Summary Notes, March 11, 2008
SRS Citizens Advisory Board
Nuclear Materials and Waste Management Committees Joint Meeting

The Savannah River Site (SRS) Citizens Advisory Board (CAB) Nuclear Materials (NM) and the Waste Management Committee (WMC) met on Tuesday, March 11, 2008, 6-8 p.m., at the Aiken Municipal Conference Center, in Aiken SC.

The purpose of this meeting was to discuss the following:

1) Presentation on the NNSA Plutonium Disposition Program Update;
2) Informal remarks on the Environmental Management Nuclear Materials Update;
3) FY 2010 Integrated Priority List Input; and
4) An opportunity for public comments on CAB related issues.

ATTENDEES:

CAB Members	**Stakeholders**	**DOE/Contractors/Others**
- Manuel Bettencourt, NM Chair	Bill Lawless, Public	Bill Clark, NNSA
- Joe Ortaldo, WM Chair	Russ Messick, Public	Robert Edwards, DOE-SR
Wendell Lyon	Karen Patterson, Public	Sheron Smith, DOE-SR
K. Jayaraman	Bill McDonald, Public	Terry Spears, DOE-SR
Ed Burke	Mike French, Public	Pat McGuire, DOE-SR
Kathe Golden	Tom Clements, Public	Allen Gunter, DOE-SR
Leon Chavous	Liz Goodson, Public	Bert Crapse, DOE-SR
Don Bridges	Malia Crane, EPA	Mike Simmons, DOE-SR
Stan Howard	Donald Orth, Public	Helen Belencan, DOE-SR
Mary Drye	Josh Yon, SCDHEC	Dawn Gillas, DOE-SR
Madeleine Marshall	Murray Riley, Public	Larry Ling, DOE-SR
Ranowul Jzar		Paul Sauerborn, WSRC
		Steve Thomas, WSRC
		Tom Fekete, DOE-SR
		Paul Daughtery, DOE-SR
		Les Sonnenberg, WSRC
- *Nuclear Materials and Waste Management Committee Chairs*		

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, provided an update and status of the NM open and pending recommendations. He recommended that Recommendation #177 be closed based on the recent letter from Mr. Allison.

Mr. Ortaldo, WMC Chair, provided a status of the Waste Management Committee activities and stated that there are 13 WMC recommendations which all in the open status. Six of those recommendations can be closed with one more action.

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

Meeting Summary:

Bill Clark, National Nuclear Security Administration (NNSA), provided a presentation on the NNSA Plutonium Disposition Program to include the Mixed Oxide Fuel (MOX) facility, the Pit Disassembly and Conversion Facility (PDCF), and the Waste Solidification Building (WSB) and there roles in Pu Disposition and waste disposition. The CAB members had significant interest in the progress, licensing and permitting, the security, and the criticality reviews and mitigations. The three major projects are all moving forward in an integrated approach with the end result that plutonium being turned into electricity while making it no longer usable for nuclear weapons with no impact to the Savannah River Site cleanup missions. The WSB is being built to support high activity and low activity liquid waste streams from the MOX and the PDCF will neutralize, evaporate, and solidify the waste in drums for permanent disposal offsite. The WSB estimated cost is $245-330M. When the plans were developed for the MOX work scope, the Environmental management (EM) cleanup mission target completion was by 2019. Now that the completion date has been extended by EM until 2031, the CAB would like to recommend that EM consider a cost benefit analysis and review the possibility of overlapping capabilities of the existing waste facilities that may be used instead of building the new WSB. Cost savings could be transferred from NNSA to EM to process the MOX waste streams.

Robert Edwards, DOE-SR, provided informal remarks on the Plutonium Disposition Project Alternatives Analysis; the Highly Enriched Uranium program; the status of the Plutonium Receipts at SRS; and the overall status of the Plutonium Disposition efforts. He stated that the Department is reevaluating the need for the Pu Vitrification Project due to the MOX and H Canyon capabilities to process the Pu. Elimination of this project would be a cost savings to the taxpayers. He expects a decision to be made by April-May 2008. Mr. Edwards assured the CAB members that all of the Pu would be vitrified with little or no impact to the tank space issue.

Final discussions were conducted by Madeleine Marshall, Chair, Strategic and Legacy Management Committee, on the CAB's response to the FY2010 Integrated Priority List. On February 26, 2008, Jeffrey Allison, Manager issued a letter to Ms. Donna Antonucci, Chairperson, Citizens Advisory Board, requesting the Board's review and input to the fiscal year (FY) 2010 Integrated Priority List (IPL). The FY 2010 IPL is the Site's preliminary prioritization of the scope of work to be accomplished and the Board's comments will be added in the Site's deliverable to the Department of Energy – Environmental Management (EM) Office.

Based on new EM guidance that was issued by Mark Frei, EM-HQ, on February 28th, the CAB members have requested a budget briefing be provided at the full board meeting at the end of March to include additional information and clarification on the planned accomplishments for the work scope; schedules/milestones; validated baseline; and compliance projections for various prioritized activities. Due to requesting and providing the additional information, their IPL recommendation due date has been extended to March 26, 2008.

