The Savannah River Site (SRS) Citizens Advisory Board (CAB) Waste Management Committee (WMC) met on Tuesday, June 27, 2006, 5:00 PM, at the North Augusta Community Center, Aiken, SC. The purpose of this meeting was to review the Salt Process Status, Tank Waste Management Update, including background information, Annual Tank Inspection report, Waste-on-Wheels (WOW), Tank Closure Request for Addition Information and to hear public comment. Attendance was as follows:

**CAB Members**
- Bob Meisenheimer
- Joe Ortaldo
- Manuel Bettencourt
- Wendell Lyon
- Judith Green-McLeod

**Stakeholders**
- Mike French
- Jack Roberts
- Perry Holcomb

**DOE/Contractors**
- Terry Spears, DOE
- Doug Hintze, DOE
- Bill Clark, DOE
- Tom Treger, DOE
- Sherri Ross, DOE
- Les Sonnenberg, WSRC
- Donald Thaxton, WSRC
- Elmer Wilhite, WSRC SRNL
- Ron Campbell, WSRC
- Charlie Hansen, Parsons
- Jim Moore, WSRC

*Rick McLeod

- WM committee members  * CAB technical advisor

Note: Bill Lawless, a member of the WMC, was not able to attend the meeting.
**Welcome and Introduction:**

Bob Meisenheimer, Chair, thanked everyone for being at the meeting and asked them to introduce themselves. Mr. Meisenheimer referenced the meeting ground rules and reviewed the agenda.

**Salt Process Status:**

Bill Clark, DOE, explained that the salt program was moving forward and making some progress. The Saltstone Facility was modified by Washington Savannah River Company (WSRC) and the contractor readiness review has been completed. Proficiency runs were being performed with clean grout. DOE would perform their readiness reviews as soon as there is a clear path forward with permits from South Carolina Department of Health and Environmental Control (SCDHEC). Once the site obtains the required permits, the low level waste material in Tank 50 will be processed to get experience with Saltstone. This would probably take three weeks. They would then transfer the first batch of Deliquification, Dissolution, and Adjustment (DDA) process waste, currently staged and ready in Tank 49. Defense Waste Process Facility (DWPF) recycle waste from Tank 23 will then be used to adjust the waste in Tank 50 prior to disposal.

The Actinide Removal Process (ARP) construction is complete. The ARP will go into a lay-up mode later this year following initial startup testing until the Modular Caustic Side Solvent Extraction Unit (MCU) is complete.

The MCU construction is approximately 65 percent complete. Testing of the contactor units in Tennessee is going very well. Fourteen have been assembled onto a skid as they will be placed in the facility and will be prepared for shipping in the next few weeks. There is interaction with Parsons in sharing the results of the tests for incorporation into the Salt Waste Processing Facility (SWPF). The startup testing for MCU should begin in January 2007. The operational readiness review should occur in the summer of 2007 with operations startup scheduled for September 2007 with the integration of MCU and ARP.

The Section 3116 Determination for Salt Waste Disposal proposed aggregation for Tank 48 waste resulting in the organic waste and salt waste going to Saltstone. Eight hundred thousand curies of cesium from Tank 48 would then go to the vaults. Both SCDHEC and the Nuclear Regulatory Commission (NRC) suggested minimizing the curies to Saltstone. Based on
discussions with the State, DOE is now considering new treatment technologies for Tank 48 using aggregation as a backup. If the new technologies are feasible, the organics in the waste would be destroyed, and the curies would be removed in SWPF and then sent to DWPF for vitrification. There is currently an impressive group of independent technical reviewers at the site reviewing the plans for Tank 48 disposition and the technologies being evaluated. Their inputs will be considered in down-selecting the technology.

The SWPF Enhanced Preliminary Design continues and is on schedule for completion in mid-September. The technical and DOE reviews would then take place. The Critical Decision (CD) 2 package will then be finalized which sets the cost, schedule and technical baselines for the SWPF project. The request for CD-2 should be ready to send to DOE-Headquarters in January 2007.

Discussions revolved around the delay in receiving permit approvals from SCDHEC. There are two permits required, the Waste Water Treatment Permit and the Land Disposal Permit. The members of the WMC discussed developing a recommendation to try to help move the process along.

**Tank Waste Management Update:**

**Background Information:**

Bob Meisenheimer mentioned that the WMC is to get an annual update on the annual tank inspection report. Along with the report, the WMC requested the site keep the committee informed on the Waste-on-Wheels (WOW) program.

Tom Treger, Senior Program Manager, explained that he would give both updates along with background information. Construction of the tanks began in early 1950’s and continued into 1981. Over 140 million gallons of nuclear waste is generated and concentrated by evaporation to a present volume of about 36 million gallons. Two tanks were closed in 1997. Mr. Treger reviewed the types of radioactive tanks. Type I, II and IV are non-compliant tanks. No new waste is placed in these type tanks. The Type III tanks are compliant tanks accepting new waste.

There are three forms of waste stored in the tanks. Supernate that is the largest volume (17.9 million gallons or 49 percent) containing 217 million curies or 51 percent. Saltcake at 15.7
million gallons or 43 percent and 13 million curies or 3 percent. Sludge at 2.9 million gallons or 8 percent and 194 million curies or 46 percent.

Three evaporators are being used, generating 3.4 million gallons of space in Fiscal Year 2005. These evaporators help make working space available. There is currently 1.4 million gallons of working space not counting the contingency space available. Many activities are used to optimize the working space including eliminating or reducing influents, minimizing internal additions, recovering Tank 48 for use, using DWPF recycle waste to dissolve salt cake and adjusting salt solutions for processing.

