



U.S. DEPARTMENT OF

ENERGY



2009 Congressional Nuclear Cleanup Caucus

Hanford Cleanup Progress

May 21, 2009

Dave Brockman, Manager
Richland Operations Office

Chuck Spencer
President, Washington
Closure Hanford



John G. Lehw, III
President and CEO
CH2M HILL Plateau
Remediation Company



Pete Knollmeyer
Chief Operating Officer
Fluor Hanford
Fluor Hanford



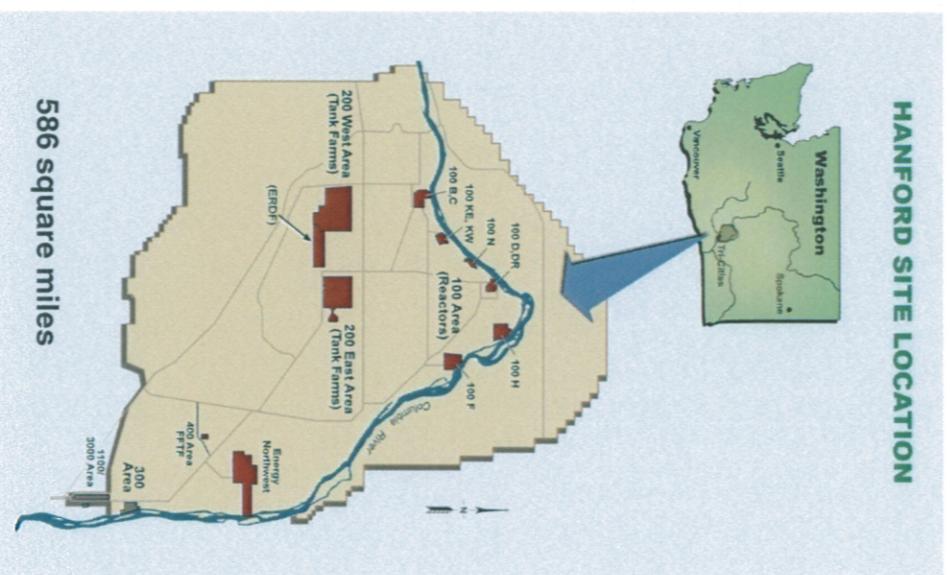
EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

www.em.doe.gov

The Hanford Site

- 586 square miles (half the size of Rhode Island)
- 50 miles of the Columbia River runs through Hanford
- Constructed in WWII as part of the Manhattan Project
- Mission: Produce plutonium
- Produced approx. two-thirds of nation's supply of plutonium, 1944-1989
- Peak employment was 50,000 during construction
- Current employment: 10,000



safety ❖ performance ❖ cleanup ❖ closure

www.em.doe.gov

Hanford - 20 Years of Cleanup Progress

- We have made progress in reducing environmental risk and have eliminated some of the most urgent risks
 - 2,300 tons of corroding spent nuclear fuel dried, moved to safe storage in the Central Plateau
 - 20 tons of unstable plutonium in various forms stabilized, packaged and being shipped off site
 - Treating 40 million gallons of contaminated groundwater each month
 - 5 of 9 reactors placed in interim safe storage
 - 45,000 out of 70,000 drums worth of solid, radioactive waste (transuranic) retrieved
 - Demolished 180 out of 496 facilities along the Columbia River
 - Cleaned up 435 of approx. 800 waste sites along the Columbia River
 - Disposed of 8.2 million tons of waste in Environmental Restoration Disposal Facility



