U.S. DEPARTMENT OF ENERGY

Savannah River Site – Citizens Advisory Board
Waste Management Committee

Revised Status of Tank 48 Treatment Project
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Acronyms

CD	Critical Decision
FBSR	Fluidized Bed Steam Reforming
ITP	In-Tank Precipitation
SRS	Savannah River Site
SWPF	Salt Waste Processing Facility
TPB	Tetraphenylborate
WAO	Wet Air Oxidation

Agenda

- Background
- Project Status
- Technology Business Decision
- Path forward
- Conclusion

Background

- Tank 48 waste contains organic tetraphenylborate (TPB) compounds.
- TPB compounds originated from the operation of the In-Tank Precipitation (ITP) process which was shut down in 1998.
- These organic materials are incompatible with liquid waste treatment processes at SRS.
- Tank 48 remains isolated from and is unproductive for supporting tank farm operations.
- Tank 48 return to service is critical to the tank farm space management program.

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Project Status

- SR approved the project cost range in March 2008 at Critical Decision – 1 (CD-1).
  - Cost range established as $100 – 150M.
  - Fluidized Bed Steam Reforming (FBSR) Technology selected as preferred technology.
  - Wet Air Oxidation (WAO) maintained as backup technology.
- Vendor proposal for FBSR system received in March 2008.
  - Proposal cost outside approved project cost range.
  - Developed and implemented a cost recovery strategy.
- Proceeded on a dual technology maturation path.
- Business Decision completed early June 2009.

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Business Decision Purpose

- **Select the Tank 48 waste treatment technology which presents the least risk to successful project execution.**

Business Decision Approach

- Apply Systems Engineering processes to identify, define and assign weightings to a set of evaluation criteria.
- Mature the two competing technologies (FBSR and WAO) to a stage where the criteria can be applied.
- Assess the benefits and risks of each technology relative to each criterion and supporting data.
- Evaluate competing technologies within each criterion.
- Score technologies in accordance with criteria weightings.

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Business Decision Criteria

- **Cost**
  - Project Cost
  - Operating Cost
- **Schedule**
  - Project Schedule
  - Operating Schedule
- **Complexity**
  - Safety Basis Controls
  - System Robustness
    - Safety
    - Operations / Maintenance
- **Technical Maturity**
  - Proof of Technology Viability
  - Difficulty of Continued Advancement

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Business Decision Results

- Composite scoring favored FBSR over WAO in areas of Schedule, Complexity and Technical Maturity.

- Liquid Waste Contractor transmitted their Tank 48 Business Decision recommending selection of the FBSR technology for treatment of Tank 48 organic waste on June 2, 2009.

- Tank 48 Federal Project Director concurred with Liquid Waste Contractor Business Decision Recommendation on June 10, 2009.

Path Forward

- Document FBSR Phase II/III Test Results.
- Reconfirm CD-1 with Acquisition Executive.
- Award FBSR Subcontract by mid-August 2009.
- Begin Preliminary Design of FBSR Unit.
- Continue project execution to support SWPF operational needs.
- DOE Project Management process will be fully implemented.

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