



U.S. DEPARTMENT OF  
**ENERGY**

## **Environmental Management Advisory Board**

### **Tank Waste Subcommittee**

**Ken Picha**

**Office of Environmental Management**

**December 5, 2011**



***EM*** *Environmental Management*

safety ♦ performance ♦ cleanup ♦ closure

[www.em.doe.gov](http://www.em.doe.gov)

# Background

- Tank Waste Subcommittee (TWS) originally chartered, in response to Secretary's request to perform a technical review of Waste Treatment and Immobilization Plant (WTP) in May 2010. Three tasks:
  - Verification of closure of WTP External Flowsheet Review Team (EFRT) issues.
  - WTP Technical Design Review
  - WTP potential improvements
- Report completed and briefed to DOE in September 2010
- Follow-on scope for TWS identified immediately after briefing to DOE and the finalization of Technical Expert Group work scope:
  - Modeling for life-cycle analysis
  - Assess candidate low-activity waste forms
  - Assess at-tank or in-tank candidate technologies for augmenting waste pretreatment capabilities
  - Evaluate various melter technologies
  - Evaluate waste delivery plans
  - Identify other tank waste vulnerabilities at SRS and Hanford



# Concurrent Activities

- Technical Expert Group (TEG) EM Tank Waste Strategy Review
  - Research and Development Plan
  - Technical Planning, Integration and Risk Management
  - Waste Retrieval and Tank Closure
  - Alternative Waste Treatment
  - Improved Vitrification Capacity and Increased Waste Loading
- Construction Project Reviews
  - Salt Waste Processing Facility (March 2011 and October 2011)
  - WTP (August 2011)
  - Specific set of Recommendations for each facility
- Technical reviews of at-tank technologies
  - External Technical Review of Small-Column Ion Exchange (Feb 2011)
  - Technology Readiness Assessment of SCIX (Completing)



# TWS Recommendations

- Overarching – 4
- Modeling for Life-Cycle Cost - 8 (2 with sub-recommendations)
- Candidate Low-Activity Waste Forms – 4
- At-Tank or In-Tank Candidate Technologies for Augmenting Planned Pretreatment Capabilities - 9 ( 1 with sub-recommendations)
- Melter Technologies – 3
- Reliability of Waste Delivery Plans – 6
- Related to Other Tank Waste Vulnerabilities – 3
- 2020 Vision, Early Startup of One LAW Melter at Hanford - 6



# Breakout of Recommendations

- EM-HQ
  - Primary responsibility – 11
  - Shared with SRS and/or ORP – 5
- Savannah River Site (SRS)
  - Primary responsibility – 7
  - Shared with EM-HQ and/or ORP – 9
- Hanford
  - Primary responsibility – 18
  - Shared with EM-HQ and/or SRS - 11



# Status of Initial TWS review of WTP

- WTP-related recommendations from first TWS
  - Recommendations related to follow-up to EFRT items
    - ✓ 10 recommendations that were broken into 24 discrete actions
    - ✓ ORP concurred with actions BNI were taking to address the recommendations
  - Remaining recommendations were primarily directed at DOE
    - ✓ These are being addressed in a number of initiatives including
      - ❖ 2020-Vision
      - ❖ Establishment of a new manager responsible for WTP commissioning and startup



# Status of TWS 2011 Recommendations

- EM-HQ, DOE-SR, ORP and their respective contractors are evaluating recommendations
- Majority of recommendations are being addressed in concert with ongoing activities, such as:
  - Enhancements to system plans and life-cycle models
  - Responses to Construction Project Review recommendations
  - Technology maturity plans that will evolve from TRAs, e.g., SCIX
  - Implementation plan to Defense Nuclear Facilities Safety Board recommendation on Large-Scale Integrated Testing for mixing in WTP
  - Evaluation of TEG recommendations