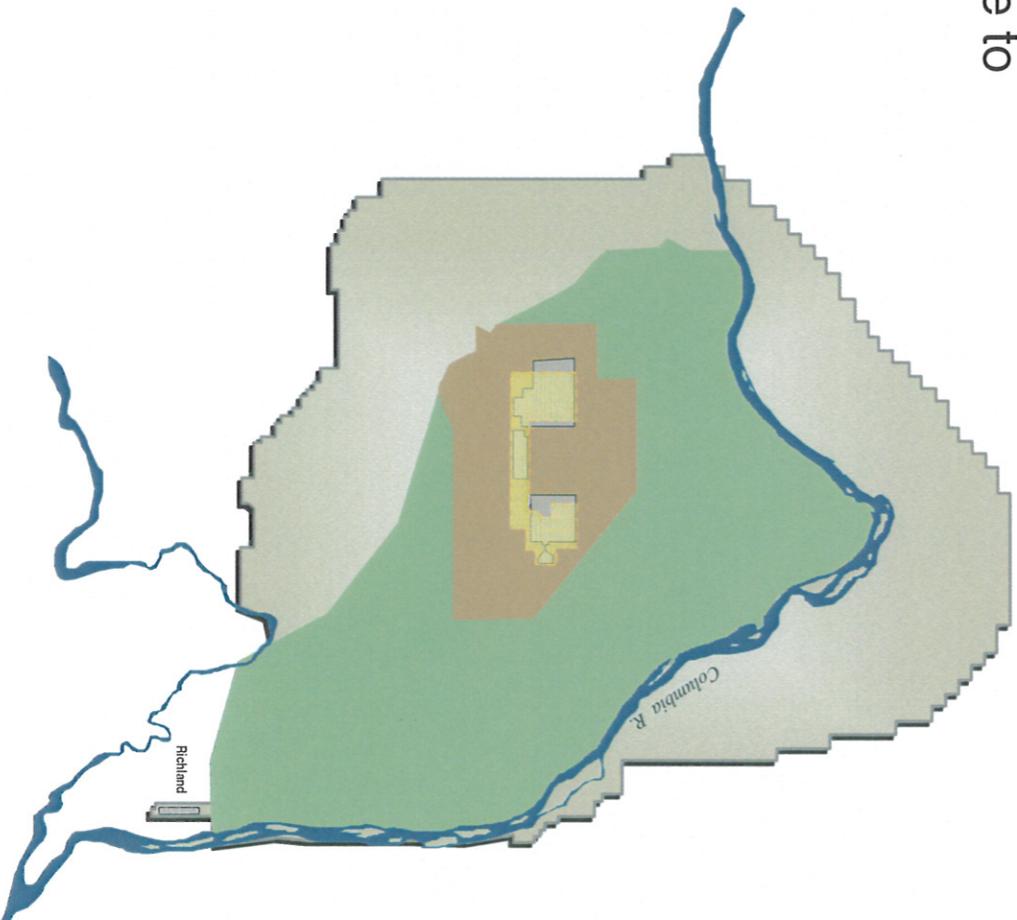
EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

www.em.doe.gov

Strategy for Cleanup – Shrinking the Footprint

- Go from 586 square miles site to 10 square miles
- Work in four areas
 - River Corridor (~210 sq. miles)
 - Central Plateau, Outer Zone (~65 sq. miles)
 - Central Plateau, Inner Zone (~10 sq. miles)
 - Hanford Reach National Monument (~300 sq. miles, including Arid Lands Ecology Reserve)

