning (D&D). The level of characterization effort and magnitude of resource expenditure associated with each individual facility will be a function of that facility's direct and cumulative impact on the human environment. Clean or uncontaminated facilities will be closed under the National Environmental Policy Act (NEPA). Facilities requiring removal and/or *in-situ* disposition of residual inventory (chemical and/or radiological) will be decommissioned under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The near- and long-term remediation of contaminated soil and groundwater resources in the F-Canyon Complex will be conducted under CERCLA. Facilities that pose a substantial threat of contaminant release to the environment following deactivation, as well as facilities and soil and groundwater projects listed on the Federal Facilities Agreement (FFA), can be decommissioned or closed under CERCLA as non-time critical removal actions. This closure pathway is referred to as the Engineering Evaluation/Cost Analysis (EE/CA) Model. It is anticipated that decommissioning of selected nuclear facilities within the F-Canyon Complex will follow the EE/CA model. At this inchoate stage in the process, DOE has asked the CAB for their input on the planned decommissioning approach (Ref. 1).

Comments
The CAB realizes that it is very early in the F-Canyon Complex decommissioning planning process but appreciates the opportunity to provide early input to the program. Of particular importance to the CAB during the decommissioning planning and activities, is the protection of human health and the environment. Therefore, the CAB expects that any residual plutonium in the F-Canyon Complex will be quantified. Additionally, the methods to remove the residual or impacts to leaving some residual behind should be explained to stakeholders. Furthermore, the CAB would want assurances that no unacceptable source terms remain under the canyon or near the vicinity of its perimeter, which could pose additional impact to soil and groundwater. The CAB also looks forward to a more detailed briefing on the EE/CA model, and why a more stringent and remedial approach is not necessary.

Recommendation

The SRS CAB recommends that DOE consider conducting periodic informational briefings and/or public workshops (at least one per year prior to the 2009 decommissioning activity start date) on the different aspects of the F-Canyon Complex decommissioning process. As an initial starting point, the briefings or workshops should address the following:

1. How residual plutonium is quantified, how much is found, and how a decision will be made to leave it there or remove part of it.
2. What level of source terms lie underneath F-Canyon Complex or in the near vicinity of its perimeter, how will DOE adequately characterize the contamination, and how will it be factored into the final end state decision for the canyon.
3. Explain to stakeholders what the EE/CA process is, how it applies to CERCLA non-time critical removal actions, how it differs from other CERCLA actions, and why it was selected for the F-Canyon Complex instead of a possibly more stringent approach.

References

1. F-Canyon Complex Decommissioning, presentation to the FD&SR Committee by Helen Belencan, DOE, and Gerald Blount, WSRC. April 26, 2005.

Department of Energy-SR