



Office of River Protection
Hanford Site

Hanford Advisory Board
Tank Waste Committee
Health Safety and Environmental Protection
Committee
April 17, 2012



Office of River Protection



Waste Management Area C in 2001





Waste Management Area C in 2011





Pu Metal and Oxide Resolution

- Pu Oxide Resolution Team led by Walt Isom
- Preceded by mixing study at WTP showing that large, dense particles (>10 micron and > 8 g/cc) may not remain suspended in some WTP pretreatment vessels was the origin of concern
- 100kg of Pu sent to Tank Farms from PFP, REDOX, and PUREX of which 30 kg was dense Pu oxide or metal greater than 10 microns
- Eight tanks received quantities >750 g and eight with 400 or less



Pu Metal and Oxide Resolution

- Established two teams including the review of PFP and PUREX/REDOX
- Team made up of WRPS, WTP, PNNL, original authors from WTP report and contract personnel of retired staff from the three facilities
- Initiated review with the beginnings of each processes and mapped through out the life to understand changes and impacts
- Data was obtained from classified documents, logbooks, monthly and weekly reports, engineer memorandum, laboratory reports, and interviews with retirees
- Reviewed ASME NQA-1-2004 sections 400 and 500 for applicability



How Tank Farms Manages This

- Eight tanks received > 750 g of Plutonium oxide or metal from PUREX/PFP/REDOX (TX-105, -119, -118, 244-TX, SY-102, C-102, AN-101, and S-108)
- Eight additional tanks received < 400 g of Plutonium oxide or metal (A-105, BX-101, S-107, S-111, SX-114, B-101, TX-101, and C-104)
- These are managed via a Nuclear Safety process called a Documented Safety Analysis
- Criticality Safety Evaluation Reports are prepared to evaluate controls to be placed on these specific tanks when construction, sampling, retrieval, etc., are performed.