Hanford Advisory Board

DOE-RL Update

Matt McCormick

DOE-RL Manager

September 5, 2013
Cleanup Strategies/Vision/Agreements

HANFORD SITE
Cleanup Completion Framework
January 2013

Tri-Party Agreement
U.S. Department of Energy
Washington State Department of Ecology
U.S. Environmental Protection Agency

Hanford Advisory Board DOE/RL Update

Safe and Effective Cleanup that Protects the Columbia River

- Reduces the Active Site Footprint of Cleanup to 75 Square Miles (586 to 75)
- Significantly Reduces Long-Term Mortgage Costs
- At Completion, Shifts Emphasis and Resources to Full Scale Cleanup of the Central Plateau (75 square miles)
- Reduces Costs by "Right Sizing" Hanford's Infrastructure via a Mission Support Contract
- Minimizes Injury to Natural Resources

Richard Operations Office

* Does not reflect all work

IU = Isolated Unit
ROD = Record of Decision
TSD = Treatment, Storage, Disposal

K Area
- K East Basin Demolished
- Interim Safe Storage of K East Reactor Complete
- K West Sludge Removed from the River Corridor
- Interim Safe Storage of K West Reactor Initiated
- All K Area Final ROD Remedial Actions Complete and TSD Units Closed with the exception of those associated with K West
- All K Area Groundwater Remedies Implemented
- 2300 Tons of Scrap Nuclear Fuel Removed
- 109 Facilities Demolished
- 2 Waste Sites Remediated
- ~361,000 Tons of Soil Removed

Central Plateau Cleanup
- All 200 West Carbon Tetrachloride, Uranium and Technetium 99 Groundwater Remedies Implemented
- Conduct Additional Cleanup as Funds Become Available

IU2 & IU6 Area
- Interim Safe Storage of F Reactor Complete
- All IU2 & IU6 Area Final ROD Remedial Actions Complete
- All IU2 & IU6 Area Final ROD Groundwater Remedial Actions Complete
- 1 Facility Demolished
- 50 Waste Sites Remediated
- ~962,000 tons of Soil Removed

Plutonium Finishing Plant Complex
- All Special Nuclear Material Shipped Off-site
- Slightly Irradiated Fuel Shipped to the Canister Storage Building for Safeguarding
- PFP Complex Reduced to Slab on Grade
- 18 Facilities Demolished

B & C Area
- Interim Safe Storage of C Reactor Complete
- B Reactor Designated as a Museum or Interim Safe Storage Complete
- All B & C Area Final ROD Remedial Actions Complete
- All B & C Area Groundwater Remedies Implemented
- 6 Facilities Demolished
- 40 Waste Sites Remediated
- ~381,000 Tons of Soil Removed

300 Area
- All 300 Area Final ROD Remedial Actions Complete and TSD Units Closed
- All 300 Area Groundwater Remedies Implemented
- 186 Facilities Demolished
- 95 Waste Sites Remediated
- ~923,000 Tons of Soil Removed
- Final Remediation of 618-10 & 618-11 Burial Grounds Complete

400 Area
- Fast Flux Test Facility in Surveillance and Maintenance

D & H Area
- Interim Safe Storage of D, DR, and H Reactors Complete
- All D & H Area Final ROD Remedial Actions Complete
- All D & H Area Groundwater Remedies Implemented
- 16 Facilities Demolished
- 56 Waste Sites Remediated
- ~1,700,000 Tons of Soil Removed

N Area
- Interim Safe Storage of N Reactor Complete
- All N Area Final ROD Remedial Actions Complete and TSD Units Closed
- All N Area Groundwater Remedies Implemented
- 108 Facilities Demolished
- 61 Waste Sites Remediated
- ~157,000 Tons of Soil Removed

September 2008
Safe and Effective Cleanup that Protects the Columbia River

- Reduces the Active Site Footprint of Cleanup to 75 Square Miles (586 to 75)
- Significantly Reduces Long-Term Mortgage Costs
- At Completion, Shifts Emphasis and Resources to Full Scale Cleanup of the Central Plateau (75 square miles)
- Reduces Costs by “Right Sizing” Hanford’s Infrastructure via a Mission Support Contract
- Minimizes Injury to Natural Resources

