



**NRC Staff Technical Evaluation Report
Related to the Waste Determination
for the F-Tank Farm Facility
Savannah River Site, South Carolina**

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Overview

- NRC's Role in DOE Waste Determinations
- Review Timeline
- Results and Recommendations:
F-Tank Farm
- Results and Recommendations:
Tanks 18 and 19



NRC's Role

- Defined by Section 3116 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005
- Secretary of Energy must consult with NRC in determining certain wastes associated with reprocessing are not high-level waste
- Typically, DOE provides NRC with a waste determination and associated performance assessment to facilitate consultation



NRC's Role (cont)

- NRC documents the results of its consultative review in a technical evaluation report
- Section 3116 requires NRC to monitor DOE disposal actions to assess compliance with performance objectives in 10 CFR Part 61, Subpart C upon a final determination by the Secretary of Energy



Review Timeline

- September 2010 – DOE issued a draft basis document for the F-Tank Farm
- December 2010 – NRC issued requests for additional information (RAIs)
- January to February 2011 – NRC and DOE participated in public technical exchanges to clarify RAIs and potential responses
- May and June 2011 – DOE responded to NRC RAIs
- June to July 2011 – NRC and DOE participated in a series of technical teleconferences to clarify RAI responses
- October 2011 – NRC issues a technical evaluation report for the F-Tank Farm



Results and Recommendations: F-Tank Farm

- NRC staff maintains a “neutral” position regarding DOE’s ability to meet Section 3116 criteria given early stages of tank cleaning and closure
- NRC provides several recommendations where additional support for modeling approaches or assumptions is needed, including the following:
 - DOE should conduct waste release experiments to support assumptions regarding the solubility of key radionuclides over time



Results and Recommendations: Tanks 18 and 19

- No concerns were identified with respect to Tank 19 closure
- NRC recommended DOE evaluate options for delaying closure of Tank 18, given its expected risk-significance based on:
 - Highest residual Pu-239 inventory
 - Tank type and location in Tank Farm
 - Uncertainty in barrier performance and release characteristics



Results and Recommendations: Tanks 18 and 19 (Cont'd)

- NRC also determined that insufficient information was provided regarding the practicality of additional highly radioactive radionuclide removal for Tank 18
- Short-term experiments on Pu solubility to support current assumptions could largely resolve issues with uncertainty in barrier performance and release characteristics