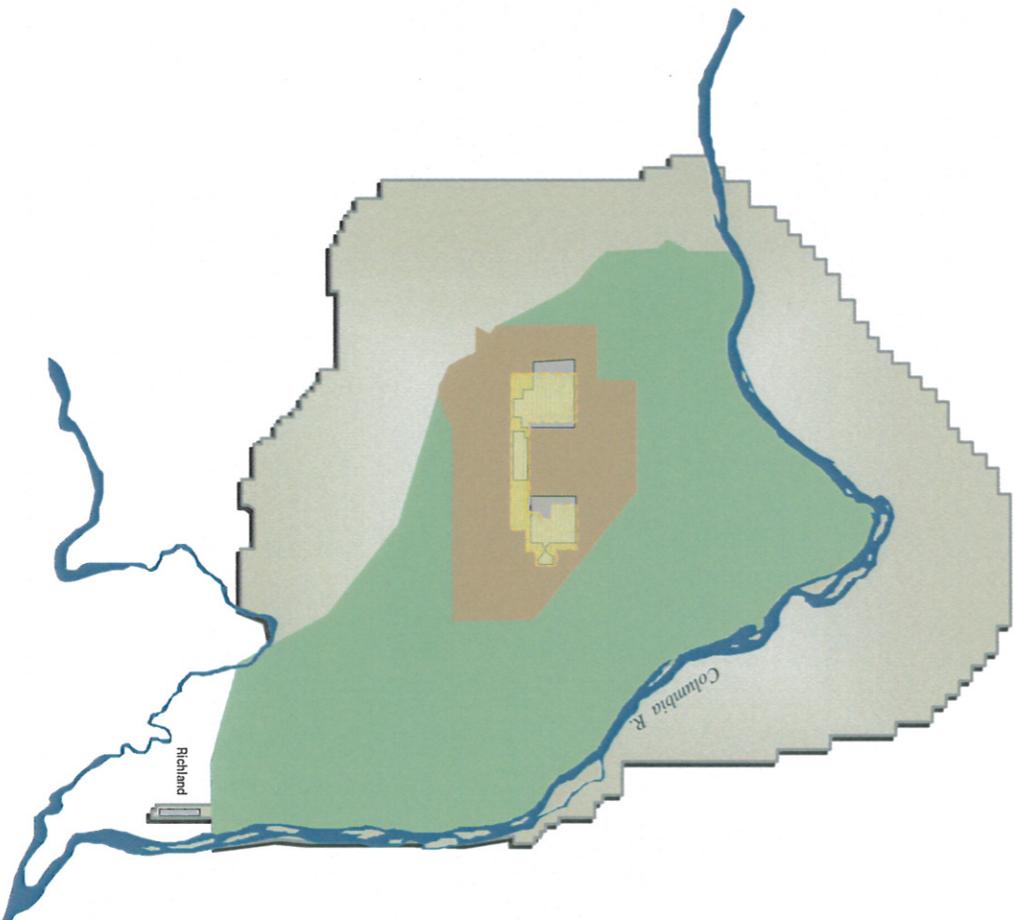


EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

www.em.doe.gov

Strategy for Cleanup – Priorities

- Protect the Columbia River
- Contain/treat contaminated groundwater
- Clean out and demolish the high-hazard Plutonium Finishing Plant
- Retrieve buried, solid radioactive waste (transuranic waste)

