Savannah, GA

May 19-20, 2014

SRS Citizens Advisory Board

Chair Update

Marolyn Parson, Ph.D.

Welcome Newest Member

- Pleased to welcome our newest CAB member:
  - Murlene Ennis, Allendale, SC
- The CAB membership stands at 24.

DOE-Environmental Management's Site Specific Advisory Board

- Harold Simon and I participate in the "national" Environmental Management Site Specific Advisory Board
- Our CAB is one of 8 local site boards of the "national" Environmental Management Site Specific Advisory Board formed under a charter dictated by the Federal Advisory Committee Act.
  - Site Specific Advisory Board was created to involve stakeholders more directly in Environmental Management cleanup decisions.

Environmental Management Site Specific Advisory Board's 8 Local Board Locations

1. Hanford Advisory Board (WA)
2. Idaho National Laboratory Site Citizens Advisory Board
3. Northern New Mexico Citizens Advisory Board (Los Alamos)
4. Nevada Site Specific Advisory Board
5. Oak Ridge Site Specific Advisory Board (TN)
6. Portsmouth Site Specific Advisory Board (OH)
7. Paducah Citizens Advisory Board (KY)
8. Savannah River Site Citizens Advisory Board

Environmental Management's Site Specific Advisory Board Meeting

- Most recent Board meeting was in Pasco, WA and was hosted by the Hanford Advisory Board.
- In addition to a 2-day Board Meeting, we had the opportunity to tour the Hanford Site. Harold Simon is going to share his impressions of that tour shortly.

Environmental Management's Site Specific Advisory Board—Highlights

- Gain an understanding of the challenges that other local boards face, their accomplishments, and .
- Opportunity to hear directly from DOE Environmental Management staff from Headquarters.
  - David Borak, Designated Federal Office in charge of the Site Specific Advisory Boards
  - Jack Craig, Acting Associate Principal Assistant Secretary (Budget Update)
  - Frank Marcinowski, Deputy Secretary for Waste Management (Overview of Waste Disposition and Waste Isolation Pilot Plant Update)

Environmental Management's Site Specific Advisory Board—Highlights, continued

- Presentation about Web-based GIS Tools for Assessing Hanford Site Environmental Data
  - Joint presentation from Pacific Northwest National Laboratory (Richland, WA) and DOE (Richland Operations Office.

- To view all of the presentations from this Board Meeting, go to http://energy.gov/em/downloads/chairs-meeting-april-2014.

DOE-Environmental Management's Site Specific Advisory Board Recommendations

- Recommendation 2014-01: Funding for Clean-up
  - Response from DOE not received.
- Recommendation 2014-02: Graphic Representation of Waste Disposition Path
  - Response received from DOE on April 24, 2014
    - Dave Huizenga, Acting Assistant Secretary for Environmental Management.

DOE-Environmental Management's Site Specific Advisory Board Recommendations

- Two new recommendations were written as a result of recent meeting in Pasco, WA.
  1. Budget request for FY 2015 request is insufficient to meet the cleanup obligations facing the Environmental Management cleanup sites.
  2. Produce video clips and/or lengthier documentaries to make public aware of successful remediation efforts at DOE cleanup sites.
- Our charge is to vote "up" or "down" on these recommendations; we cannot modify content.

Now: Harold's presentation on our Hanford Site Tour…

EM SSAB Hanford Site Tour
Tuesday, April 22, 2014

Presented by:
Harold Simon, Vice Chair
Savannah River Site Citizens Advisory Board
May 20, 2014

Background On C-Farm Waste Retrievals

- Over 40 years Hanford Site produced plutonium critical to the nation's defense during World War II and throughout the Cold War.
- This effort resulted in the production of **56 million gallons of radioactive and chemical wastes**.
- This wastes consists of sludge, salts, liquids and various combinations of chemical properties that are currently stored in **177 underground tanks**.

Background On C-Farm Waste Retrievals (con't).