K Area
- K East Basin Demolished
- CHALLENGE: Interim Safe Storage of K East Reactor
- K West Sludge Removed from basin
- Interim Safe Storage of K West Reactor Initiated
- All K Area Final ROD Remedial Actions Complete and TSD Units Closed with the exception of those associated with K West
- All K Area Groundwater Remedies Implemented
- 2,300 Tons of Scrap Nuclear Fuel Removed
- 109 Facilities Demolished
- 2 Waste Sites Remediated
- ~381,000 Tons of Soil Removed
- Additional Scope: Extensive Chromium Contamination at the B/C Area (C-7), dug trench to groundwater to remove source

B & C Area
- Interim Safe Storage of C Reactor Complete
- B Reactor Designated as a Museum or Interim Safe Storage Complete
- All B & C Area Final ROD Remedial Actions Complete
- All B & C Area Groundwater Remedies Implemented
- 6 Facilities Demolished
- 40 Waste Sites Remediated
- ~381,000 Tons of Soil Removed
- Additional Scope: Discovery of additional waste sites and additional contamination from past transportation fuel spills

Plutonium Finishing Plant Complex
- All Special Nuclear Material Shipped Off-site
- Slightly Irradiated Fuel Shipped to the Canister Storage Building for Safe Guarding
- 10 Facilities Demolished
- CHALLENGE: PFP Complex Reduced to Slab on Grade
- Additional Scope: Additional plutonium found inside plant facilities and found adhered to piping, process equipment, exhaust ducts, and filters. (~10kg) The details of challenges include:
  - ~10 Kilograms of plutonium holdup remaining in process equipment, exhaust ducts and filters, in the Plutonium Reclamation Facility, piping, drain lines, etc.
  - Residual acids and hazardous chemicals in pipes and tanks

D & H Area
- Interim Safe Storage of D, DR, and H Reactors Complete
- All D & H Area Final ROD Remedial Actions Complete
- All D & H Area Groundwater Remedies Implemented
- 16 Facilities Demolished
- 56 Waste Sites Remediated
- ~1,700,000 Tons of Soil Removed
- Additional Scope: More extensive chromium contamination and discovery of additional waste sites

IU & IU6 Area
- Interim Safe Storage of F Reactor Complete
- All IU2 & IU6 Area Final ROD Remedial Actions Complete
- All IU2 & IU6 Area Groundwater Remedies Implemented
- 1 Facility Demolished
- 50 Waste Sites Remediated
- ~962,000 tons of Soil Removed

Central Plateau Cleanup
- All 200 West Carbon Tetrachloride, Uranium and Technetium 99 Groundwater Remedies Implemented
- Conduct Additional Cleanup as Funds Become Available

400 Area
- Fast Flux Test Facility in Surveillance and Maintenance

300 Area
- All 300 Area Final ROD Remedial Actions Complete and TSD Units Closed
- All 300 Area Groundwater Remedies Implemented
- CHALLENGE: 186 Facilities Demolished
- 95 Waste Sites Remediated
- ~923,000 tons of Soil Removed
- CHALLENGE: Final Remediation of 618-10 & 618-11 Burial Grounds
- Additional Scope: Discovery of high-level radioactive contamination below 324 Building

IU = Isolated Unit
ROD = Record of Decision
TSD = Treatment, Storage, Disposal
# Making the 2015 Vision a Reality
## Fiscal Year 2013 Key Performance Goals

## HANFORD SITE
- **Reduce Hanford’s active cleanup footprint by a total of 75 percent**
- **Complete all Tri-Party Agreement milestones on or ahead of schedule**
- **Ensure there are no major occurrences that negatively impact the public and/or environment**
- **Ensure the annual average Occupational Safety and Health Administration (OSHA) Total Recordable Case Rate is less than 1.1 and the annual average Days Away, Restricted, or Transferred (DART) rate is less than 0.6**
- **Ensure there are no significant accidents, injuries or exposures**
- **Complete the Site Wide Safety Standards project with 15 programs operational, including completion of all of the Phase I and II Chronic Beryllium Disease Prevention Program actions**
- **Develop and implement a site wide Employee Concerns process and enhance the Differing of Professional Opinion process**
- **Based on employee input, continue to improve the organizational and safety culture**
- **Complete all viable Phase I activities and initiate Phase II of Hanford’s Small Business Plan**
- **Support DOE achieving an unqualified opinion on the Financial Statement Audit**
- **Complete and prepare for the finalization of the Hanford’s Retirement of Record**
- **Complete decommissioning of the 100-A Area and transfer to Long Term Stewardship**
- **Complete cleanup of Segment 5 (excluding the G18-10 & G18-11 Burial Grounds) and transfer to Long Term Stewardship**
- **Complete removal of the 340 Vault and Tanks**
- **Complete removal of 308A Training, Research, Isotopes, General Atomics (TRIGA) Reactor**
- **Complete demolition of the 382 facility and tanks**
- **Begin demolition of the 326, 3730 and 3760 facilities**
- **Complete demolition of the 329 Chemical Sciences Laboratory**
- **Remove the Plutonium Production Test Reactor and complete above grade demolition of the 309 Facility**
- **Complete cleanup of the 618-10 Burial Ground Trenches**
- **Downgrade the Cold Vacuum Drying Facility (CVDF) from a Category 2 Nuclear Facility to a Radiological Facility**
- **Complete the Sludge-Transfer Annex outer shell and finalize the design of the Sludge Retrieval and Transfer System**
- **Complete all 100-K Area Phase 1 interim cleanup actions**
- **Complete cleanup of chromium contamination at 100-C-71 and 100-D-100 waste sites**
- **Begin Tier 3 cleanup of the 100-D-30 and 100-D-104 waste sites**

