Office of River Protection Baseline Workshop

Break-out Presentation

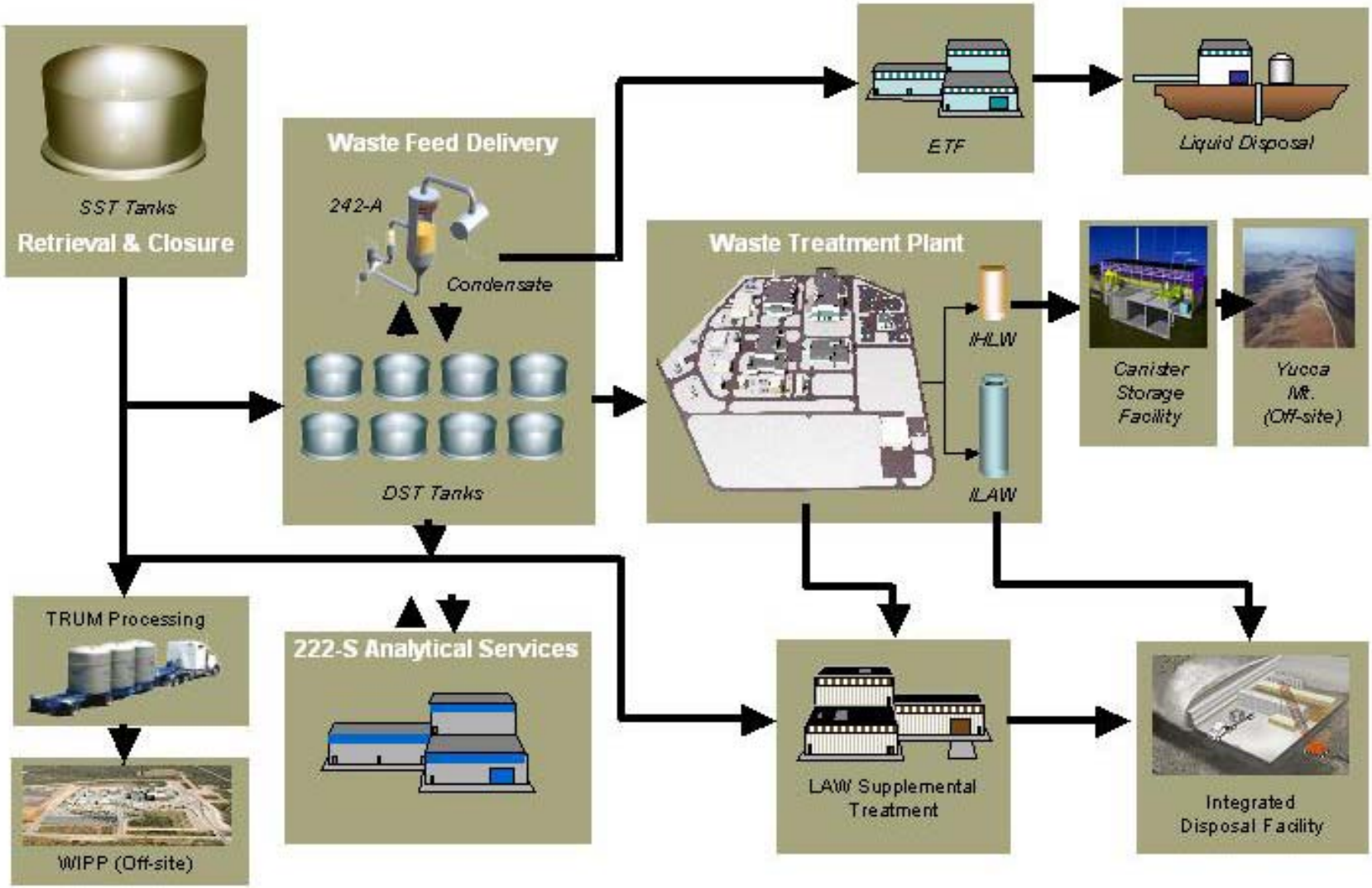
Howard Gnann

Senior Technical Advisor

March 2004

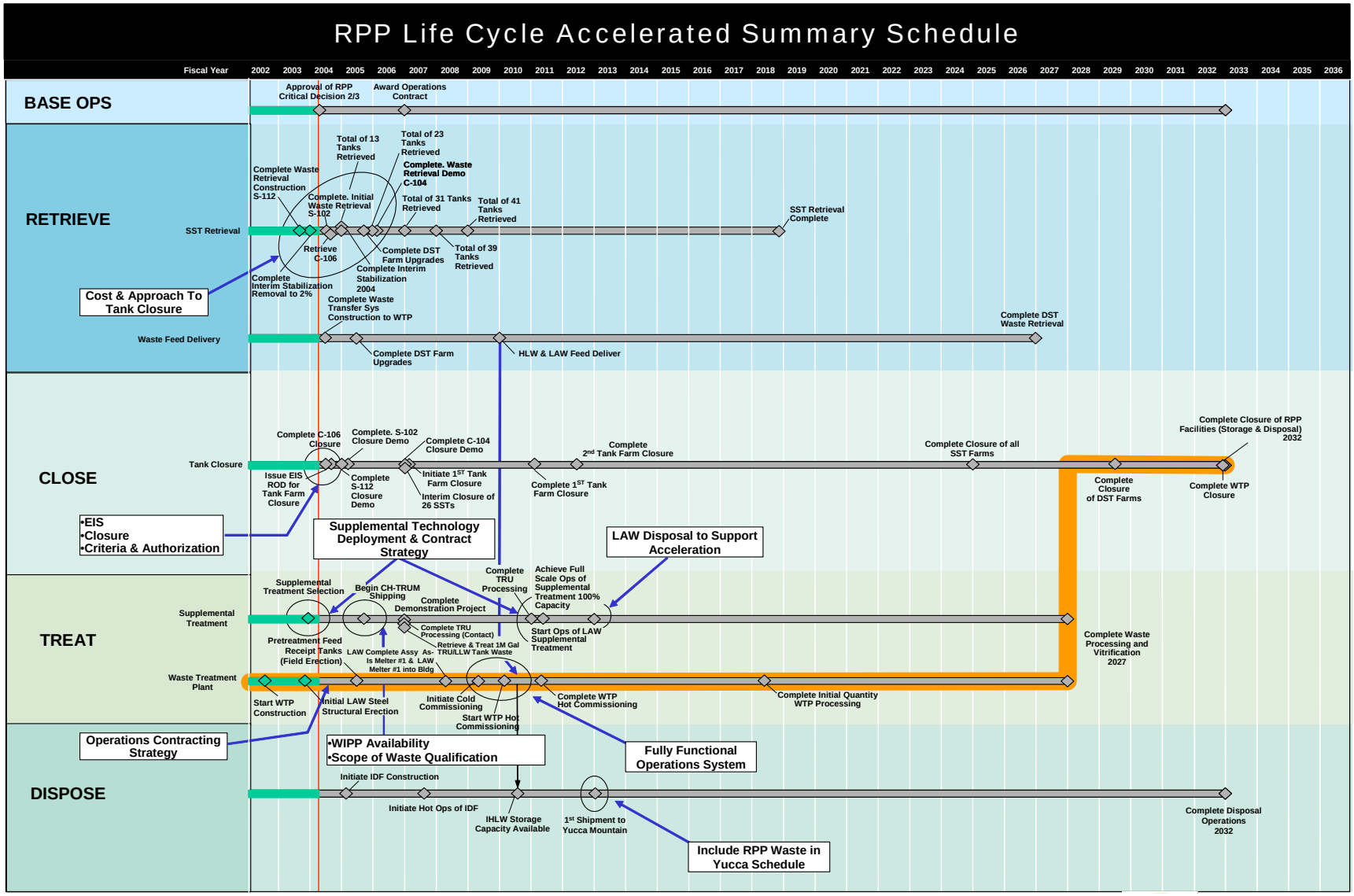
Office of River Protection

Project Scope



Office of River Protection

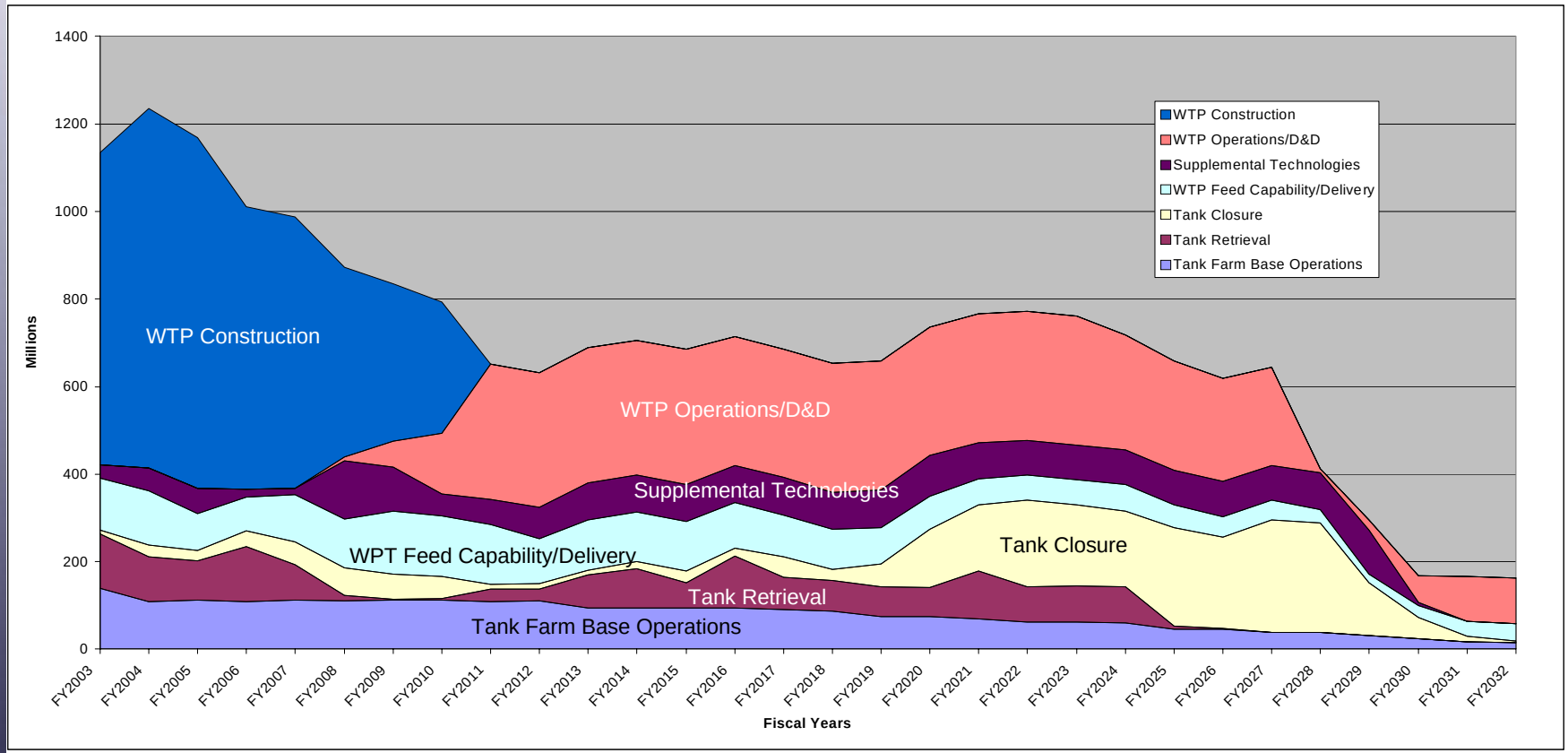
Demonstrated Results: Accelerating Cleanup



Office of River Protection

Integrated Life-Cycle Cost Profile

Tank Farm Project and WTP Projected Costs for Managing/Closing Hanford's Single/Double Shell Tanks
Total Cost - $28 billion (escalated dollars)



Office of River Protection

Major Accomplishments

- Reduced total single-shell tank liquid waste to 1%. This is a consent decree milestone and was completed 30 days ahead of schedule.
- Tank C-106 closure plan delivered to Ecology for review, public comment, and approval. Removed approximately 14,000 gallons of residuals, approximately 2,600 gallons remaining, below the 360 cubic feet criteria.
- Evaluated 22 supplemental Low-Activity Waste technologies to support mission, recommended the Bulk Vitrification technology for pilot test.
- Completed identification of Transuranic Tanks and have initiated deployment of Tank Retrieval Systems.
- Placed the first structural steel in the Low-Activity Waste Treatment Facility 3 months ahead of the Tri-Party Agreement commitment date.
- Completed construction of the foundations of all three major process facilities at the Waste Treatment Plant.
- Began construction on a 16,000 square foot simulator training facility.

