

**Summary Notes, September 9, 2008**  
**SRS Citizens Advisory Board**  
**Waste Management and Nuclear Materials Joint Committee Meeting**

The Savannah River Site (SRS) Citizens Advisory Board (CAB) Waste Management Committee (WMC) and the Nuclear Materials (NM) Committee met jointly on Tuesday, September 9, 2008, 5:30-7:30 p.m., at Newberry Hall, in Aiken SC.

The purpose of the meeting was to discuss the 1) the General Accounting Office (GAO) Report on reduction of risks prior to processing additional nuclear material at the Savannah River Site H-Canyon, presented by Allen Gunter, DOE-SR; and 2) Plutonium Disposition to the Defense Waste Processing Facility, presented by Jean Ridley, DOE-SR and to provide an opportunity for public comments on CAB related documents.

**ATTENDEES:**

**CAB Members**

- Joe Ortaldo, WMC Chair  
- Manuel Bettencourt, NM Chair  
- Alex Williams, WMC Vice Chair  
- Judy Greene, NM Vice Chair  
- Stan Howard, NM Vice Chair  
Leon Chavous  
Ed Burke  
Don Bridges  
Wendell Lyon  
Kathe Golden  
Donna Antonucci  
Madeleine Marshall  
Sarah Watson

**Stakeholders**

Karen Patterson, Public  
Greg Grunzel, SCDHEC  
Joan Mobley, Public  
Murray Riley, Public  
Liz Goergen, Public  
Chuck Goergen, Public  
Rick Castagna, Public  
Matt Duncan, DNFSB  
Gayle Gulick, Public  
Virginia Dunkelbarger, Public  
Howard Gnann, Public  
Liz Goodson, Public  
Lee Poe, Public  
Martha Berry, EPA  
Alan Eckmyre, Technical Advisor

**DOE/Contractors/Others**

Sheron Smith, DOE-SR  
Marc Woodworth, DOE-SR  
Glenn Christenbury, DOE-SR  
Patrick McGuire, DOE-SR  
Jean Ridley, DOE-SR  
Terry Spears, DOE-SR  
Mark Keefer, WSRC  
Pete Hill, WSRC  
Rob Trimble, SRNS  
Les Sorenberg, WSRC  
Larry Ling, SRNS  
Paul Sauerborn, SRNS  
Dawn Gillas, DOE-SR  
Allen Gunter, DOE-SR

**Welcome and Introduction:**

Manuel Bettencourt, NM Chair, called the meeting to order. He acknowledged that this is a joint committee meeting with the Waste Management Committee and recognized Mr. Joe Ortaldo, WMC Chair. Mr. Bettencourt welcomed and thanked everyone for attending the meeting.

Mr. Bettencourt, NM Chair, referenced the meeting ground rules and encouraged participation of all attendees. Then, the attendees introduced themselves.

Mr. Bettencourt, NM Chair, reviewed the agenda topics and the upcoming committee meeting schedule.

**Committee Update:**

Mr. Bettencourt, NM Chair, provided an update and status of the three NM open and pending recommendations. He stated that the Recommendation on the NMDCCC would be discussed with the NM Committee vice chairs to consider closure. Mr. Bettencourt informed the attendees that Stan Howard, CAB member, attended a meeting today where

**Summary Notes, September 9, 2008**

**SRS Citizens Advisory Board**

**Waste Management and Nuclear Materials Joint Committee Meeting**

the status of Yucca Mountain opening was provided. Mr. Bettencourt requested a briefing from Mr. Howard.

Mr. Ortaldo, WMC Chair, provided a status of the Waste Management Committee activities, the solvent waste transport completion success, and the success of the DWPF pouring of canisters this fiscal year. He reviewed the status of the WMC open and pending recommendations.