## CENTRAL PLATEAU
- **Dispose of 4.4-1.1 million tons of waste at ERDF**
- **Remove 16-15 Plutonium Finishing Plant (PP) glove boxes**
- **Dispose of 50-20 PP Pencil Tank Units**
- **Treat 7 million gallons of liquid waste at the Effluent Treatment Facility**
- **Complete 80 percent of the Fiscal Year 2013 Work Plan Performance Metrics by the approved due dates**

## GROUNDWATER PROTECTION
- **Increase West Pump and Treatment flow rate to 1,000-1,500 gallons per minute**
- **Remediate 1.4 billion gallons of contaminated groundwater**
- **Treat groundwater to remove 20,000-35,000 kilograms of nitrate**
- **Treat groundwater to remove 220 kilograms of chromium**
- **Treat groundwater to remove 1,600 kilograms of carbon tetrachloride**
- **Submit N Area CERCLA Remedial Investigation/Feasibility Study (RI/FS) by June 2013**
- **Submit D/H Area CERCLA RI/FS by December 2012**
- **Submit F Area CERCLA RI/FS by December 2012**
- **Submit River Corridor Orchard Land CERCLA RI/FS Work Plan**
- **Submit Central Plateau 300 West Inner Area CERCLA RI/FS Work Plan***DELETED***
- **Obtain CERCLA Record of Decision for the 200 West Area (UP-1) groundwaters**
- **Obtain CERCLA Record of Decision for the 300 Area Submit 300 Area CERCLA RI/FS/PP, Rev.0***DELETED***
- **Obtain CERCLA Record of Decision for the 300-F Area***DELETED***

## RIVER CORRIDOR
- **Complete the recombination of the River Corridor Closure Project Capital Asset Project (RL-0041.C1) and Operations Activity (RL-0041.01) into one Capital Asset Project (RL-0041.C1)**
- **Complete cleanup of the 100-F Area and transfer to Long Term Stewardship**
- **Complete cleanup of Segment 5 (excluding the G18-10 & G18-11 Burial Grounds) and transfer to Long Term Stewardship**
- **Complete removal of the 340 Vault and Tanks**
- **Complete removal of 308A Training, Research, Isotopes, General Atomics (TRIGA) Reactor**
- **Complete demolition of the 382 facility and tanks**
- **Begin demolition of the 326, 3730 and 3760 facilities**
- **Complete demolition of the 329 Chemical Sciences Laboratory**
- **Remove the Plutonium Production Test Reactor and complete above grade demolition of the 309 Facility**
- **Complete cleanup of the 618-10 Burial Ground Trenches**
- **Downgrade the Cold Vacuum Drying Facility (CVDF) from a Category 2 Nuclear Facility to a Radiological Facility**
- **Complete the Sludge-Transfer Annex outer shell and finalize the design of the Sludge Retrieval and Transfer System**
- **Complete all 100-K Area Phase I interim cleanup actions**
- **Complete cleanup of chromium contamination at 100-C-71 and 100-D-100 waste sites**
- **Begin Tier 3 cleanup of the 100-D-30 and 100-D-104 waste sites**