Baseline Estimated Cost

($ in millions)

Title	FY-04	FY-05	FY-06
Tank Farm Base Operations WBS 5.07	$159.2	$163.3	$164.4
Tank Farm Retrieve and Close WBS 5.08	$202.6	$130.5	$141.7
Tank Farm Treat & Dispose Waste WBS 5.09	$ 55.8	$ 70.8	$ 46.4
Tank Farm Analytical/ Technical Services WBS 5.10	$ 23.5	$ 24.3	$ 24.7
Mission Support	$ 8.0	$ 6.0	$ 6.0
Total Tank Farm	$**449.1**	$**394.9**	$**383.2**
Waste Treatment Plant	$905.7	$895.0	$689.2
Total River Protection Project	$**1,354.8**	$**1,289.9**	$**1,072.4**

Office of River Protection

Tank Farm Project Baseline

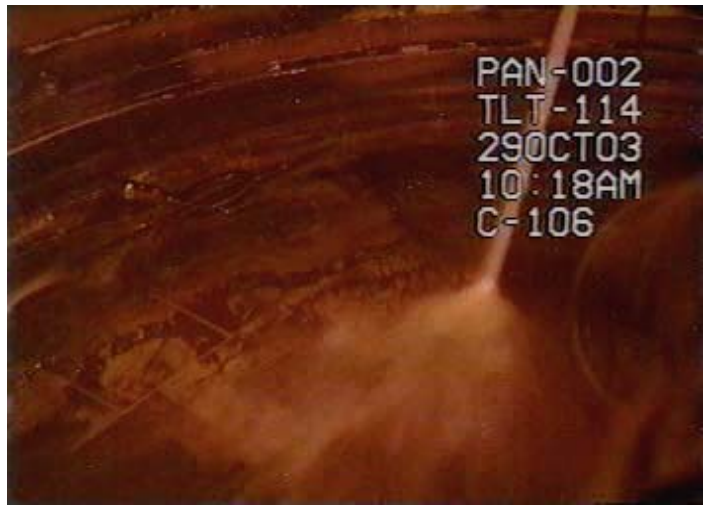
Life Cycle Cost (FY03 forward)	$23 billion Escalated
Completion Date	2032

- End State includes all wastes treated and dispositioned, Tank Farms and facilities closed, and site turned over for long-term surveillance and monitoring.

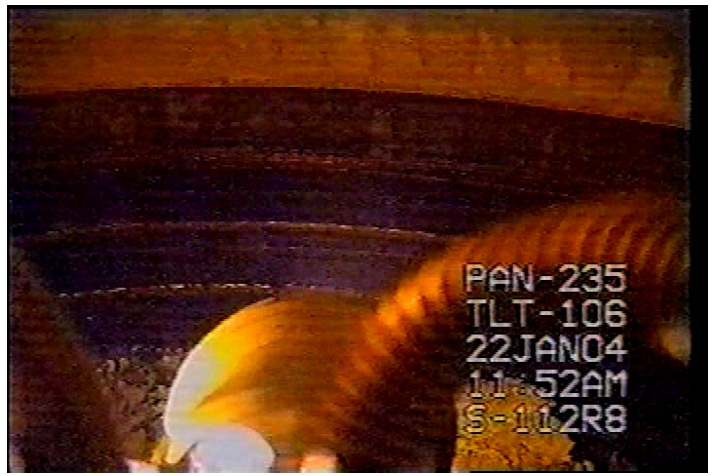
Office of River Protection

Tank Retrieval and Closure

- **Tank C-106**
  - Closure plan delivered to Ecology for review, public comment, and approval
  - Retrieval Completed
    - Removed ~ 14,000 gallons of residual
    - ~ 2600 gallons remaining; below the 360 cu. ft. criteria
  - Planned Interim Closure – (10/15/04)
- **Tank S-112**
  - Continue waste transfer to DSTs
    - ~900,000 gal of waste transferred to tank SY-101
    - >370,000 gal solids retrieved
  - 241-S-112 Planned Interim Closure – 3/05
- **C-200 Series (4 Tanks)**
  - Operational Acceptance Test Underway for Waste Retrieval System
  - Retrieval Startup Mid February
- **On track to complete 23 tank retrievals through FY-05**



