



**SRS Citizens Advisory Board**

**Waste Management Committee Meeting**

**Aiken Municipal Conference Center, Aiken, SC  
January 31, 2006**

The Savannah River Site (SRS) Citizens Advisory Board (CAB) Waste Management Committee (WMC) met on Tuesday, January 31, 2005, 5:00 PM, at the Aiken Municipal Conference Center, Aiken, SC. The purpose of this meeting was to discuss the Review of Stakeholder Questions on Salt Process/High Level Waste Program and to hear public comment. Attendance was as follows:

**CAB Members**

- Bob Meisenheimer  
- Joe Ortaldo  
- Karen Patterson  
Bill Lawless  
Mary Drye  
Leon Chavous  
Tracey Carroll  
Jerry Devitt

**Stakeholders**

Bill McDonell  
Todd Crawford  
Jean Sulc  
Perry Holcomb  
Mike French  
Murray Riley  
Jack Roberts  
Colin Austin  
Bill Willoughby  
Russ Messick  
Rick Ford  
Jim Gaver  
Bob Lengemars  
  
John Contardi, DNFSB  
Ben Rusche, GNAC  
  
\*Rick McLeod

**Regulators**

Turpin Ballard, EPA  
Rick Caldwell, II, SCDHEC  
Jim Brownlow, SCDHEC  
Jim Hardeman, GADNR  
Al Frazier, GADNR

**DOE/Contractors**

Bill Spader, DOE  
Bill Clark, DOE  
Doug Hintze, DOE  
Jim McCullough, DOE  
Michael Mikolanis, DOE  
Greg Johnson, DOE  
Julie Petersen, DOE  
Terry Vought, DOE  
Leo Sain, WSRC  
Ginger Dickert, WSRC  
Steve Thomas, WSRC  
Bob Hinds, WSRC  
Ron Campbell, WSRC  
Elmer Wilhite, WSRC  
Jim Cook, WSRC  
Bob Hiergesell, WSRC  
Joe Yanek, WSRC  
Teresa Haas, WSRC  
Michael Graham, BSRI  
Chuck Terhume, Parsons  
Jack Kasper, Parsons  
Tom Burns, Parsons  
Michael Norton, Parsons  
Jim Van Vliet, Parsons  
Jim Moore, WSRC

- *WM committee members*

\* *CAB technical advisor*

### **Welcome and Introduction:**

Bob Meisenheimer, Chair, thanked everyone for being at the meeting and asked them to introduce themselves. He expressed appreciation for the presence of the past CAB members. He reviewed the agenda topics from the last two WMC meeting of December 13 and January 3. From those two meetings, questions had been developed and the purpose of this meeting was to hear the site address those questions.

### **Review of Stakeholder Questions on Salt Process/High Level Waste Program:**

Bill Clark, DOE senior engineer for the salt program, explained that Terry Spears, SWPF Federal Project Director, was on two weeks of active military duty and could not attend.

Mr. Clark explained that DOE has reviewed and categorized all 58 questions and comments received from the stakeholders. Subject matter experts provided input to develop the responses. Discussion slides were developed to present information that addresses most aspects of questions. Final written responses to questions will be completed and given to the WMC by February 21, 2006.

Mr. Clark explained that some questions cannot be answered fully at this time. For example, the path forward for minimizing impacts to the HLW system has not been finalized. DOE will continue to update the Waste Management Committee frequently on the status of the SWPF project and efforts to implement the interim salt processing strategy.

The 58 questions were categorized into bins to help make answering easier. The presentation was broken down into three sections as follows. The number of questions per category is in parenthesis.

- Section I  
Risk Analysis (2); Cost/Benefit Analysis (1); Accident Dose Calculations (6); DOE Risk Standards & Practices (3)
- Section II  
HLW System Impacts (12); Closing the Gap (2); Life Cycle Cost Impacts (4); SWPF Design & Project Schedule (4); 3116 Process (2)
- Section III  
Defense Nuclear Facility Safety Board (DNFSB) Interactions (2); Decision Process (7); Lessons Learned (4)

There were nine comments to make up the total 58 questions/comments.