**Annual Tank Inspection Report:**

Mr. Treger reviewed the goals of the tank inspection program which are ensuring tanks are capable of performing their function safely, degradation mechanisms are known and follow predictive models, and early detection of degradation and effective mitigation.

The history of tanks that have known leak sites is as follows:

- Type I tanks, 12 tanks, built between 1951 and 1953 – seven known leaks.
- Type II tanks, four tanks, built between 1955 and 1956 – four known leaks
- Type IV tanks, eight tanks, built between 1956 and 1960 – two known leaks
- Type III tanks, 27 tanks, built between 1966 and 1981 – No leak sites

No tanks are actually leaking waste at this time and waste levels are below the leaksites.

The leaks in the early style tanks were due to the carbon steel plate construction with the tank contents being high in nitrates. There is high stress in the plates at the welds causing stress corrosion cracking. The solution to the problem was stress relieve plates after welding and initiated chemistry control programs. The cracks are preventable and lessons learned were incorporated into the Type III tanks.

The tank wall cracks are small in length, mostly less than six inches. The leak rates are slow, typically a few gallons a week. They are located in or adjacent to the weld seams and are self
sealing over extended periods of time. Wide-angle photography, closed circuit television and ultrasonic evaluations are used to inspect the tanks.

Over the past year there were three tanks showing new leaksites. They were:

- Tank 5 – three leaksites – 24, 35 and 76 inches above the tank bottom. All near welds.
- Tank 12 – two leaksites – 70 and 129 inches above the tank bottom. All near welds.
- Tank 15 – one leaksite – 31 inches above the tank bottom. Near a weld.

All of these tank levels are below the leak sites.

**Waste-on-Wheels (WOW):**

WOW is an approach to performing bulk sludge removal from SRS waste tanks as part of the tank closure program. This approach uses submersible short shaft mixer pumps inserted into the waste tanks, high capacity that could reduce the number of pumps needed to mix the sludge, long life pumps to extend reuse capability, portable reusable control room and a portable reusable motor control center. The WOW process replaces massive infrastructure requirements saving time and dollars.

The WOW system has been used to suspend and remove sludge from Tank 5 with good results except where significant cooling coils obstructed flow. Currently WOW is being used for mixing sludge in Tank 6. Two pumps were used in both Tank 5 and 6. Future tanks may require three pumps to handle obstruction problems.

For total tank management, tank space remains a concern and is closely monitored and maintained. The Tank Inspection program continues to employ new technology and is a viable and active program. The WOW project is beginning to show tangible benefits.

**Tank Closure Request for Additional Information:**

Sherri Ross, DOE Programs Division, reviewed the status of the Tank Closure Request for Addition Information (RAI). The timeline is as follows:
• DOE submitted the draft Waste Determination to the NRC on September 30, 2005.

• NRC submitted the RAI to DOE on March 31, 2006.

• DOE response to RAI is to be determined. There could be additional rounds of RAI’s and responses.

It is still to be determined when the NRC will issue their Technical Evaluation Report, when DOE will issue the Waste Determination and when Tank 19 and 18 will be closed.

There were 61 comments in the RAI. Ms. Ross broke down the comments into various categories such as two were general comments, 11 were removal to maximum extent practical and so on. The comments basically questioned the assumptions used, the technical basis and the results of the performance assessment and Draft Waste Determination.

The actions to date to resolve the RAI’s consisted of three clarification calls to DOE/NRC/SCDHEC and the Environmental Protection Agency (EPA) the week of May 15, 2006. WSRC has delivered the draft RAI responses to DOE on June 2, 2006. The NRC and SCDHEC toured the site on June 7, 2006. A public meeting was held on June 8, 2006 in which 44 comments were discussed. DOE announced that additional waste removal technology is under investigation. DOE is currently reviewing the draft RAI responses.

There are two main open issues. One is defining the locations for members of the public versus the intruder. A member of the public point of compliance contamination level is 25 millirem/year and the intruder is evaluated against 500 millirem/year. The site used the boundary of the General Separations Area as the boundary for members of the public access based on the 100 year institutional control and the federal land ownership into perpetuity. This was also used for the closure for Tanks 17 and 20. The NRC RAI requests that the point of compliance be 100 meters from the facility boundary. All parties plan on meeting on June 29, 2006 to try to reach resolution. The resolution affects multiple RAI comments including the interpretation of modeling results against performance objectives and therefore determination decisions. If the point of compliance needs to be 100 meters, the resulting evaluations could take one to two years.

The other issue is the removal of waste to the maximum extent practical. At the tank cleaning workshop in Atlanta on March 27 and 28, 2006, a new technology using high pressure, low flow water transfer technology appeared promising. The site will determine the risks associated with
the implementation schedule, worker dose, tank closure delay and cost compared to the risk reduction benefits.

DOE plans to resolve the point of compliance and new technology issues in advance of submitting the bulk of the RAI responses to the NRC. All parties will be included in the decision process including the CAB. All comments are welcome.

**Public Comment:**

There was no public comment.

**Adjourn:**

Mr. Meisenheimer adjourned the meeting but requested that the CAB members that are part of the WMC remain to discuss the path forward for the WMC. Mr. Meisenheimer invited anyone at the meeting interested to join them if they would like.

**Follow-Up Actions:**

The following are the actions items:

- Develop a proposed recommendation on the salt process operation. – Rick McLeod/Jim Moore