- Much of the waste is stored in **149 aging single-shell tanks, first constructed in 1943-1964.**
- Due to the age of these tanks **approximately 16 were identified to be leaking**.
- DOE has minimized the risk of waste leaking from the 149 single-shell tanks by removing pumpable liquids and transferring those liquids to the newer double-shell tanks.

Background On C-Farm Waste Retrievals (con't)

- The rest of the waste is stored in 28 new double-shell tanks constructed 1968-1986.
- To date, DOE has retrieved solid waste from 11 of the single-shell tanks and work continues on retrieving waste from 6 additional tanks.
- The Waste Treatment Plant (WTP) has been funded. The projected completed date is 2020. However, redesign and modifications could delay the startup date and increase the budget.

C Tank Farms

Hanford Waste Treatment Plant (WTP) Looking Forward.

- DOE is working toward the ultimate solution of treating and immobilizing the tank waste for permanent disposition **(pending completion of a permanent deep geological repository).**

- The WTP is currently under construction. It is a critical component for processing and disposing the waste at Hanford.

Waste Treatment & Immobilization Plant Project

Hanford Waste Treatment Plant Looking Forward (con't).

- The WTP consists of the following 4 facilities:

  1. Pretreatment Facility(PT): This facility is the first step in the process of vitrifying Hanford's tank waste.

  - Waste will be pumped from the C-Tank Farm via underground pipes to the PT facility's interior waste feed receipt vessels for the first phase of the pretreatment process.

Hanford Waste Treatment Plant Looking Forward (con't).

- The waste will be divided into high-level slurry and low-activity liquid.

- The high-level slurry will be sent to the HLW facility, and the Low-Activity liquids (LAW) will be sent to the LAW facility for further processing.

Hanford Waste Treatment Plant Looking Forward (con't).

2. High-Level Waste Facility (HLW): The HLW will be mixed with glass-forming materials into in two 90-ton melters and heated to 2,100 degrees Fahrenheit.

- The mixture will be poured into stainless steel canisters that are approximately 2 feet in diameter, 14.5 feet tall, and will weigh more than 4 tons.

- These canisters will be temporarily stored in Hanford's 200 Area pending shipment to a federal repository for permanent disposal.

Hanford Waste Treatment Plant Looking Forward (con't).

3. Low-Activity Waste Facility: In this facility concentrated LAW will be mixed with silica and other glass-forming materials.

- The mixture will be fed into the LAW's two melters and heated to 2,100 degrees Fahrenheit. The 300-ton melters are approximately 20 feet by 30 feet and 16 feet high.

- The glass mixture will be poured into stainless steel containers. The containers will be stored on the Hanford Site in permitted lined trenches and covered with soil.

Hanford Waste Treatment Plant Looking Forward (con't).