**Committee Meeting Summary:**

Allen Gunter, DOE-SR, provided an overview of the methodology, results, and recommendations from the GAO review of nuclear materials processing in H Canyon/HB Line at SRS. He stated that the review was performed at the request of the Subcommittee on Energy and Waste Development on Appropriation. The review included the types of material to be processed in H Canyon/HB Line and associated costs; the waste generation and whether SRS facilities can process and disposition this waste; and ensure compliance with safety and environmental requirements. The review was conducted between October 2007 and July 2008. The reviewers conducted a review of DOE's nuclear materials disposition plans, how costs are estimated, how milestones are determined, Waste Management Plans, DOE Business Plans, Project Management, DNFSB Reports, and the process to monitor performance. The reviewers interviewed EM personnel, NNSA personnel, and IG personnel. The GAO report identified no safety concerns with operating H Canyon/HB Line through 2019, provided DOE invests in the planned infrastructure upgrades. Open discussions expressed concerns by the Committee members included creating additional waste for disposition; the path to disposition the waste; costs; and the impacts of long-term storage if Yucca Mountain does not open. Questions from the committee members included how DOE and SRNS have input into the NMDCCC decisions; when NNSA takes over the site, will there be a split of ownership and the Canyons remain under EM? There will not be a split of ownership of the Canyons. The Canyons will be shut down and decommissioned under the EM scope. DOE ensured that the costs have been added; the waste disposition path has been determined; and that H Canyon did not have a defined mission until after 2007 so did not have a long mission life is why the safety basis documents were not reformatted into the DOE-STD-3009 standard. DOE expects the revised format to be in place by 2010. In conclusion, H Canyon can be operated safely through 2019 to disposition Al-clad Spent Nuclear Fuel; Highly Enriched Uranium, and Plutonium. SRS has, nor will not, process any materials without adequate safety basis. SRS has made progress on upgrading H Canyon/ HB Line safety documentation. EM has updated the cost data for disposition of nuclear materials through H Canyon / HB Line to include the costs for waste storage and disposition. H Canyon has completed initiatives to minimize waste generation. The NM Committee members expressed appreciation for the briefing and support for the consolidation and processing of Pu in the H Canyon / HB Line.

Jean Ridley, DOE-SR, provided a briefing on the Plutonium Disposition through the Defense Waste Processing Facility (DWPF). The briefing included an overview of sludge preparation; the introduction of additional Pu, the nuclear criticality basics; and the safety, criticality studies. She reviewed the sludge constituents in detail and explained the DWPF vitrification process. She stated that sludge batching is tailored to achieve acceptable glass quality as projected with the Glassmaker Model. Don Bridges,

**Summary Notes, September 9, 2008**

**SRS Citizens Advisory Board**

**Waste Management and Nuclear Materials Joint Committee Meeting**

CAB member, asked if the process has changed. Ms. Ridley replied that the process has not changed, but has been improved by increased waste loading. Pu disposition in DWPF is not a new process; it has been accomplished successfully in the past. The increased quantities of curries being processed with an aging infrastructure are of concern to the CAB members. Ms. Ridley stated that DOE is continuing to study and will ensure the infrastructure and system is robust enough to handle the increase. Criticality studies will continue throughout the process. Discussions of the draft EIS issuance and opportunities to comment on the process occurred. Ms. Ridley continued be providing details of the risks and consequences for a criticality in DWPF. Bill Lawless asked if the higher curries loaded canisters would be marked an easily identifiable. Ms. Ridley replied that each canister is marked, documented with contents and is validated. Joe Ortaldo asked if there is any way to monitor the concentration and ensure all Pu that went into the processing, did actually go into the canisters. Open discussion on the concentration and controls, sampling, and any issues would suspend operations to prevent a criticality occurrence. In conclusion, Ms. Ridley stated that the safety, criticality studies, which are ongoing at SRS, have confirmed safe operations. The CAB members expressed appreciation for the briefing and stated a very good job on a very difficult subject. The WMC members would like an update on the DWPF criticality studies in four or five months.

Stan Howard, CAB Member, provided a short review of the Eric Knox, Status of Yucca Mountain briefing and encouraged the CAB members to invite Mr. Knox to speak at a future meeting.

**Public Comment:**

Bill Lawless – Very good news to hear of the Legacy Purex final shipments offsite.

Tom Clements – Appreciated meeting notifications. Expressed concerns of Yucca Mountain opening delays. Encouraged CAB members to think about criticalities and the explosion in Russia in 1957, suggested to lesson pubic risks.

New Member Applicants who stated their desire to become members of the Board were: Rick Castagna, Gayle Gulick, Virginia Dunkelbarger.

**Adjourn:**

Mr. Bettencourt and Mr. Ortaldo adjourned the meeting at 7:50 p.m.