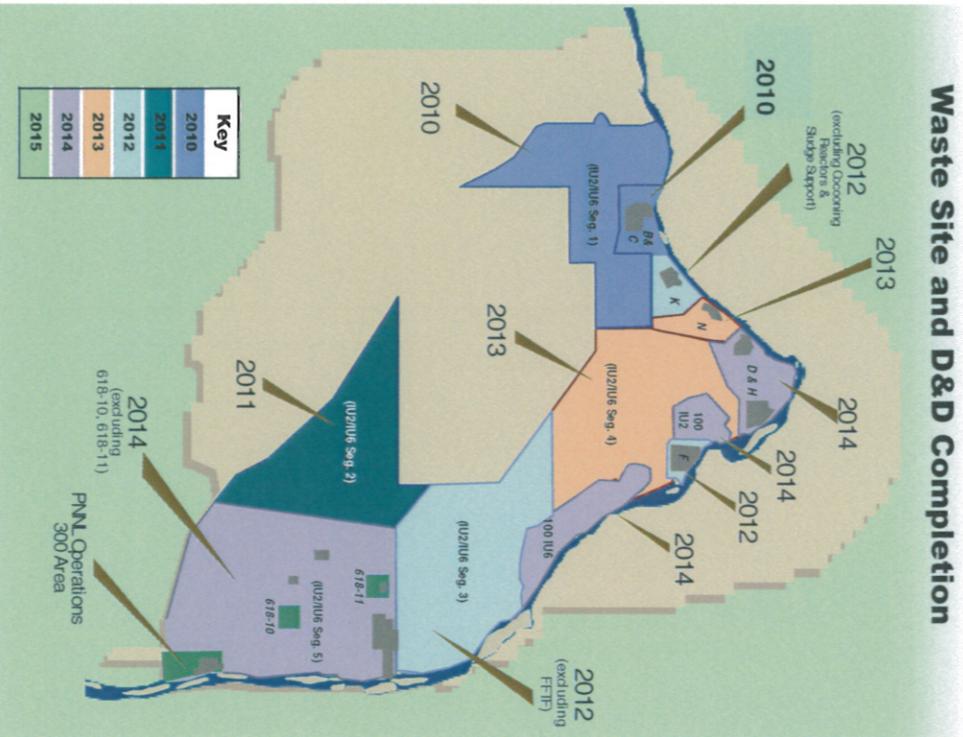


EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

www.em.doe.gov

River Corridor Cleanup

Waste Site and D&D Completion



Containment of Key Groundwater Contaminants

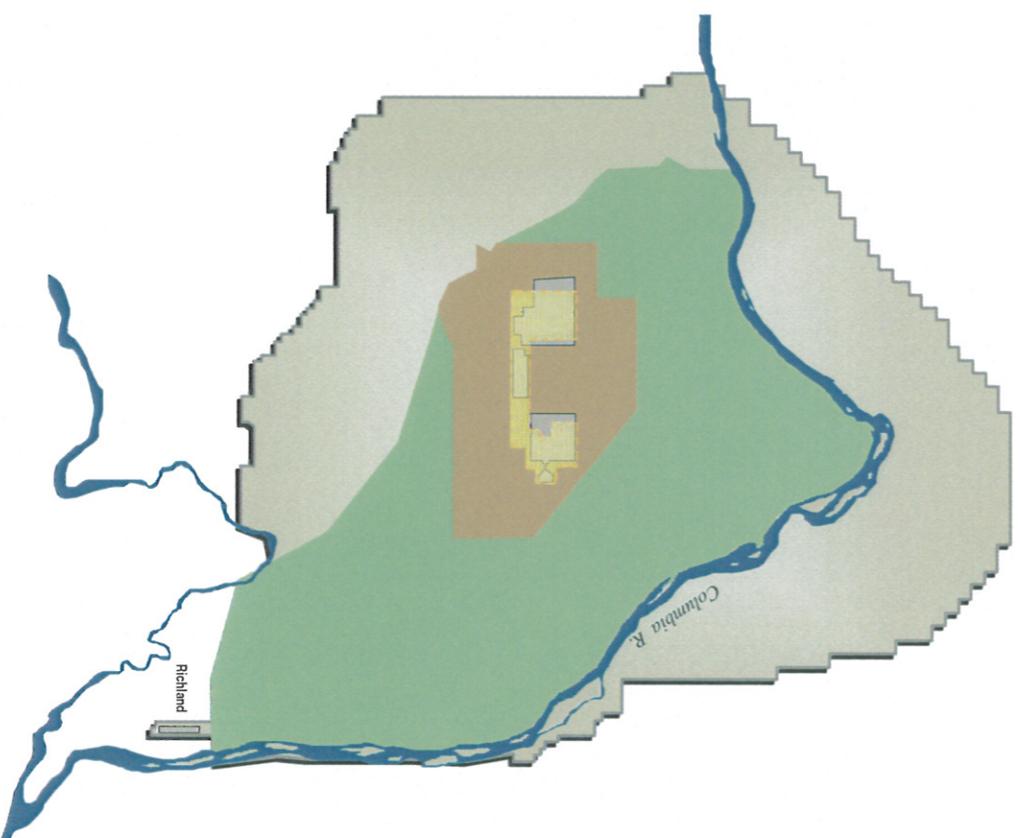


EM Environmental Management
 safety ❖ performance ❖ cleanup ❖ closure

www.em.doe.gov

Goals of Recovery Act Funding

- Accelerate cleanup along the Columbia River
- Accelerate demolition of the Plutonium Finishing Plant
- Accelerate footprint reduction
- Accelerate lifecycle cost reduction
- Allow for continued retrieval of solid, radioactive waste



www.em.doe.gov



EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

Funding Profile – FY 2009 – FY 2010

	FY2009 (\$M)	FY2010 (\$M)
Appropriation	1,057.5	TBD
President's Budget Request	937.8	993.5

American Recovery and Reinvestment Act	1,634.5*
--	----------

*To ensure adequate controls only 80% of ARRA funds are being allotted to the sites for obligation against contracts. The remaining 20% is being held at Headquarters and will be released after the projects are demonstrating adequate performance. Additionally, only 24% of ARRA funds can be costed until all contractor baseline plans have been submitted, reviewed, validated and approved.



EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

www.em.doe.gov



We Remain Committed to...

