Summary Notes, September 10, 2007
SRS Citizens Advisory Board
Waste Management Committee Meeting

The Savannah River Site (SRS) Citizens Advisory Board (CAB) Waste Management Committee (WMC) met on Monday, September 10, 2007, 5-7 p.m., at the Aiken Municipal Conference Center, in Aiken SC.

The purpose of this meeting was to discuss the following:

1) Status of Tank 48;
2) Saltstone Operations;
3) Present and discuss draft motion on the Transuranic (TRU) Waste Inadvertently Dispositioned in the Low-Level Waste (LLW) Slit Trenches; and
4) an opportunity for public comments on CAB related documents.

ATTENDEES:

CAB Members	**Stakeholders**	**DOE/Contractors/Others**
- Joe Ortaldo, Chair	Lee Poe	Sheron Smith, DOE-SR
- Alex Williams, Vice Chair	Murray Riley	Terry Spears, DOE-SR
- Manuel Bettencourt	Perry Holcomb	Larry Ling, DOE-SR
- Franklin Boulineau		Vickie Wheeler, DOE-SR
- Leon Chavous		Gerri Flemming, DOE-SR
- Karen Patterson		Elester Patter, WSRC
- Stan Howard		Sonny Goldston, WSRC
K. Jayaraman	Turpin Ballard, EPA	Dave Olson, WSRC
Judy Greene		Leo Sain, WSRC
Wendell Lyon		Ed Wannemacher, V3
		Tom Williams, Parsons
	Rick McLeod, Technical Advisor	Beverly News, Parsons
		Dave Olson, Parsons
		Charlie Hansen, Parsons
		Tom Burns, Parsons
		Steve Gorin, Parsons
		Cherri DeFigh-Price, Parsons
		Heather Dukes, Parsons
- *Waste Management Committee Members*		

Welcome and Introduction:
Joe Ortaldo, WMC Chair, welcomed and thanked everyone for attending the meeting.

Mr. Ortaldo referenced the meeting ground rules and encouraged participation of all attendees; stated that the order of topics on tonight's agenda will be revised; and asked for introductions. Mr. Ortaldo reviewed the upcoming meeting schedule.

Present and discuss draft motion on the TRU Waste Inadvertently Dispositioned in the LLW Slit Trenches: *(presented by Alex Williams, WMC Vice Chair)*
The meeting began with Alex Williams, WMC Vice Chair, presenting the *draft motion* on the TRU Waste Inadvertently Dispositioned in the LLW Slit Trenches. He referenced a letter from the Department of Energy (DOE) addressed to the Environmental Protection Agency (EPA) that notified EPA of the inadvertent disposal. Based on the presentation by Sonny Goldston, WSRC,

on August 21, 2007, the SRS CAB recognizes the limited quantity of TRU waste that would require retrieval. In addition, the actual quantity of transuranic isotopes in the waste is suspect due to the limited analytical technology at the time of generation and the use of conservative engineering knowledge related to the waste; therefore, the actual classification of the waste is in question. Mr. Williams stated that the waste under consideration in this current evaluation may actually be better contained, and may exhibit lower risk than that disposed of between 1955 and 1970 in the Old Radioactive Waste Burial Ground (ORWBG).

The SRS CAB's preference is disposal in place, if DOE Orders and regulations can be adhered to and assures the protection of the public and the environment. Mr. Williams explained that before the SRS CAB could support a retrieval approach, DOE would need to conduct a full evaluation of the risks, costs, safety, and environmental impacts and share the results. The draft motion recommends that before a final decision is made on which option (retrieval vs. disposal in place) will be implemented; the SRS CAB requests the following on or before November 16, 2007:

1. DOE-SR provide justification under DOE Orders and regulations that the waste can remain in place and that the protection of the public and the environment can be demonstrated.

2. DOE-SR conduct a thorough evaluation of the risks, costs, safety, and environmental impacts associated with both options (the retrieval option and the disposal in place option) and share the results with the SRS CAB. Furthermore, demonstrate how this retrieval option differs from a similar retrieval operation from the ORWBG.

3. DOE-SR identify the results from the Root Cause Analysis and the necessary corrective actions they will take to prevent the recurrence of any future inadvertent TRU waste disposals in the E-Area trenches and share these results with the SRS CAB.

Open discussions included were, has Washington Savannah River Company (WSRC) or DOE confirmed that the drums definitely contain TRU Waste. WSRC responded that based on the records there was only one source which was the Californium waste stream. Other than relying on the records, retrieval and verification is the only other way to determine the contents. Mr. Williams stated that all parties have to assume the worst case scenario and base the evaluation and decisions on that scenario.

Mr. Manuel Bettencourt reminded the members of the CAB that within the last two years, the CAB voted to not sign a letter saying let's go after all TRU waste at the burial ground. He continued by stating, that based on the CAB's previous experience, they recommended not to endorse going after TRU waste, and that the study that was conducted indicated that it was safer to leave the TRU waste in place.

Mr. Ortaldo recapped the concerns of the CAB members and members of the public, by stating that WSRC and DOE are completing the evaluation, which is correct. The evaluation must be completed, but the CAB members would like to know of their planned decision prior to finalizing that decision.

The WMC members provided minor revisions to the *draft motion* and plan to present the *draft motion* for approval at the upcoming full Board meeting in September.