**Follow-Up Actions:** The WMC would like an update on the DWPF criticality studies in four or five months.

\*\*\*\*\*









**PRESENTATIONS:**

**GAO Review of SRS Processing of Nuclear Materials – *Presented by Allen Gunter, DOE-SR***

# Summary Notes, September 9, 2008

## SRS Citizens Advisory Board

### Waste Management and Nuclear Materials Joint Committee Meeting

<p>General Accounting Office's Review of Savannah River Site's Processing of Nuclear Materials</p> <p>Allen Gunter, DOE-SR September 9, 2008</p>  <p>1</p>	<p>Purpose</p> <ul style="list-style-type: none"> <li>Present an overview to the CAB subcommittees the methodology, results, and recommendations from the GAO review of nuclear material processing, H Canyon/HB-Line, at SRS.</li> </ul>  <p>2</p>
<p>Background</p> <ul style="list-style-type: none"> <li>H Canyon began operations in 1955.</li> <li>Processed nuclear materials for nuclear weapons and nuclear energy.</li> <li>Previously, DOE planned to shutdown H Canyon/HB-Line in 2007.</li> <li>Then in, August 2006, Deputy Secretary approved extending H Canyon/HB-Line operations until 2019.</li> </ul>  <p>3</p>	<p>Why the Review was Performed?</p> <ul style="list-style-type: none"> <li>Subcommittee on Energy and Water Development Committee on Appropriation requested the GAO to perform the review to include: <ul style="list-style-type: none"> <li>Types of material to be processed in H Canyon/HB-Line and associated costs.</li> <li>Waste generation and whether SRS facilities can process and disposition this waste.</li> <li>Compliance with safety and environment requirements.</li> </ul> </li> </ul>  <p>4</p>
<p>Methodology</p> <ul style="list-style-type: none"> <li>Conducted from October 2007 thru July 2008.</li> <li>Reviewed DOE's nuclear materials disposition plans.</li> <li>Reviewed DOE's project management guidance. <ul style="list-style-type: none"> <li>How to estimate costs</li> <li>Determine milestones</li> <li>Monitor performance</li> </ul> </li> <li>Interviewed: <ul style="list-style-type: none"> <li>EM personnel</li> <li>NNSA personnel</li> <li>IG personnel</li> <li>Two persons that performed independent reviews</li> </ul> </li> </ul>  <p>5</p>	<p>Methodology (cont)</p> <ul style="list-style-type: none"> <li>Reviewed Waste Management plans and Risk Management plans.</li> <li>Reviewed DOE Business Plans.</li> <li>Reviewed integrated project management documents that outline the approach to meet H Canyon/HB-Line processing and waste management goals.</li> <li>Reviewed DNFSB reports.</li> <li>Toured H Canyon/HB-Line and Waste Management facilities.</li> </ul>  <p>6</p>
<p>Results</p> <ul style="list-style-type: none"> <li>GAO identified no safety concerns with operating H Canyon/HB-Line through 2019, provided DOE invests in the planned infrastructure upgrades.</li> <li>DOE's plan for processing these materials has several benefits: <ul style="list-style-type: none"> <li>Decreases the amount of SNF to be disposed of in the geological repository.</li> <li>Downblends HEU to LEU, which is not weapons usable, but can be used in commercial reactors.</li> <li>Provides revenue to the Department of Treasury from the sale of LEU.</li> </ul> </li> <li>GAO identified several concerns: <ul style="list-style-type: none"> <li>DOE has not included all associated cost with storing and treating waste generated in H Canyon/HB-Line.</li> <li>Additional nuclear materials that may be suitable for processing in H Canyon/HB-Line.</li> <li>Additional waste from H Canyon/HB-Line cannot be received by SRS Liquid Waste processes without critical enhancements listed below: <ul style="list-style-type: none"> <li>Interim processes (DOA, AWP, and MCL)</li> <li>SWPF</li> </ul> </li> <li>Continued delays in upgrades to H Canyon/HB-Line safety documentation</li> </ul> </li> </ul>  <p>7</p>	<p>Recommendations</p> <ul style="list-style-type: none"> <li>Rec. 1: Ensure all material requiring H Canyon/HB-Line processing are identified.</li> <li>DOE Response: <ul style="list-style-type: none"> <li>NMCCC forum provides cross-cutting nuclear materials disposition and consolidation planning.</li> <li>Close coordination within DOE and utilizing DOE Order 413.3 will ensure future decisions about adding additional materials beyond the EU Disposition project to H Canyon/HB-Line will be coordinated to minimize impact to H Canyon/HB-Line disposition schedule.</li> </ul> </li> </ul>  <p>8</p>
<p>Recommendations (cont)</p> <ul style="list-style-type: none"> <li>Rec. 2: Develop a comprehensive estimate for operating H Canyon including all waste storage and disposition costs.</li> <li>DOE Response: <ul style="list-style-type: none"> <li>EM staff have developed a comprehensive cost estimate for completing the H Canyon/HB-Line mission, including cost for storing and dispositioning the resulting wastes.</li> </ul> </li> </ul>  <p>9</p>	<p>Recommendations (cont)</p> <ul style="list-style-type: none"> <li>Rec. 3: Direct SRS develop a plan to ensure adequate personnel are available to complete required safety analysis in a timely manner.</li> <li>DOE Response: <ul style="list-style-type: none"> <li>Directed the SRS contractor, on July 2, 2008, to upgrade H Canyon/HB-Line safety analysis to be consistent with DOE-STD-3009 format and content to support H Canyon operating schedule</li> <li>EM-60, Deputy Assistant Secretary for Safety Management and Operations, will follow this progress in the preparation, review, and approval of the safety documentation upgrade to ensure completion to support SNF processing in FY2010.</li> </ul> </li> </ul>  <p>10</p>