- Protecting the Columbia River
- Reducing the footprint of the Hanford Site
- Protecting the health and safety of our workforce and the public...with one of the best safety records in the industry
- Following the Tri-Party Agreement that governs cleanup of the Hanford Site
- Working with elected officials, the state, EPA, Tribes, and the public to make decisions that support shared values



EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

www.em.doe.gov

U.S. Department of Energy
Hanford Cleanup Progress

Chuck Spencer
President
Washington Closure Hanford



E **Environmental Management**
safety ❖ performance ❖ cleanup ❖ closure

www.em.doe.gov



Our Work Scope

Deactivate, decontaminate,
decommission, and demolish
486 facilities

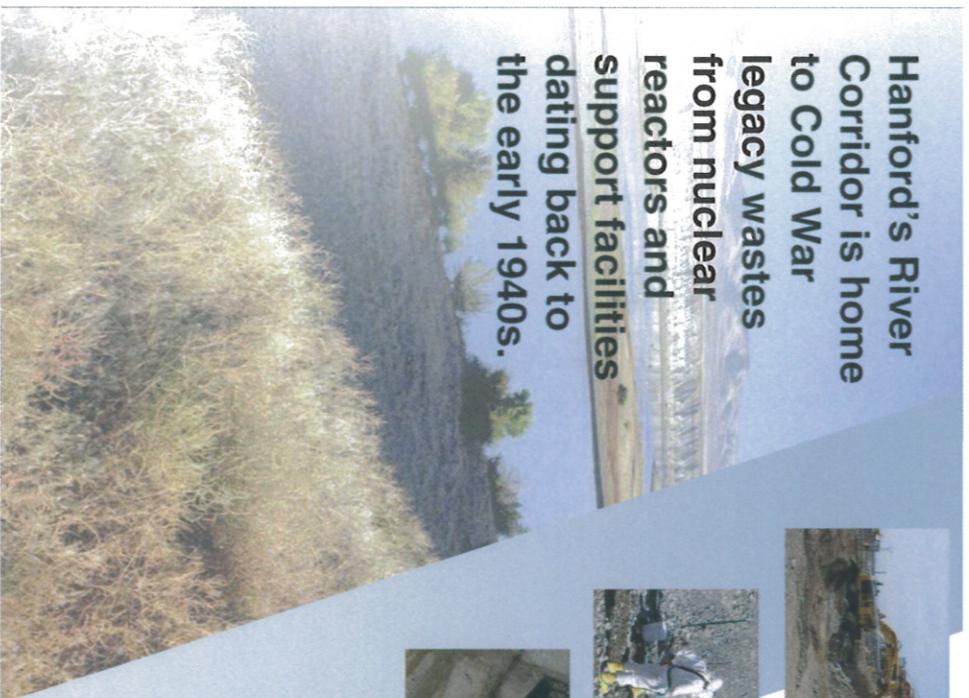
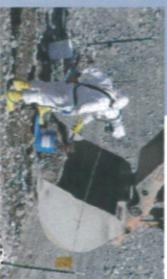
Clean up and close
370 burial grounds and
waste sites

Place four reactors into
safe storage condition

Treat, transport and dispose
4 million tons of hazardous
waste

Risk assessment and
long-term stewardship

Hanford's River
Corridor is home
to Cold War
legacy wastes
from nuclear
reactors and
support facilities
dating back to
the early 1940s.



EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

**River Corridor
Closure Project**

www.em.doe.gov



Risks and Hazards Facing Our Workers

- High risk working conditions
- Chemical and contamination hazards to the environment and worker: Chromium, asbestos, beryllium, mercury, tritium
- Industrial and construction hazards
- Un-inventoried waste sites
- High dose fuel elements and other reactor parts



EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

**River Corridor
Closure Project**

www.em.doe.gov



Our Safety Conscious Work Environment

- Earned Integrated Safety Management Systems Verification
- Strengthened the Employee Concerns Program
 - Continual decline in the number of employee concerns filed
- Maintaining excellent worker safety record
- Recommended for DOE Voluntary Protection Program Star Status
- Shared safety information and lessons learned with other DOE site contractors



EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

www.em.doe.gov

**River Corridor
Closure Project**



Our Project Remains Ahead of Schedule

- Project work is ahead of schedule and under budget
- Reinvested \$120 million gained in efficiencies and work improvements back into the project
- Schedule Performance Index 1.13
Cost Performance Index 1.17
- To date completed 20 of 20 regulatory agreement milestones on or ahead of schedule



EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

**River Corridor
Closure Project**
www.em.doe.gov



Our Cleanup Momentum Continues

- Demolished and loaded out 125 buildings (out of 486 total)
- Remediated 93 waste sites (out of 370 total)
- Transported and disposed of 2 million tons of waste at the Environmental Restoration Disposal Facility (out of 4 million total)



EM Environmental Management

Safety ❖ performance ❖ cleanup ❖ closure

**River Corridor
Closure Project**

www.em.doe.gov



Applying Technologies to Increase Efficiency

- Deployed 12 innovative technologies provided from the public sector and other government sites
 - Increased worker efficiency
 - Reduced risks to workers
 - Reduced overall costs



Spent Nuclear Fuel
Discovery

Compressed Air Foam
System for Hazardous Dust
Suppression

Remotely Controlled
Explosive Demolition

Compactors at ERDF
Equipped with GPS Systems



EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

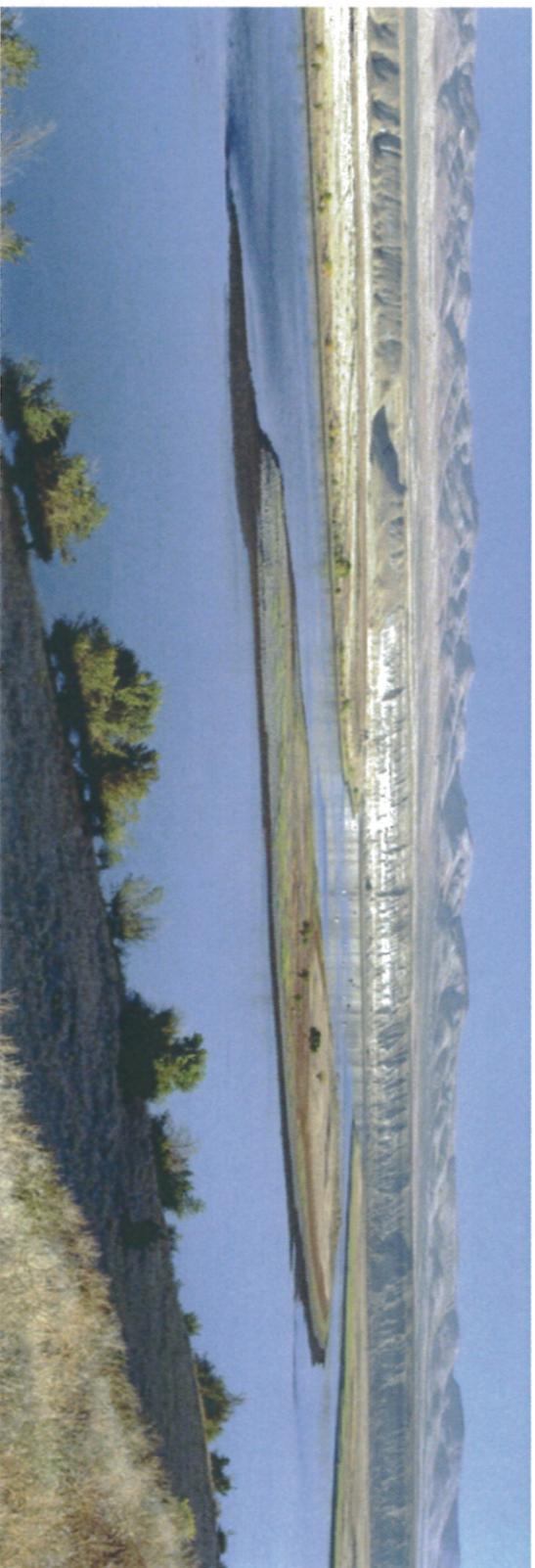
**River Corridor
Closure Project**

www.em.doe.gov



Our Mission

- Protect our workers and the community
- Protect the Columbia River
- Complete the River Corridor cleanup by 2015, reducing the Hanford Site footprint of active cleanup by 90 percent



EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

**River Corridor
Closure Project**
www.em.doe.gov



Hanford Cleanup Progress

John G. Lehew, III
President and CEO
CH2M HILL Plateau Remediation Company,
(CHPRC)



www.em.doe.gov



CHPRC Scope

Project Mission:
Decommissioning
and remediating
the Central
Plateau, 100K
Area, and site
groundwater



