



# U.S. DEPARTMENT OF **ENERGY**

Environmental Management  
Richland Operations Office

## FY 2013 Budget Briefing Public Workshop

March 16, 2011



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# Environmental Management: A National Responsibility

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- ✓ We reduce risks and protect our workers, our communities and the environment through cleanup
- ✓ Our work is urgent and essential to the health and economic vitality of our communities and the nation and positions our Sites for future missions and use
- ✓ Our mission is not discretionary - it is a Federal obligation to address cleanup of the Cold War environmental legacy and honor our regulatory commitments
- ✓ Time is not on our side – costs and risks increase over time
- ✓ We have demonstrated value for the American Taxpayer by delivering significant progress in the past several years in reducing risks and the overall liability - but our work is not done
- ✓ The Environmental Management portfolio is one of our nation's largest liabilities - we have a responsibility to relieve future generations of this environmental and financial liability



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# Richland's 2015 Cleanup Vision

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## Building on the ARRA momentum, the Richland team will:

- ✓ **Shrink the active cleanup footprint by 90 percent:** Hanford footprint reduced from 586 square miles to less than 75 square miles.
- ✓ **Protect the Columbia River:** Remove contaminated soil and solid waste adjacent to the river and install critical groundwater remedies to stop key contaminants from entering the river, including chromium, by 2012.
- ✓ **Complete cleanout and demolish the Plutonium Finishing Plant Complex:** Deactivate and demolish over 80 facilities/structures. Eliminates the highest risk nuclear facility on the Hanford Site.
- ✓ **Contain key contaminants on the Central Plateau:** Install critical groundwater pump and treat systems by 2012, and operate them to contain key contaminants in the center portion of Hanford so they do not reach the Columbia River in the future.
- ✓ **Disposition 90 percent of legacy transuranic (TRU) waste by 2015:** Continue transuranic waste retrieval from underground storage, treating for disposal and shipping TRU waste to the Waste Isolation Pilot Plant.
- ✓ **Reduce Hanford Site infrastructure costs by 10 percent:** As a result of shrinking the active cleanup footprint, costs associated with infrastructure and site services are reduced by at least \$25 million per year starting in Fiscal Year 2015.



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# RL Profile

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PBS	PBS Title	FY 2011 President's Budget	FY 2012 President's Budget	FY 2013 Request Allocation
RL-0011	NM Stabilization and Disposition - PFP	\$64,969	\$48,458	\$168,410
RL-0012	SNF Stabilization and Disposition	\$94,016	\$112,250	\$130,528
RL-0041	Nuclear Facility D&D - River Corridor Closure Project	\$386,028	\$330,534	\$291,781
<b>Subtotal 2012</b>	<b>2012 Accelerated Completion</b>	<b>\$545,013</b>	<b>\$491,242</b>	<b>\$590,719</b>
RL-0013	Solid Waste Stabilization and Disposition - 200 Area	\$135,026	\$143,897	\$346,203
RL-0030	Soil and Water Remediation - Groundwater/Vadose Zone	\$129,629	\$222,285	\$220,443
RL-0040	Nuclear Facility D&D - Remainder of Hanford	\$139,641	\$56,288	\$169,684
RL-0100	Richland Community and Regulatory Support	\$19,620	\$20,338	\$27,033
<b>Subtotal 2035</b>	<b>2035 Accelerated Completion</b>	<b>\$423,916</b>	<b>\$442,808</b>	<b>\$763,363</b>
RL-0020	Safeguards and Security	\$69,234	\$69,234	\$72,746
RL-0042	Nuclear Facility D&D - Fast Flux Test Facility Project	\$3,659	\$2,703	\$2,709
<b>Total - RL</b>	<b>Office Base Funding Total</b>	<b>\$1,041,822</b>	<b>\$1,005,987</b>	<b>\$1,429,537</b>

**Total Request meets EO 12088**



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# Richland's Five Year Request Profile