C-106 First Single-Shell Tank Interim Closed



Tank S-112

Office of River Protection

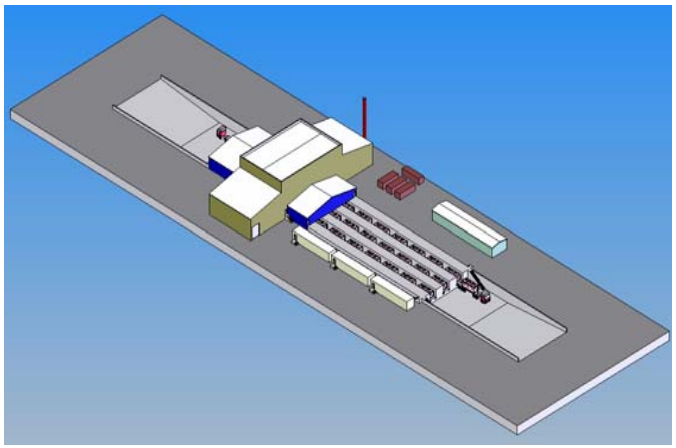
Deploy Innovative Waste Supplemental Treatment for LAW and TRU Tank Wastes to Complete the Mission

- **Evaluate Supplemental Treatment Technologies to treat ~60% of LAW**
  - Evaluated 22 supplemental LAW technologies to support mission completion by 2027
  - Recommend technology to ORP for further testing – Bulk Vitrification
  - Pilot test and produce glass in 2004
- **Accelerated Disposal of TRU Tank Waste**
  - Completed identification of TRU tanks
  - Initiated deployment of Tank Retrieval Systems
  - Packaging Vendor Selected
  - Initiated Permitting Process
  - Started characterization and certification process for WIPP qualification
  - Begin shipping to WIPP in 2005

Office of River Protection

Supplemental LAW Treatment
Bulk Vitrification

Artist Concept of Facility



Bulk Vitrification Test Facility

In-Container Melter with Off-gas Hood

Office of River Protection

Demonstrated Results: Accelerating Cleanup FY 2004 Planned Accomplishments

Radioactive Liquid Tank Waste Stabilization and Disposition (ORP-0014)

Project scope covers activities required to stabilize more than 50 million gallons of high-level radioactive waste stored underground in 177 tanks by 2032, including retrieval, treatment, disposal and closure of the facilities.

Tank Farm – Retrieve and Close – WBS 5.08

- Complete Interim Stabilization of last single-shell tank (U-108).
- Complete Phase 2 upgrades in AW, AY, AZ, and SY Tank Farms.
- Complete construction of AZ-101 Retrieval System.
- Retrieve up to 12 single-shell tanks.
- Demonstrate closure of at least one single-shell tank.
- Start construction of five single-shell tank retrieval systems.

Tank Farm – Treat and Dispose Waste – WBS 5.09

- Complete design, fabrication, and initial testing of Bulk Vitrification technology for actual tank waste demonstration.
- Complete design, fabrication, and initial testing of TRU/Low-Level Waste packaging facility.

Tank Farm – Mission Support

- Complete single-shell tank waste closure and supplemental treatment EIS.

Demonstrated Results: Accelerating Cleanup FY 2005 Planned Accomplishments

Radioactive Liquid Tank Waste Stabilization and Disposition (ORP-0014)

Tank Farm – Retrieve and Close – WBS 5.08

- Initiate waste retrieval from 11 single-shell tanks and complete
- Construction of 10 single-shell tank retrieval systems.
- Complete the Tank Farm Restoration and Safe Operations project, a major Tri-Party Agreement Milestone.
- Complete construction of the double-shell tank transfer system that will provide environmentally compliant upgrades to the waste transfer systems and support waste feed to the Waste Treatment Plant.
- Complete approximately five 242-A evaporator campaigns.
- Complete construction on double-shell tank AN-101 tank retrieval systems and start construction on AY-102.