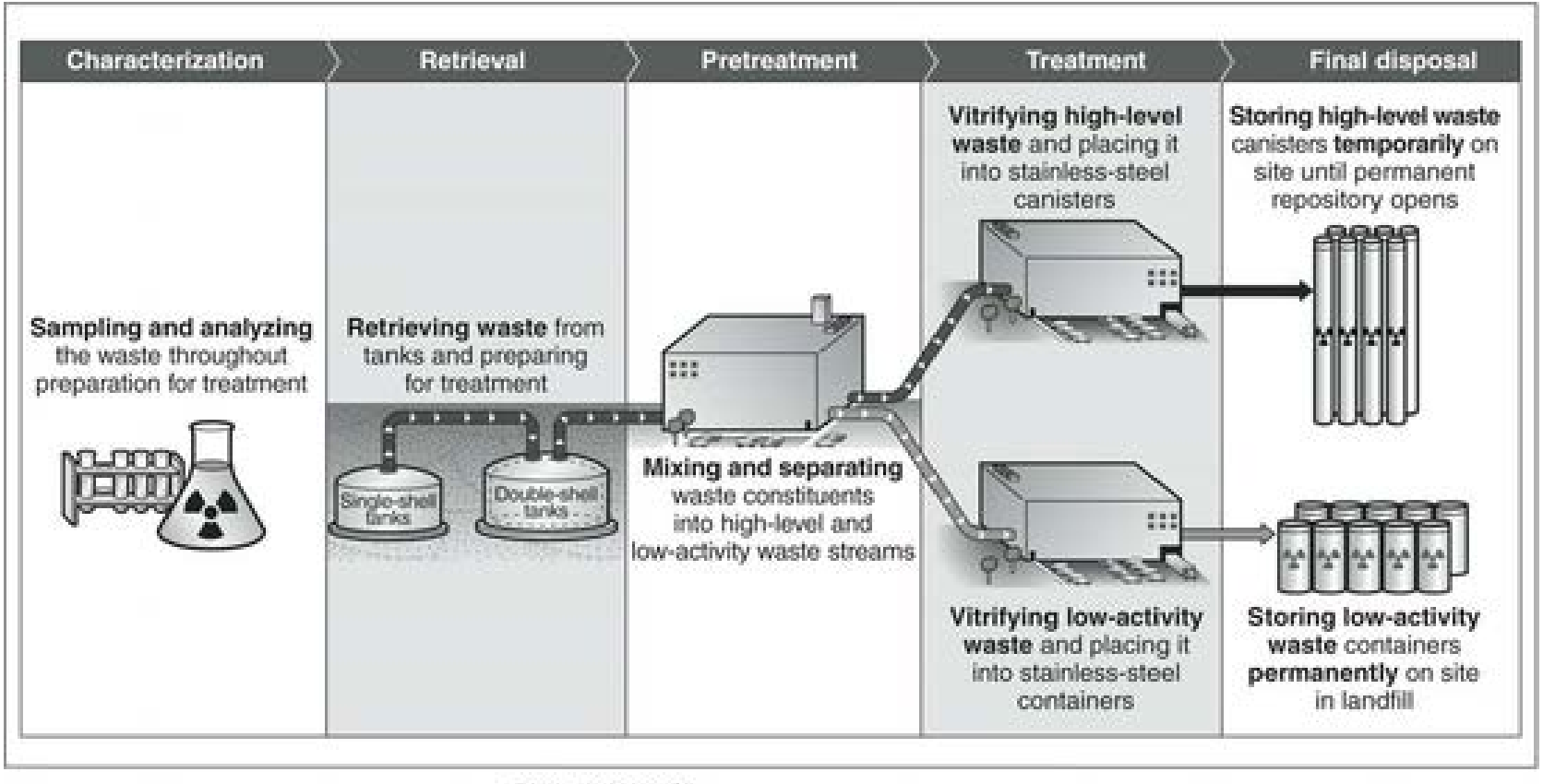
4. Analytical Laboratory Facility: The Lab's key function is to ensure all glass produced by the LAW facility, and HLW Vitrification facilities meet all regulatory requirements and standards.

- Samples will be used initially to confirm the correct glass-former "recipe" that will produce a consistent glass form.
- Samples will also be taken throughout the vitrification process to ensure a high-quality glass product and good process controls.

Waste Sampling and Characterization Facility:

Waste Treatment Plant (WTP)

Hanford Site Waste Treatment Process Flow Chart



Sources: GAO and DOE

Historic B Reactor Tour

- One of the most historic buildings at Hanford is the B Reactor, code named 105-B during World War II.
- The B Reactor was the world's first, full-scale nuclear reactor and produced the plutonium used in the "Fat Man" bomb dropped over Nagasaki, Japan, August 1945.
- World War II ended five days after that bomb was deployed.

B Reactor Facility

Conclusion

- The WTP is funded and projected to be completed in 2020.
- However, redesign and modifications changes could delay the startup date and increase the budget.
- Click on the Hanford Tours Quick Link located on the website's welcome page (www.hanford.gov) to view more information on the B Reactor and the Hanford Site.