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Office	Office Title	FY 2013 Requirement	FY 2014 Requirement	FY 2015 Requirement	FY 2016 Requirement	2017 Requirement
Richland Operations Office – Total Requirements		\$1,429,537	\$1,374,682	\$1,169,383	\$1,213,621	\$1,031,850



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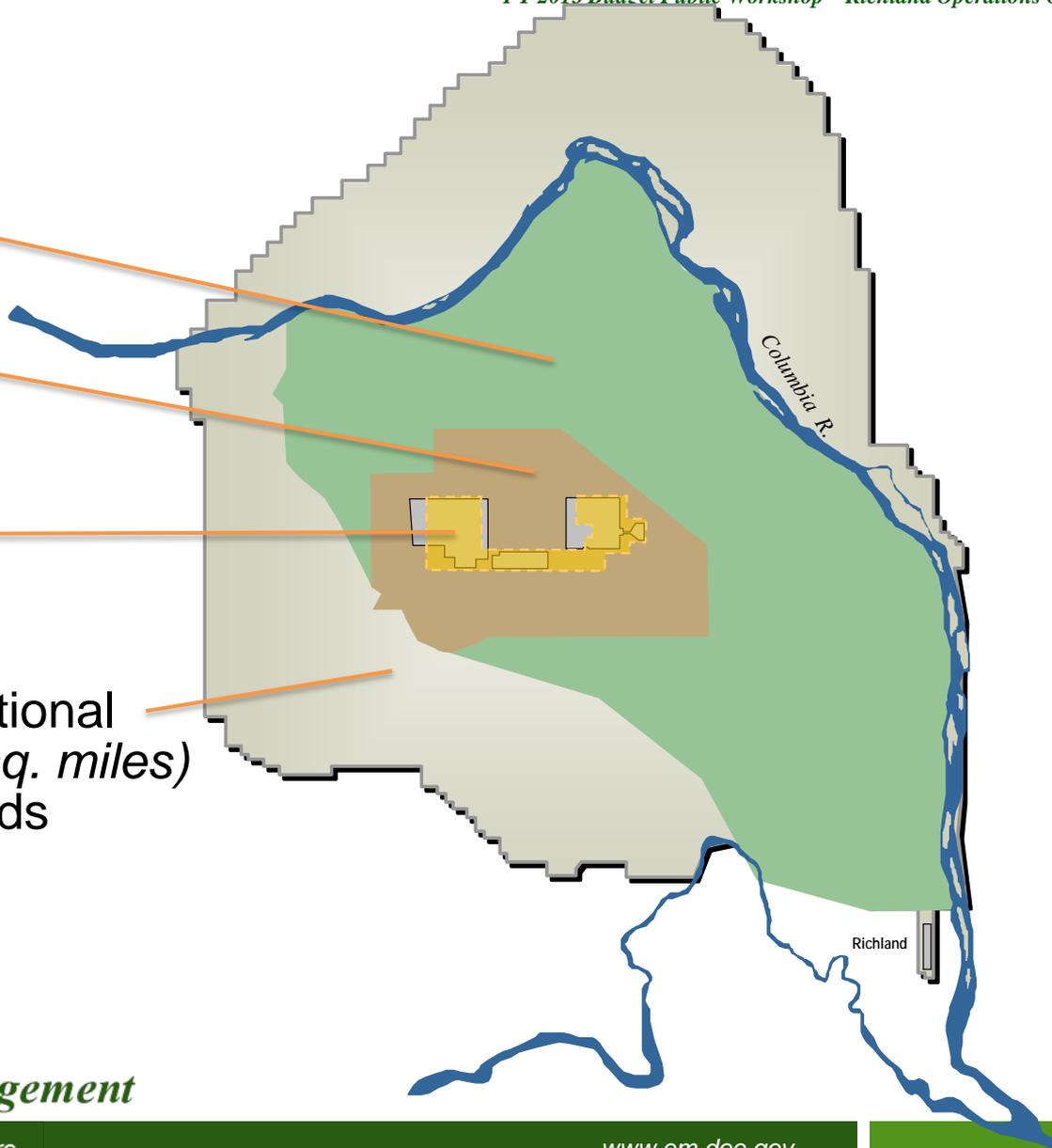
# Shrinking the Footprint of Active Site Cleanup

