



Savannah River Site Citizens Advisory Board

Recommendation 183 Glass Waste Storage Building #1 and #2 Long-term Impact

Background

The Department of Energy (DOE) Savannah River Operations Office (SR) has issued a Request for Proposals (RFP) for the construction of the Glass Waste Storage Building (GWSB) #2. The RFP is in support of the DOE Environmental Management mission. High Level Waste (HLW) is currently stored in tank farms at the Savannah River Site (SRS). The Defense Waste Processing Facility (DWPF) vitrifies the HLW, and seals it in stainless steel canisters. The canisters are then transported to a GWSB for interim storage until it can be permanently transferred to the Federal repository. The first GWSB (GWSB #1) is nearing capacity and a second GWSB is required to continue to meet DWPF's storage requirements. The GWSB vaults and canister supports will be constructed to meet DOE nuclear design "safety significant" requirements. This is necessary to protect the public, the environment, and facility workers from unacceptable radiation exposure in the event of structurally significant natural phenomena such as tornadoes, earthquakes, etc. The key technologies associated with the design include the following: ventilation (to remove radioactive decay heat from the storage vault), shielding (to protect workers from radiation hazards), and seismically qualified substructure and storage vaults (to ensure continued safe storage of the canisters in the event of a design basis earthquake). The GWSB #1 design is currently being updated for the new GWSB #2 to meet changes in codes and standards. The updated design for GWSB #2 will be issued for construction on or around January 22, 2004. The solicitation is being issued with a design package essentially equivalent to the GWSB #1 design with some reported minor changes (decision to downgrade the GWSB #2 vault from Safety Class (PC-3) to Safety Significant (PC-2) and the decision to eliminate active ventilation and HEPA filtration). When the final GWSB #2 design is complete, the solicitation will be revised to incorporate the final design (currently some of the items have yet to be removed from the design). The down selected bidders will bid in the final design. Contract award is anticipated late March 2004. Construction and system testing must be completed no later than February 28, 2006, based on date DOE imposed on the RFP. (Ref.1) Comment The SRS Citizens Advisory Board (CAB) has been following the need for a new GWSB over the past 8 years (Ref. 2). At that time, the CAB recommended a review of the design and operational changes with an independent scientific peer review (ISPR). The Board reiterated its concerns a year ago (Ref. 3). The SRS CAB understands now (Ref. 1) that SRS has already had an external independent evaluation performed on construction plans for the new GWSB and that SRS has incorporated changes to GWSB #2 requested in SRS CAB Motion 13 (viz., passive ventilation). The Board thanks SRS for these two actions. The CAB considers the design and construction of GWSB #2 to be a critical mission at SRS. Ultimately the CAB very much wants the Vitrified-High Level Wastes (V-HLW) removed from SRS and sent to the HLW repository, currently designated as Yucca Mountain (see Cab Motions 109, 108, and 85). However, the CAB recognizes that the opening of Yucca Mountain is not certain. Thus, the CAB wants to know the long-term impact that the proposed design for GWSB #1 and #2 will have in the event that Yucca Mountain never opens, given (1) the decision by DOE to downgrade GWSB #2 from Safety Class (PC-3) to Safety Significant (PC-2); given (2) the decision to eliminate active ventilation and HEPA filtration in GWSB #2 and #1; and given (3) an unanticipated loss of institutional control (should DOE unexpectedly cease operations at SRS and abandon the site). In addition, the Board wants additional assurance from DOE that the proposed project schedule is realistic and practicable with adequate contingency to prevent a slowdown or shut down of DWPF operations (see Motion 158, January 14, 2003). In recent public Waste Management Committee meetings with SRS, the CAB and public stated firmly that a decision either to shutdown DWPF operations or drastically reduce the production rate of vitrified-HLW to accommodate the project schedule of GWSB#2 is unacceptable. In summary, SRS

stakeholders are deeply concerned about what happens at and around SRS in the event that Yucca Mountain does not open, the Vitrified-HLW is left at SRS, and there is an unplanned loss of institutional control (the EIS considered "no action"; 10,000 years of institutional control; and 10,000 years with only 100 years of institutional control; see Motion #108, January 25, 2000). If the HLW repository at Yucca Mountain opens, whether late or on schedule, longevity of the GWSBs becomes moot. However, as noted in the Yucca Mountain EIS (see Motion #108), significantly increased environmental risk is forecasted for SRS and its surrounding area if nothing else occurs with the V-HLW and it is unexpectedly left at SRS. The SRS CAB believes that information about this unplanned event is critical, including the threat to the environment and human life that it may pose, and must become public knowledge to motivate opening the Yucca Mountain repository in a reasonable period of time. An ISPR may be one option to obtain this information. Recommendation The SRS CAB recommends that DOE-SR

1. By the end of April 2004, assure the Board that adequate contingencies are in place (i.e., time, schedule, etc.) and, if not, separately identify the contingencies that must be enacted for the GWSB#2, so that construction shall not impact the operations of the DWPF.
2. On or before September 28, 2004, describe the anticipated safety and environmental impacts assuming the following:
 - (1) Institutional controls are lost
 - (2) Yucca Mountain does not open
 - (3) The anticipated V-HLW canisters remain at SRS past the design life of GWSB #1 and GWSB #2.

References

1. Glass Waste Storage Building #2 Project, presentation to WM Committee by Guy Girard, January 6, 2004.
2. Citizens Advisory Board Recommendation No. 13 (adopted November 26, 1995), "High Level Waste Storage Building".
3. Citizens Advisory Board Recommendation No. 158 (adopted January 14, 2003), "Glass Waste Storage Building #2".

Agency Responses

[Department of Energy-SR](#)