Tank Farm – Treat and Dispose Waste – WBS 5.09

- Initiate site preparation for the integrated disposal facility for mixed low-level waste/low-level waste.

Office of River Protection

Demonstrated Results: Accelerating Cleanup FY 2005 Environmental Management High-Level Waste Proposal

$64 million of the High-Level Waste Proposal is for activities managed by the Office of River Protection.

Specific activities include:

Tank Farm – Treat and Dispose Waste – WBS 5.09

- Closure of 14 single-shell tanks
- Design and construction of the supplemental treatment process
- Start treatment and packaging of contact handled transuranic waste

Office of River Protection

Demonstrated Results: Accelerating Cleanup FY 2006 Planned Accomplishments

Tank Farm – Retrieve and Close – WBS 5.08

- Complete retrieval of waste from 8 Single-Shell Tanks (SSTs).
- Initiate retrieval systems construction on 11 additional SSTs.
- Complete interim closure of 10 SSTs.
- Initiate interim closure on 8 additional SSTs.
- Complete AZ-102 retrieval system construction, except for installation of mixer pumps. The retrieval system provides for the delivery of high-level waste from the tanks to the Waste Treatment Plant.
- Complete AY-102 higher risk construction tasks, except for installation of mixer pumps. The retrieval system provides for the delivery of high-level waste from the tanks to the Waste Treatment Plant.

Tank Farm – Treat and Dispose Waste – WBS 5.09

- Retrieve and package ~370,000 gallons of contact-handled Transuranic (TRU) waste from SSTs for shipment to the Waste Isolation Pilot Plant.
- Treat ~100,000 gallons of Low-Activity Waste from SSTs by bulk vitrification as a supplemental technology demonstration.
- Complete construction of the Integrated Disposal Facility which provides Immobilized Low-Activity Waste disposal capacity for the Waste Treatment Plant.

WTP Project Cost Topics

Project Cost (FY03 forward)	$5 billion Escalated
Completion Date	2011

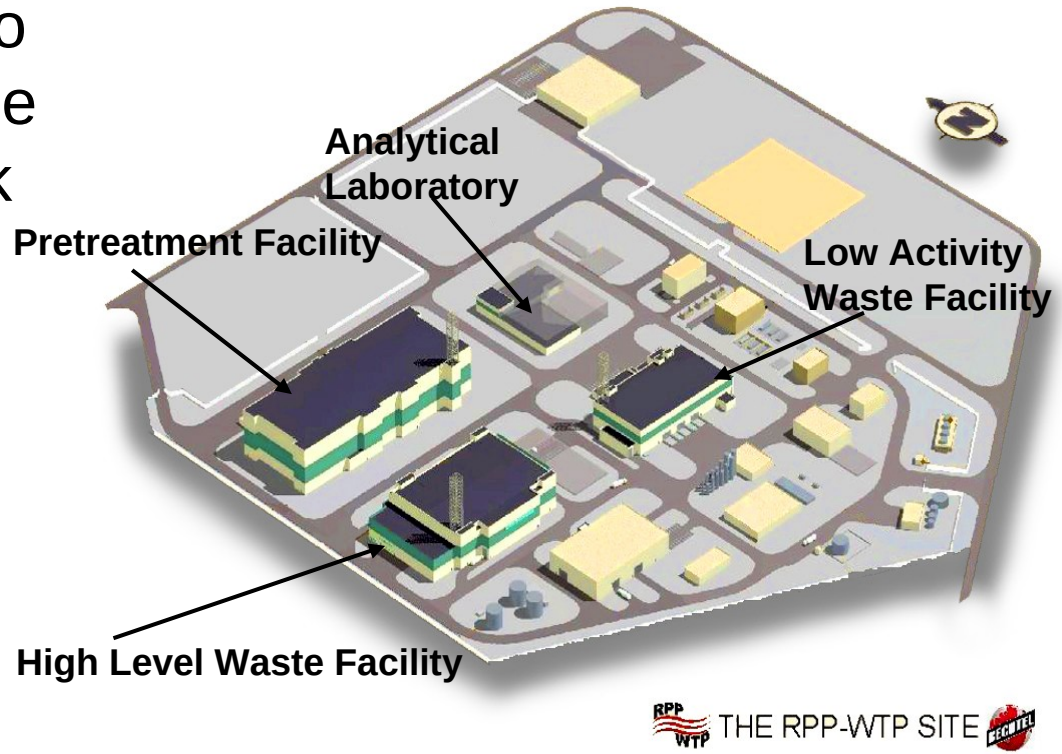
- Complete construction and commissioning of the Waste Treatment Plant.

