



Savannah River Site Citizens Advisory Board

Recommendation 216 End State Vision

Background

Since the 2002 independent review team's *Top-to-Bottom Review*, the Department of Energy's (DOE) Office of Environmental Management (EM) has taken aggressive action from simply managing risk to accelerating risk reduction by expeditiously cleaning up the Cold War legacy. In March 2004, DOE-EM developed a site-specific *Risk-Based End State* (RBES) Vision Document for each DOE site, pursuant to DOE Policy 455.1, *Use of Risk-based End States*, and associated guidance (Ref. 1).

Based upon feedback from the National Governors' Association Next Steps Workshop in October 2004, the title of this document was changed from RBES to simply *End State Vision* (ESV). Since End States are not strictly "risk-based" but are logical, technically defensible, and protective of human health and the environment the "risk-based" nomenclature was dropped in this new draft document. This draft ESV is more comprehensive than the March 2004 draft. It now describes current conditions and planned end states for contained and released hazards, where the earlier draft focused only on released hazards for inactive soil and groundwater units and EM legacy facilities. In addition, the previous draft used the word "Variances" to describe significant different cleanup approaches or different end states relative to the original August 2002 Savannah River Site (SRS) EM Program Performance Management Plan (PMP). The ESV uses the term "Alternative End States" to remove the perception of any deviation from laws and regulations (Ref. 2).

The SRS ESV is a concise stakeholder's guide to current conditions at SRS and the conditions DOE plans to achieve through the site's EM Clean-up Project. Since the site's EM Cleanup Project is not a static situation, the ESV is continually evolving and improving process and periodic reviews of the end states with stakeholders are planned. The ESV is designed to define and categorize hazards in such a manner that all stakeholders can understand the hazard and what actions are being taken to reduce and/or eliminate the hazard. SRS hazards are organized into five major classes: Nuclear Materials, Radiological Waste, Non-Radiological Waste, Inactive Waste Units, and EM Facilities.

The vision for the end state at the SRS when environmental cleanup is complete by 2025 is that all SRS land will be federally owned, controlled and maintained in perpetuity. SRS is a site with an enduring mission and is not a closure site. Additional missions will continue under National Nuclear Security Administration (NNSA) management.

Comment

The SRS Citizens Advisory Board (CAB) endorses the ESV document and the ESV but points-out while how the Site gets to an end state may change, the end states should be known and should not drastically change over time. As part of the discussions on site hazards and ultimate end-states, risk is defined as the chance of harm or loss. Without a hazard, there is no risk. The SRS CAB believes that any risk-based approach should be applied to the extent possible with existing environmental laws and regulations but as practiced by the Nuclear Regulatory Commission (NRC), any risk assessment should be based upon scientifically determined risks, not risks perceptions. The ESV should define and list all risks associated with the site hazards and include their probabilities estimated for workers, the environment, and the general public. These estimates derived from computer models would help convince the public that a closed SRS site is safe. If proposed cleanup does not sufficiently reduce risk, the public needs to know as well as the remedies the Site will undertake to make the Site safe.

Based upon two recent National Academy of Sciences (NAS) books on DOE's radiological waste programs (Ref. 3), the SRS CAB supports the idea that the nation needs a formal, well-structured, risk-informed approach. DOE and its regulators should adopt the NAS proposed six step process [(1) initiate the process, laying out viable options and potential decisions; (2) scope the information and analysis; (3) collect data and refine models; (4) prepare refined risk assessments; (5) develop additional analyses to support the decision; and (6) make the decision] for risk-based decisions. The SRS CAB agrees that the biggest challenge to developing a meaningful risk-informed decision-making process is enabling meaningful participation by participants who have limited resources and technical knowledge. One way to help this process would be for DOE to release decision documents to the

public at the same time they are released to the regulatory community. It hurts the public trust to discover private vetting of documents before the public sees them, plus it slows down the process, and leads to increased conflict and less acceptance. By having open dialogue with interested stakeholders now, EM and the future Site mission organization (NNSA) could avoid this situation.

An open dialogue is also needed with the general public to help clarify why several low risk facilities are being taken to their end states while higher risk facilities (i.e. reactors, canyons, etc.) are being left alone. In addition, an end state needs to be identified in the ESV for all facilities, especially the reactors and canyons. If the current end-state for the High Level Waste (HLW) (i.e. Yucca Mountain) is delayed, the risk to the public of maintaining HLW in interim storage around SRS should be included in the ESV as well as supporting legal and technical discussions. The SRS CAB would like to see the published disposition schedule for spent fuel and DOE's priority ranking for sending waste if Yucca actually opens. Whether Yucca Mountain opens or doesn't open is critical to the end state.

If DOE, the regulators and the public (consistent with previous statements about involving the public) determine that certain TRU wastes do not need the degree of isolation afforded by Waste Isolation Pilot Plant (WIPP) and that they can be disposed in a non-WIPP location based on a Performance Assessment (PA) that protects the public, the environment, and workers, then DOE should pursue this alternative instead of pursuing methods to overcome TRU shipping disposal obstacles. DOE should fully explain why residential scenarios are being used for low level waste (LLW) hazards if SRS is to remain in Federal ownership in perpetuity. It would help accelerate cleanup of the Inactive Waste Units hazard if site ownership was established by law. The SRS CAB supports formal Congressional Authorization to accomplish this objective but future public access to the SRS should be addressed in the ESV.

The SRS CAB would also like to see the ESV provide the end-state for facilities that once held mixed low level and hazardous waste (Non-Radiological Waste hazards). The Consolidated Incineration Facility (CIF) would be an example.

The SRS CAB recalls the designation of SRS as a National Environmental Research Park several years ago but is concerned about losing this status if no research is being conducted. We believe that this site designation should be discussed in the ESV and the types of current and end state research that could be expected.

The SRS CAB continues to be concerned about the 13 metric tons of plutonium (Pu) with no disposal plans or ultimate end-state. DOE needs to address this hazard as soon as possible.

Recommendation

The SRS Citizens Advisory Board (CAB) offers the following recommendations:

1. In an effort to strengthen the ESV process, the SRS CAB offers the following and expects a progress report on each recommendation on or before September 27, 2005:
 - DOE apply the risk-informed approach proposed by NAS to determine the acceptable end states for all buildings, waste management facilities, reactors and active and inactive waste units containing radionuclides, heavy metals, or organic contaminants (e.g. tritium, etc.).
 - DOE use a risk-informed application to determine the end state for Pu238 waste.
 - DOE release decision documents to the public at the same time they are released for external agency review.
 - DOE evaluate the impact to SRS end states and risk to stakeholders if Yucca Mountain doesn't open and consider alternate plans should the repository not open.
 - DOE-HQ identify necessary actions to provide perpetual federal ownership of and responsibility for SRS.
 - DOE-HQ identify necessary actions to formally/legally name SRS as a National Environmental Research Park and discuss the types of current and end state research in the ESV.
2. DOE-HQ investigate and pursue Congressional Authorization to legitimize perpetual federal ownership of SRS and the identification of SRS as a National Environmental Research Park.
3. DOE use performance assessments to determine risks and provide results to the SRS CAB.

References

1. Risk Based End State Workshop, Strategic and Legacy Management Committee, April 13, 2004.
2. End State Vision Workshop, Strategic and Legacy Management Committee, March 24, 2005.
3. "Risk and Decisions About Disposition of Transuranic and High-Level Radioactive Waste" and

“Improving the Characterization and Treatment of Radioactive Wastes for the DOE’s Accelerated Site Cleanup Program”, National Academies Press, 2005.

Agency Responses

[Department of Energy-SR](#)