- 100K Area remediation (2 reactor complexes, 35 cubic meters of highly radioactive material, 89 facilities to demolish, 109 waste sites)
- Plutonium Finishing Plant (PFP) closure (46 facilities to demolish, 232 gloveboxes, special nuclear material and fuel)
- Groundwater/vadose zone remediation project (12 plumes with 10 major contaminants encompassing approximately 100 square miles)
- Facility, waste site, and canyon remediation (>700 facilities, and more than 1,100 waste sites)
- Treatment and disposal of more than 15,000 legacy containers of radioactive waste, retrieval of 5,400 cubic meters of transuranic waste, treatment of more than 130 million gallons of liquid waste annually, management of 2,300 metric tons of spent fuel and interim storage of 1,936 cesium and strontium capsules
- Place Fast Flux Test Facility into minimum surveillance and maintenance condition (Cold & Dark)



EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

www.em.doe.gov



CH2MHILL
Plateau Remediation Company

Safety Programs Established

In addition to specific training for new workforce, CHPRC has established a safety program focused on worker involvement:

- Safety Analysis Center
- Executive Safety Review Board
- Hazard Review Board
- Technical Response Teams
- Bargaining Unit Safety Representatives Assigned to Projects
- Safety Councils
 - Employee Zero Accident Council
 - President's Zero Accident Council
- ARRA Readiness Assessment Process



5 VPP Star Flags



Union Safety Representatives



EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

 **CH2MHILL**
Plateau Remediation Company

www.em.doe.gov

Contract Status - (First 6 months of contract)

- All FY09 regulatory milestones are on or ahead of schedule (14 of 32 milestones for FY09 completed)
- Cost Performance Index 1.09
- Schedule Performance Index 1.02
- Established subcontracts with small business in excess of 17 percent of total contract cost
- Developed Central Plateau regulatory strategy



PFP glovebox removal



Installation of groundwater wells



Reduced Site Footprint – Work Completed to Date

- Initiated decommissioning of PFP and removed 26 gloveboxes
- Completed Chromium 6 groundwater treatment expansion project in 100K Area along Columbia River, increasing capacity from 300 to 900 gallons per minute
- Plutonium shipments are on schedule
- Certified 1,000 transuranic (TRU) waste drums for off-site shipment
- Pumped and treated 104 million gallons of groundwater
- Disposed of 3,009 drum-equivalents of legacy, low-level waste
- Retrieved 1,466 drum-equivalents of buried legacy TRU Waste
- Demolished 17 buildings
- Completed placing FFTF reactor complex in minimum surveillance and maintenance
- Completed Phase III demolition of the K East Basin



KE Basin spent fuel demolition



Building 2704-W demolition



EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

 **CH2MHILL**
Plateau Remediation Company

www.em.doe.gov

Scope of Work – ARRA Implementation Status

- More than 3,500 people attended CHPRC Job Fair (April 3 & 4)
- Hired over 400 people in first month of Notice to Proceed
- Conducted training programs for new hires starting week of April 27
- Initiated decommissioning activities
- Waste site remediation
- Groundwater projects expansion



Groundwater casing installation



Legacy TRU remediation



EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

 **CH2MHILL**
Plateau Remediation Company

www.em.doe.gov

CHPRC Experience Promotes Efficiency

- The Remedial Process Optimization (RPO) tool was utilized for the expansion of the 100K West pump and treat to increase the capacity and effectiveness of groundwater remediation along the Columbia River. This optimization tool will be used for groundwater remediation across the site.
- Mobile Hot Cells technology will be used to retrieve remote handled TRU wastes from caissons and trenches.
- “Cold and Dark” Process is being used for building decommissioning and enhancing demolition safety.
- Glovebox Decontamination Process is being used to minimize size reduction and TRU waste generation, thereby accelerating decommissioning.
- “Point of Generation” waste management approach is being used to minimize multiple handling of waste and enhance safety.