Office of River Protection

The WTP Complex

The Waste Treatment Plant is composed of five facilities required to treat and immobilize the Hanford high level tank waste

- Pretreatment (PT) Facility
- Low-Activity Waste (LAW) Facility
- High-Level Waste (HLW) Facility
- Analytical Laboratory
- Balance of Facilities



Office of River Protection

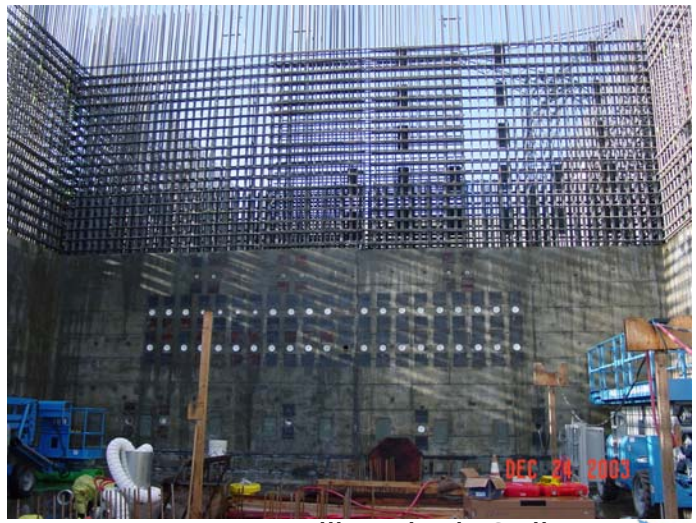
WTP Construction Site (December 2003)

Office of River Protection

WTP Construction Photos

Aerial view of the High-Level Waste Facility

Aerial view of the Low-Level Waste Facility



Pretreatment Facility Black Cell

Office of River Protection

Demonstrated Results: Accelerating Cleanup FY 2004 Planned Accomplishments

Major Construction – Waste Treatment Plant (ORP-0060)

- Waste Treatment Plant design and engineering will be approximately 75% complete
- Waste Treatment Plant construction will be approximately 30% complete
  - 45% of the concrete installed
  - 15% of the structural steel installed
  - 5% of the piping installed
- Commissioning activities will begin with many of the support facilities, including the chiller plant, water treatment plant, and simulator building
- Set the #1 Melter Submerged Bed Scrubber (SBS) Condensate Collection Vessel on its foundation ready for alignment in the High-Level Waste facility (completed 11/03)

Demonstrated Results: Accelerating Cleanup FY 2005 Planned Accomplishments

Major Construction – Waste Treatment Plant (ORP-0060)

- Waste Treatment Plant design and engineering will be approximately 90% complete
- Waste Treatment Plant construction will be approximately 45% complete
  - 70% of the concrete installed
  - 35% of the structural steel installed
  - 20% of the piping installed
- Initiate construction of the Analytical laboratory
- Set the four Pretreatment Low-Activity Waste Feed Receipt Tanks on their foundations in the Pretreatment Facility ready for alignment (10/04)
- Complete the pre-assembly of planning group 3 black cell pipe modules for the Pretreatment Facility (11/04)
- Set the four Cesium Ion Exchange process vessels on their foundations ready for alignment in the Pretreatment Facility (02/05)

Demonstrated Results: Accelerating Cleanup FY 2006 Planned Accomplishments

- Waste Treatment Plant design and engineering will be just over 90% complete
- Construction will be approximately 75% complete
  - 95% of concrete installed
  - 90% of structural steel installed
  - 65% of piping installed
  - 70% of HVAC installed
- Simulator Building Complete – May 2006
- Pre-Treatment concrete complete June 2006
- Low-Activity Waste Steel complete August 2006

Office of River Protection