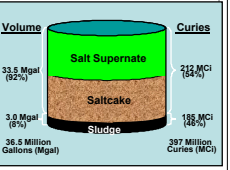
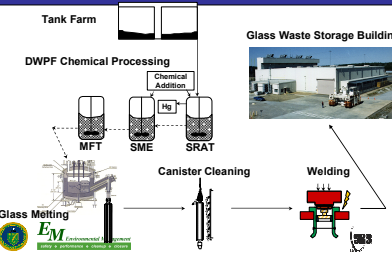
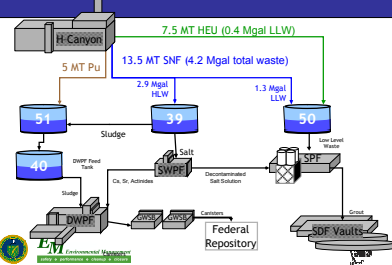
# Summary Notes, September 9, 2008

## SRS Citizens Advisory Board

### Waste Management and Nuclear Materials Joint Committee Meeting

<h4>Conclusion</h4> <ul style="list-style-type: none"> <li>○ H Canyon can be operated safely through 2019 to disposition Al-clad SNF, HEU, and plutonium.</li> <li>○ SRS has, nor will not, process any materials without adequate safety basis.</li> <li>○ SRS has made progress on upgrading H Canyon/HB-Line safety documentation.</li> <li>○ EM has updated the cost estimate for dispositioning nuclear materials through H Canyon/HB-Line to include cost for waste storage and disposition.</li> <li>○ H Canyon has completed initiatives to minimize waste generation.</li> </ul>	<h4>Acronyms</h4> <ul style="list-style-type: none"> <li>○ Al-Clad – Aluminum Clad</li> <li>○ ARP – Actinide Removal Process</li> <li>○ CAB – Citizens Advisory Board</li> <li>○ DDA – Deliquification, Dissolution, and Adjustment</li> <li>○ DNFSB – Defense Nuclear Facilities Safety Board</li> <li>○ DOE – Department of Energy</li> <li>○ EM – Office of Environmental Management</li> <li>○ EU – Enriched Uranium</li> <li>○ GAO – General Accounting Office</li> <li>○ HEU – Highly Enriched Uranium</li> <li>○ IG – Office of Inspector General</li> <li>○ LEU – Low Enriched Uranium</li> <li>○ MCU – Modular Cautic-Side Solvent Extraction Cycle</li> <li>○ NMDCCC – Nuclear Materials Disposition Consolidation Coordination Committee</li> <li>○ NNSA – National Nuclear Security Administration</li> <li>○ SNF – Spent Nuclear Fuel</li> <li>○ SRS – Savannah River Site</li> <li>○ STD – Standard</li> <li>○ SWPF – Salt Waste Processing Facility</li> </ul>
---	---

### Plutonium Disposition to the Defense Waste Processing Facility – presented by Jean Ridley, DOE-SR

<h4>Plutonium Disposition through Defense Waste Processing Facility</h4>  <p>September 9, 2008</p> <p>Jean M. Ridley, P.E. Acting Director, Waste Disposition Projects Division DOE - Savannah River Operations Office</p>	<h4>Agenda</h4> <ul style="list-style-type: none"> <li>• Overview of sludge preparation</li> <li>• Introduction of additional plutonium (Pu)</li> <li>• Nuclear criticality basics</li> <li>• Safety/criticality studies</li> </ul>
<h4>Sludge Constituents</h4>  <ul style="list-style-type: none"> <li>• Metal oxides and hydroxides from uranium and plutonium chemical separations</li> <li>• Currently contains ~ 1 metric ton (MT) Pu as precipitated oxide</li> <li>• Dispositioned via vitrification in borosilicate glass for disposal in federal repository             <ul style="list-style-type: none"> <li>– Initiated DWPF sludge vitrification operations in 1996</li> <li>– Produced &gt; 2575 DWPF canisters to date - 10 million pounds of glass poured</li> </ul> </li> </ul>	<h4>DWPF Vitrification Process</h4> 
<h4>Sludge Feed Requirements</h4> <p><b>Sludge batching is tailored to achieve</b></p> <ul style="list-style-type: none"> <li>• Acceptable glass quality as projected with the Glassmaker Model</li> <li>• Amounts and combinations of sludge that result in reasonably efficient washing</li> <li>• Combinations of sludge that provide efficiency and maximize waste loading and vitrification throughput</li> <li>• Sufficient batch size to support sustained vitrification operations while preparing the next batch</li> <li>• Performance of batch qualification and product assurance testing in parallel with sludge feed preparation</li> <li>• Meeting waste removal and waste tank closure commitments</li> </ul>	<h4>Pu Disposition from H-Canyon</h4> 

# Summary Notes, September 9, 2008

## SRS Citizens Advisory Board

### Waste Management and Nuclear Materials Joint Committee Meeting