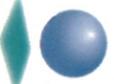
KX Phase I construction project



Repackaging operations on TRU containers



EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure


CH2MHILL
Plateau Remediation Company

www.em.doe.gov

Hanford Cleanup Progress

Pete Knollmeyer
Chief Operating Officer
Fluor Hanford

Fluor Hanford



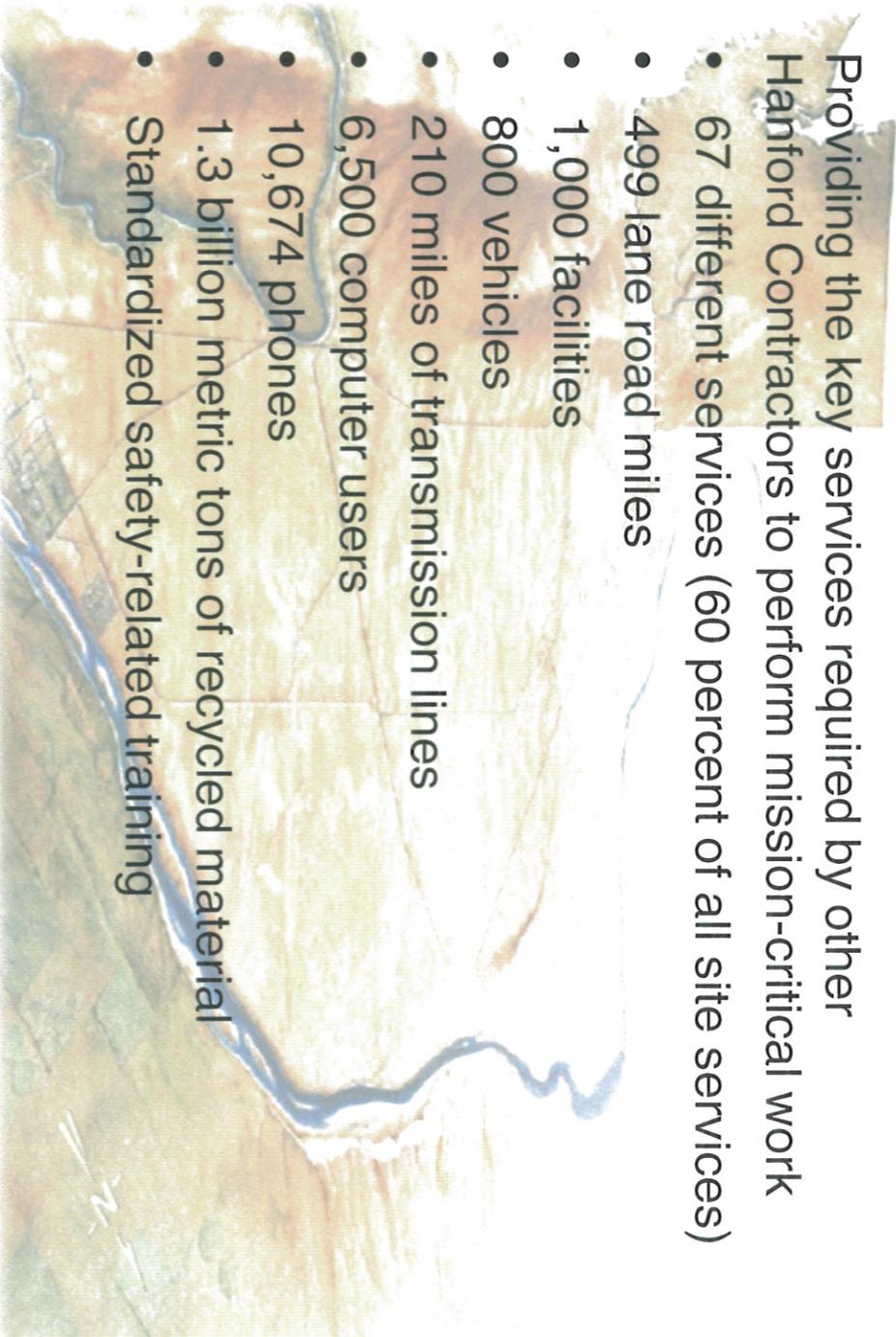
EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

www.em.doe.gov

Fluor Hanford's Role – Integrating Services

Providing the key services required by other Hanford Contractors to perform mission-critical work

- 67 different services (60 percent of all site services)
- 499 lane road miles
- 1,000 facilities
- 800 vehicles
- 210 miles of transmission lines
- 6,500 computer users
- 10,674 phones
- 1.3 billion metric tons of recycled material
- Standardized safety-related training



Fluor Hanford



EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

www.em.doe.gov