Mr. Clark requested that questions be asked at the end of each section instead of during the presentations in order to preserve time.

### **Section I: Risk, Cost/Benefit and Accidents.**

In relation to any cost / benefit analysis, an informal SWPF project specific cost analysis was

performed that included a high level discussion of high-level waste (HLW) system impacts. This formed the basis for presentations to senior DOE management on the SWPF project. A formal, documented cost/benefit analysis to support this decision was not conducted. The LIP/NIP report, CBU-PIT-2005-00150, Cost and Benefit Evaluation for Three Salt Waste Treatment Cases at SRS, July 7, 2005, provides information on the impacts of delaying salt processing and the potential impacts to the high level waste system. This report was made available to the WMC at the December 13 meeting.

Risk was treated as part of the project specific cost analysis noted above. However, DOE did not conduct a specific risk analysis to support the decision on upgrading the SWPF from PC-2 to PC-3. Risk was considered qualitatively throughout all levels of the decision making process. The decision makers were aware that delaying SWPF would result in leaving HLW in SRS's tanks longer and that there was risk associated with that action. Had DOE not made this decision as it did, it would likely have resulted in expenditure of additional resources and schedule impacts to ensure the success of this critical project.

DOE calculated the maximum unmitigated dose to a co-located worker due to a natural phenomena hazard (NPH) event at the SWPF as 35 rem. Error bars are not calculated for these types of numbers. Instead, safety margins are generated via the choice of conservative values for key parameters and the selection of conservative accident scenarios that impact the dose calculation. These include items such as: waste activity; airborne release fractions; dose conversion factors; and release durations. Other conservatisms include: taking no credit for dose reductions due to passive features; assuming fires coincident with liquid release; assuming that all process vessels are full and release their entire inventories; and assuming that all events occur simultaneously. Collectively these conservatisms produced the 35 rem value. The DNFSB utilized additional conservatisms related to surface roughness and meteorology resulting in an additional factor of 10 conservatism and their 350 rem dose.

A comparison of the unmitigated dose for co-located workers resulting from an NPH event for a number of SRS facilities was requested. A key driver in the dose calculations is the type and amount of radioactive material available for release in these facilities. Since the total material available in the other facilities requested for comparison is significantly greater, the doses are also significantly greater. Specific dose numbers are not available for security reasons. Doses are calculated as unmitigated to provide the maximum dose possible so that appropriate mitigation features can then be developed.

In considering the reduction in risk due to the redesign of the SWPF from PC-2 to PC-3, in the original SWPF analysis, the non-safety related components are assumed to fail resulting in an estimated dose to the co-located worker of 35 rem. For PC-3 structures, the primary confinement systems are designed to not fail during an NPH event. Limited cracking of walls, floors, piping, etc., is expected but it results in no release of radioactive materials to the environment/worker. For PC-2 structures, some permanent deformation of the structure and systems is expected resulting in cracking of concrete walls, floors, piping, etc., resulting in reduced release of radioactive materials to the environment/worker. There is no accepted methodology for estimating the reduced worker dose that would result from a PC-2 design that

has experienced an earthquake. Therefore, it is not possible to provide a definitive reduction of risk between PC-2 and PC-3 designs.

In looking at DOE's standards for acceptable risk, DOE nuclear safety standards establish a requirement that consequences from credible accidents do not challenge 25 rem (50-year total effective dose) to the offsite public with an expectation that these consequences be a small fraction of 25 rem. DOE nuclear safety standards dictate a qualitative process for analyzing credible accidents to establish worker safety. This process does not specify a specific acceptable worker dose.

There is no established Departmental policy on how much money is spent to reduce unacceptable risk to acceptable levels. If consequences of an event challenge applicable guidelines, DOE established appropriate controls to mitigate the exposure without direct consideration of the cost. DOE-STD