Savannah River Site
Citizens Advisory Board

Recommendation 233

P-Area Operable Units

Background

P Reactor, the second reactor completed at the SRS, went critical February 20, 1954 and operated with relatively few interruptions until 1988. Similar to the other SRS reactors, P Reactor produced primarily tritium and plutonium and was initially designed to operate at low temperatures and pressure using heavy water to moderate and cool the reactor. In February 1991, it was placed in cold standby and was to be used to provide spare parts for L-Reactor and K-Reactor. This potential use was eliminated by the subsequent permanent shutdown of those Reactors and P-Reactor was shut down permanently.

Through parts of its operational history, P Reactor released liquid effluent to Steel Creek,

Par Pond, and the Reactor Seepage Basins (i.e. three inter-connected seepage basins).

Liquid effluents included disassembly basin purges, cooling water from the reactor heat exchangers, and other miscellaneous sources. Tritium, cesium-137 (137Cs) and solvents are identified as the most probable constituents of concern. The sources of these contaminants are no longer receiving additional loadings but characterization is ongoing.

To the maximum extent practicable, entire areas of the SRS (e.g., a facility area such as P-Area) will be addressed as a consolidated unit to take advantage of characterization data, risk assessment, and integrated solutions that consolidate areas into an expanded operable unit to effect economies of scale and reduce administrative requirements. The P-Area Opearable Units consist of 11 subunits (five FFA Operable Units, one structure – P Reactor Building, and five Potential Source Areas). This is the first SRS Area Completion involving a hardened facility (P-Reactor) (Ref. 1).

On May 22, 2003, the Department of Energy -Savannah River Operations Office (SR), the U.S. Environmental Protection Agency-Region 4 (US EPA) and the South Carolina

Department of Health and Environmental Control (SCDHEC), known hereafter as “the

Three Parties,” agreed to support accelerated cleanup of the Savannah River Site (SRS). The completion of the SRS environmental cleanup program will be achieved through the completion of area closures. The principle of area closure is to determine that areas are completed when all required response actions are completed. The completion of an area will be documented in an Area Record of Decision (ROD). The Three Parties agree that the concept of Area RODs is an appropriate tool for the resequencing of the FFA program to support area closure as the accelerated end date is being achieved.

The Three Parties are also planning a two-phased approach to obtain public input into the P-Reactor End State planning. The first phase is to receive input on the assessment approach that will be used to determine acceptable quantities of materials that can be left. The second phase consists of holding public workshops to solicit public input to determine the final Reactor End State.

Comment

The first major facility scheduled for in situ disposal is P Reactor to support P-Area Closure in FY 2013. In preparation for that project, appropriate end state alternatives that are protective, reasonable, compliant with appropriate regulations, and consistent with the planned future use and end state for its area is being planned. The SRS Citizens Advisory Board (CAB) is very interest in the ultimate end state of P-Reactor because it could set the example for other hardened facilities at SRS. The SRS CAB is familiar with and has endorsed the use of DOE's performance assessment modeling. The CAB is interested in learning more about how such modeling could be used to support the P-Reactor End State.

The SRS CAB is pleased to hear that the Three Parties consider stakeholder input as a critical factor in the P-Area Operable Unit decision-making process. We are very supportive of the public involvement actions being discussed. However, the SRS CAB does not want these public involvement sessions to merely be an opportunity for the Three Parties to tell the public what final decisions they have made. For stakeholder input to truly be part of the decision-making process, public involvement needs to be ongoing and stakeholders need to be kept abreast of all alternatives being considered.

Recommendation

The SRS CAB supports public involvement process for the P-Reactor End State and the P-Area Operable Unit and offers the following recommendations to DOE-SR, U.S. EPA-Region 4 and the SCDHEC, known hereafter as the "Three Parties":

1. The Three Parties should provide the results from the ongoing P-Area Operable Unit characterization to the SRS CAB as soon as the results are known.
2. The Three Parties should continue with formulating a performance assessment modeling strategy for P-Reactor and present the strategy through a series of informational presentations at upcoming FD&SR committee meetings.
3. The Three Parties should host a series of public workshops on the P-Reactor End State process. These workshops need to be held as the alternatives are being developed. Based upon these workshops, the Three Parties should consider issuing an early decision (Record of Decision - ROD) on the final Reactor End State prior to the P-Area Operable Unit ROD in 2010. Such action will help provide guidance for future hardened facilities End State decisions at SRS.
4. The Three Parties should utilize a cost/benefit evaluation when determining the P-Reactor End State. This process should incorporate cost effectiveness and be protective of human health and the environment. The process also needs to consider previous and planned final Reactor End State at other DOE and NRC-licensed facilities.
5. DOE-SR ensure that there is adequate funding for D&D and Soil & Groundwater Closure Projects to complete the End State planning process and complete the P-Area Closure as scheduled in the FFA.

References

1. P-Area Operable Unit, presentation to the FD&SR Committee by Chris Bergren, May 9, 2006.

Agency Responses
Department of Energy - SR
Environmental Protection Agency
South Carolina Department of Health and Environmental Control