## RIGHTSIDE INFRASTRUCTURE
- **Complete draft NEPA document for the potential land conveyance**
- **Complete draft Environmental Impact Statement (EIS) for the Natural Gas Pipeline**
- **Complete draft Environmental Assessment (EA) for Sand and Gravel Borrow Material**
- **Initiate NEPA review for Hanford locations identified to supply borrow material to support construction of evaporative transpiration barriers**
- **Complete the 200 Area raw water system upgrades**
- **Initiate implementation of the Fire Station Consolidation Plan**
- **Transfer the 712 Building out of DOE custody**
- **Develop and initiate a plan to eliminate 400 Area sewage discharges to Energy Northwest**
- **Develop and implement improvement actions, per approved schedules, from Safeguards and Security reviews/SL-12 lessons learned**
- **Perform a study to optimize site access barricades**
- **Develop, communicate with Hanford Stakeholders, and initiate implementation of the Hanford Post-Cleanup Vision**
- **Develop the Post-2015 Cleanup Priorities list in concert with RL employees, regulators and stakeholders**
FY 2013 HAB Advice Overview
Richland Operations Office

Advice responses pertaining to RL:

- **Advice # 261: 2013 State of the Site Meetings**
  - September 07, 2012 – HAB is involved with planning for the four 2013 State of the Site meetings.

- **Advice #264: Tri-Party Agreement Change Package**
  - February 08, 2013 – Accepted advice via Response to Comment associated with public comment period.

- **Advice #266: Fiscal Year 2014/2015 Budget Priorities**
  - June 07, 2013 – We appreciate the HAB’s input to the budget process and its support for agency funding needs.

- **Advice # 267: 2014 Lifecycle Scope, Schedule and Cost Report**
  - June 07, 2013 – DOE appreciates and agrees with the board’s input on using this tool as a continual reminder of the site’s need for compliant funding.

- **Advice # 268: 100-F Area Remedial Investigation/Feasibility Study and Proposed Plan**
  - June 07, 2013 – DOE benefitted from productive discussions and appreciated the chance to clarify its decision-making rationale.

- **Advice #269: Hanford Long-Term Stewardship**
  - June 07, 2013 – HAB discussions helped further explain benefits of RL’s plans and provided opportunity for RL to hear concerns.

- **Advice # 270: 300 Area RI/FS and Proposed Plan (Rev.0)**
  - June 07, 2013 – The TPA agencies are considering HAB advice as part of the formal public comment period.

- **Letter on Diversity**
Focus on Safety

• High Safety Performance through
  – A mature federal oversight program coupled with contractor safety and work execution
  – Special emphasis on radiological and industrial safety due to the unique cleanup hazards at the Hanford Site
• Safety Progress
  – Nearing completion on improvements to beryllium protection program
  – 15 site-wide safety standards established across multiple contractors
  – Conducted site-wide safety survey and making improvements
• Employee Concerns Program Improvements
Hanford Site

RIVER CORRIDOR
River Corridor Cleanup Work

- **Treat, transport and dispose of waste debris at Environmental Restoration Disposal Facility (14.8 million tons disposed to date)**
- **Deactivate, decontaminate, decommission and demolish facilities (397 of 522 to date)**
- **Clean up and close burial grounds and waste sites (798 of 1,012 to date)**
- **Operate 5 groundwater treatment facilities (pump and treat)**
River Corridor Cleanup Work

Place Reactors in Interim Safe Storage

- 6 completed to date
- 1 underway (K East Reactor)
- 1 remaining (K West Reactor)
- B Reactor: preserved as a National Historic Landmark
River Corridor Groundwater

Iron workers are removing a geotube used for treating contaminated groundwater.

A pump and treat operator monitoring groundwater treatment.
River Corridor: Progress in 300 Area

3760 Building demolition
River Corridor: 324 Building
River Corridor: 618-10 Burial Ground
River Corridor: 340 Vault
Central Plateau
Central Plateau Cleanup
Plutonium Finishing Plant
Central Plateau Cleanup
Plutonium Finishing Plant

Demolished plutonium vaults – 55 of 81 Plutonium Finishing Plant facilities demolished to date

Removed 201 of 238 glove boxes to date from highest-hazard facility at Hanford, the Plutonium Finishing Plant
Central Plateau Cleanup
Hanford Groundwater Cleanup

Hanford Site

Groundwater Remediation

- Address 12 plumes with 10 major contaminants, encompassing approx. 60 square miles
- Operate treatment facilities to remove contamination
- ~8 billion gallons treated, 60 tons of contaminants removed, to date

200 West Pump and Treat System
Central Plateau Cleanup
Central Plateau Inner Area: ERDF
Other News Across the Site

Secretary Moniz Tours Hanford

Oregon Senator Ron Wyden visits B Reactor
Outreach

Hanford’s Speakers Bureau

Hanford Site Tours
Go to www.hanford.gov to learn about:

- The latest news on Hanford cleanup
- Hanford newsletters
- Hanford social media sites
- Public events
- New informational tool: “GovDelivery”