Saltstone Operations: *(presented by Larry Ling, DOE-SR)*

- Briefed the timeline of Saltstone Permit Modification (Public Comment Period; Public Meeting; Issuance of Permit Modification; Legal Challenges; and Consent Agreement). The Department plans to startup Tank 50 and pump approximately 83,000 gallons a week during November 2007 through April 2008 and then start up the ARP/MCU as part of an interim processing which will continue until the Salt Waste Processing Facility is available. Continued discussions of the content of Tank 50 and of the feed that is currently available to process.

- Provided the current status of Saltstone Facility
  - Facility modifications

- Provided the schedule for restart of the Saltstone Facility

- Provided the planned future of the Saltstone vaults/cells

Mr. Ling recapped his informal remarks by stating that although we did not expect to receive the Saltstone Permit Mod approval as early as August, with the facility updates the DOE plans to restart the Saltstone Operations in late-October or early-November of this year.

Status of Tank 48 *(provided by Vickie Wheeler, DOE-SR)*

Purpose: To provide an update on Tank 48 Status.

- Background
- Technology selection
- Path forward
- Supplemental Information

Background:

- Tank 48 contains legacy materials containing organic tetraphenylborate compound.
- Materials originated from the operation of the In-Tank Precipitation process which was shut down in 1998.
- The organic materials are incompatible with other waste treatment processes at the Savannah River Site.
- Tank 48 remains isolated and unproductive in tank farm operations.
- Return to service is critical to the tank space management program.
- Since 2002, the Savannah River Site has been actively engaged in identifying a technology capable of safely and cost-effectively disposition the waste.

Technology Selection:

- Investigated over 30 different processing technologies.
- Evaluated 12 different locations including options for storage.
- Conducted several extensive technology evaluations.
- Completed Testing on two leading technologies.
- Recently completed three Independent Reviews.

Path Forward:

- Preparing CD-1 Package for Fluidized Bed Steam Reforming (FBSR)
- Proposing to maintain a backup technology – Wet Air Oxidation (WAO)
- Current plans call for Tank 48 return to service by September 2012.

Fluidized Bed Steam Reforming Background and Application:

- Fluidized Bed Steam Reforming is a moderate temperature robust technology.

        - Operates at 625-750°C in the absence of air or oxygen.
        - Reactions include organic destruction, denitration, evaporation, dehydration, and hydrothermal reactivity
        - Accommodates wide range of feeds.
    - Produces solid mineral phases from aqueous solutions.
        - High Na containing wastes (NaOH, NaNO3, NaNO2, etc) can be made into sodium carbonates, sodium aluminates, sodium silicates, or Na-Al-Si (NAS) minerals
    - Commercial chemical applications.
    - Biomass gasification, syngas and hydrogen production, metal reduction, chemical processes, petroleum refinery applications, and black liquor destruction/energy recovery in the pulp and paper industry.
    - Commercial radioactive application.
    - Facility in Erwin, TN treats radioactive waste from commercial nuclear power plants.
    - DOE radioactive application.
    - Facility to be installed as part of the Idaho Cleanup Project (ICP) to treat radioactive Sodium Bearing Waste (SBW).

Wet Air Oxidation Background and Application:

- Aqueous phase process in which organic and inorganic components are oxidized using air (O2)
- Typical operating ranges
    - Temperature: 100 - 320°C (sub-critical)
    - Pressures: 100 - 3150 psi (sub-critical)
    - Reaction times: 15 - 120 minutes
    - Chemical oxygen demand (COD): 10,000 - 150,000 mg/L
- Reaction products
    - CO2, H2O, SO4, HCl, and low molecular weight short chain oxygenated organics (carboxylic acids), e.g., acetic acid
- First patented in Sweden in 1911 for destruction of spent pulping liquors.
- 1930s and 1940s
    - First commercialized as the Zimmermann Process for the manufacture of artificial vanilla flavoring (vanillin). Vanillin was produced by the low temperature (160°C) WAO of the lignosulfonic acids in spent pulping liquor from paper mills.
- 1950s
    - High temperature/pressure WAO was commercialized for the destruction of paper mill waste liquor and sludge
- Early 1960s
    - Low temperature/pressure WAO was applied to biological sludges, to enhance dewaterability.
    - Called thermal sludge conditioning (TSC) or Low Pressure Oxidation (LPO).
- Late 1960s and Early 1970s
    - WAO was used to regenerate the spent powdered activated carbon for reuse in the PACT® system.
    - Referred to as wet air regeneration (WAR).
- 1970s to Present
    - Commercialized for the treatment of industrial wastewaters including catalytic and non-catalytic WAO.

Ms. Wheeler stated that Tank 48 is needed tank space and in a central location to support future operations. Karen Patterson asked who had completed the Independent Technical Reviews. Ms. Wheeler replied that the team's members were compiled of technical experts from commercial and academia backgrounds who used a Department of Defense type process to review the technology, test results, as well as safety. She continued by stating that simulants of the materials in the Tanks was made to use in the pilot testing to achieve the testing results accurately. Ms. Wheeler reviewed the types of materials that are found in Tank 48, and why it has taken so long to choose the technology. She stated that the cost range is $96-138M estimated for the scope of work to be completed.

Public Comment:

Manuel Bettencourt asked Judy Greene if there was any new news on the status of the Savannah River Ecology Laboratory. Ms. Greene replied not at this time.

Perry Holcomb congratulated Alex Williams on the good job presenting the proposed *draft motion*.

Adjourn:

Mr. Ortaldo adjourned the meeting at 6:05 p.m.

Follow-Up Actions:

1. A document that describes the 40 Alternative Technologies considered.
2. Documentation of the inventory of the current organics in the Tanks.