Public Comment:

During the public comment period, Tom Clements who represents *Friends of the Earth* stated multiple concerns on the high costs, lack of oversight and responsibilities by the Department of Energy, the NNSA, and the Nuclear Energy Agencies on the overall plutonium disposition efforts. Mr. Clements continued that they would like to understand the full scope of the plutonium disposition projects and have the opportunity to comment on the Environmental Impact Statements and National Environmental Policy Act (NEPA) documents prior to the construction of the facilities.

Adjourn:

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

Follow-Up Actions:

1. Is the British MOX Facility having problems? *(Manuel to Clark)*

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PRESENTATIONS:

NNSA's Plutonium Disposition Program Update *(presented by Bill Clark)*

Pu Disposition Program

- At the end of the Cold War, the U.S. and Russia began to cooperate to prevent the proliferation of weapons of mass destruction.
- In 2000, both countries agreed to dispose of 34 metric tons of surplus weapon-grade plutonium each – enough for thousands of nuclear weapons.
- Both the U.S. and Russia will dispose of plutonium by irradiating it as mixed oxide (MOX) fuel in existing reactors.
- Three facilities will be built at Savannah River Site for the U.S. plutonium disposition program:
  - *Pit Disassembly and Conversion Facility (PDCF)* – where nuclear weapons pits are disassembled & the resulting metal is converted into an unclassified plutonium oxide form.
  - *MOX Fuel Fabrication Facility (MFFF)* – where plutonium oxide is mixed with uranium oxide to form MOX fuel assemblies.
  - *Waste Solidification Building (WSB)* – where waste from PDCF and MFFF is conditioned for final disposal.

Pu Facilities Locations

Photo with facilities

MFFF Process Overview

Aqueous Polishing (AP)

- primarily used to remove Ga & Am contaminants
- also removes other impurities

MOX Process (MP)

- process blends UO2 and PuO2 powder into pellets
- loads pellets into rods
- manufacture of fuel assemblies

MOX Current Status

- Construction started August 1, 2007.
  - Construction of the MFFF Process Building structure continues on schedule
    - Foundation construction is nearly 50% complete.
    - Construction started on intermediate walls and floors.
  - Glovebox Assembly Complex construction started
  - Electrical Substation site preparation started
  - Delivery of long-lead equipment continued on schedule to support construction
- All project performance indicators are green – CPI and SPI are 1.0.
- Installed ~ 15,011 cubic yards of concrete.
- Installed ~ 2,722 tons of rebar.
- Installed ~ 3,178 feet of embedded piping.
- Staffing numbers – 753 engineering and management; 240 construction and craft.
- Capability – Will process at least 34 MT of plutonium into MOX fuel including up to 7.8 MT of surplus non-pit Pu-239 from Environmental Management.
- Schedule – Begin operations in September, 2016.

Pit Disassembly & Conversion Facility (PDCF)

Purpose: Disassemble and convert weapon grade plutonium pits to an oxide form suitable for feedstock in the MFFF.

Major Components:

- Process Building
  - Underground (bermed) (Category 1 SNM) building
  - ~100,000 ft2 with over 20 glovebox lines
  - Will handle Pu, HEU, classified parts
- Gloveboxes
  - Connected by overhead trolley systems – all transfers within containment.
  - Includes industrial lathes, direct metal oxidation furnaces, hydride reactors, robotic manipulators, oxide blending equipment, welding equipment.

PDCF Process Overview *(Chart)*

PDCF Current Status

- Design is approximately 65% complete and is continuing.
  - Design being conducted by WGI in Denver, CO.
- Developing the required documentation (integrated project schedule, cost estimate, risk analysis and supporting documents) to support an external independent project review that will allow NNSA to set the cost and schedule baseline for this project.
- Working with the U.S. Army Corps of Engineers to review and validate the construction estimate and schedule, and initiate pre-construction planning.
- Expect to begin construction in the 2011 timeframe.

Waste Solidification Building (WSB)

- **Purpose**: WSB takes the high activity and low activity liquid waste streams from the MFFF and PDCF, neutralizes and evaporates the waste, and solidifies the waste in drums for permanent disposal offsite.
- **Major Components**:
  - Process Building (~28,000 sq. ft.)
  - Two evaporator systems – high activity and low activity
  - Feed tanks, laboratory
  - Waste mixing / cementation system

WSB Current Status

- Design is approximately ~85% complete and should be completed in June, 2008.
- Project documentation will be submitted for review and approval of the project baseline (cost and schedule) and for start of construction this summer.
- Expect to initiate site preparation activities in late summer/early fall with start of construction in late 2008.
- Project will complete construction and begin operation in 2013.
  - Must be online to support MFFF cold startup testing.

Summary

- Three major projects all moving forward in an integrated approach.
  - MFFF construction under way
  - PDCF design progressing
  - WSB design nearing completion
- End result – plutonium being turned into electricity while making it no longer usable for nuclear weapons with no impact to the SRS cleanup missions.