



**WA State Dept of Ecology  
Nuclear Waste Program  
Hanford's Long-Term Cleanup Problems**

**Committee on Development and Implementation of a  
Cleanup Technology Roadmap**

**Fourth Meeting: October 31-November 2, 2007**

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# Hanford Site: mission and goals

- The mission of the Department of Ecology is to protect, preserve and enhance Washington's environment, and promote the wise management of our air, land, and water for the benefit of current and future generations.
- The mission of the Nuclear Waste Program is to ensure sound management of nuclear waste statewide and to promote the sound management and protection of the environment at, and adjacent to, the United States Department of Energy's (USDOE) Hanford Site.



# Recent Negotiations

## USDOE, Ecology, EPA

- Evaluate progress on Hanford Site cleanup
    - Focus on:
      - Waste Treatment Plant
      - Single-Shell Tank retrieval
      - Groundwater and vadose zone remediation
  - Commitment and plans to ensure projects completed
  - Create milestones as the corner stones to achieving the Hanford cleanup and protecting the environment
  - Engage this committee to look at priorities and recommend better and efficient technologies
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# Ecology: Hanford's long-term cleanup problems


- Speed up of cleanup is dependent on:
  - continuous, reliable, efficient Single-Shell Tank retrieval
  - building and operation of Waste Treatment Plant
  - Vadose zone and groundwater cleanup requirements
- Ecology agrees that technology selection needs to be based on “..technology gaps and their priorities for the cleanup program”
- Path forward takes new ideas and \$\$
- Goal is Hanford Site Closure



# Cleanup Priorities

## Waste Treatment Plant (WTP)

***Complete the design and construction of the WTP and treatment of all of Hanford's high-level and low-activity tank waste***

- Ensure WTP technical issues are resolved in a timely manner
  - WTP will be safely commissioned and operate efficiently
  - Sufficient treatment capability will be available to treat all of Hanford's tank waste
  - Decide on whether to proceed with Bulk Vitrification or default to a 2<sup>nd</sup> LAW vitrification facility
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# Cleanup Priorities Single-Shell Tanks (SST) Waste Retrieval

*Focused on aging tanks that present the greatest environmental risk*


*Completion of SST retrieval activities*

*Closure of Waste Management Areas (Tank Farms)*

1. Create enforceable milestones for retrievals
2. Conduct a SST chemistry control program
3. Support additional SST retrievals
4. Completing retrieval of all wastes from all SSTs

# Cleanup Priorities

## Groundwater, Vadose Zone and Soil

- Remediation:
    - Hexavalent chromium plumes near the Columbia River .
    - Strontium -90 plumes near the Columbia River.
    - Uranium plumes in north Richland
  - Containing all the existing plumes of technetium-99, uranium, and carbon tetrachloride in Hanford Central Plateau
  - Focus on deep vadose zone remediation in the Hanford Central Plateau with the target goal of deploying full-scale technologies
  - Continue non-tank farm soil remediation in Hanford Central Plateau and develop innovative technologies
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# Ecology Requests



- Need ideas to meet faster cleanup
- Focus on technology for best long-term risk reduction
- Advice on tank life and retrievals
  - how long it is safe to stay in tanks
- Options for continuing retrievals after double-shell tanks are full and the WTP is still coming online