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## Work in four areas

-  River Corridor (~220 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)



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# River Corridor

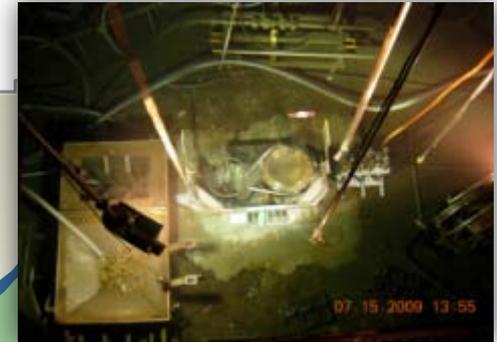
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## Spent Nuclear Fuel Stabilization & Disposition (RL-0012)

### 100 K Area

- Provides operation and maintenance support to maintain the Cold Vacuum Drying Facility and the KW Basin in a safe and compliant manner. Funding also supports minimum required surveillance and maintenance activities (\$34,137)
- Provides sitewide services allocation (\$39,917)
- Complete final debris campaign in KW Basin; Complete procurement and installation of the Sludge Transfer and Storage Containers (STSC) processing equipment; Complete construction of the STSC Annex and complete T-Plant modifications and Readiness activities for STSC ; Development of treatment preferred alternative (\$56,474 )



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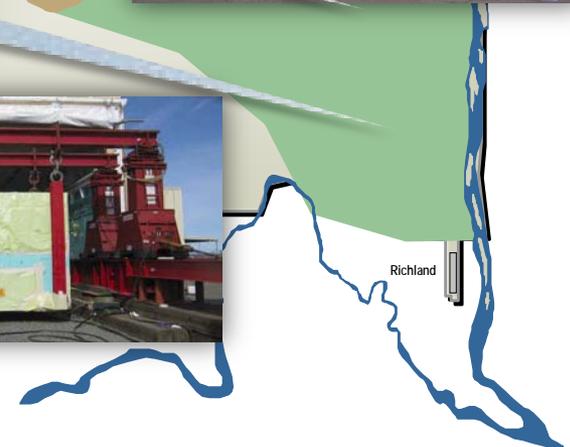
# River Corridor

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- River Corridor Cleanup (\$236,453)
  - Complete All Interim Response Actions For The 100 Areas (M-016-00A)
  - Complete The Interim Response Actions For The 100 N Area (M-016-55)
  - Complete Interim Remedial Actions For 300-FF-2 Waste Sites (M-016-62)
  - Complete Revegetation of 300-FF-2 Waste Sites (M-016-139)
  - Initiate remediation on the 309 facility and 300 Area Process Sewer systems (M-016-75)
  - Complete the selected removal and/or remedial actions for 13 high priority facilities (M-094-09)
  - Field remediation (FR), and deactivation/decontamination/decommissioning/demolition (D4), will also continue in other areas along the Columbia River Corridor as well as maintaining critical functions in engineering, SH&Q, environmental compliance, and project controls.
  - Provide operations and disposal capability at the Environmental Remediation and Disposal Facility (ERDF) that directly supports the remediation of waste sites and the D4 of facilities
  - Provide surveillance and maintenance of nuclear, radiological, and industrial facilities in the 100, 300, and 400 Areas of the River Corridor Closure segment of the Hanford site; continue operations of specific key utilities (e.g. water, sewer, electrical) in those same Areas
  - B Reactor surveillance and maintenance
- Interim safe storage (ISS) of the 105-KE Reactor, D4 100K Area facilities and waste site remediation in the 100K Area (\$41,655)
- Provide necessary general utilities, fire department, and analytical services to support minimum safe operations (\$13,673)

## Nuclear Facility D&D – River Corridor Closure Project (RL-0041)



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# River Corridor

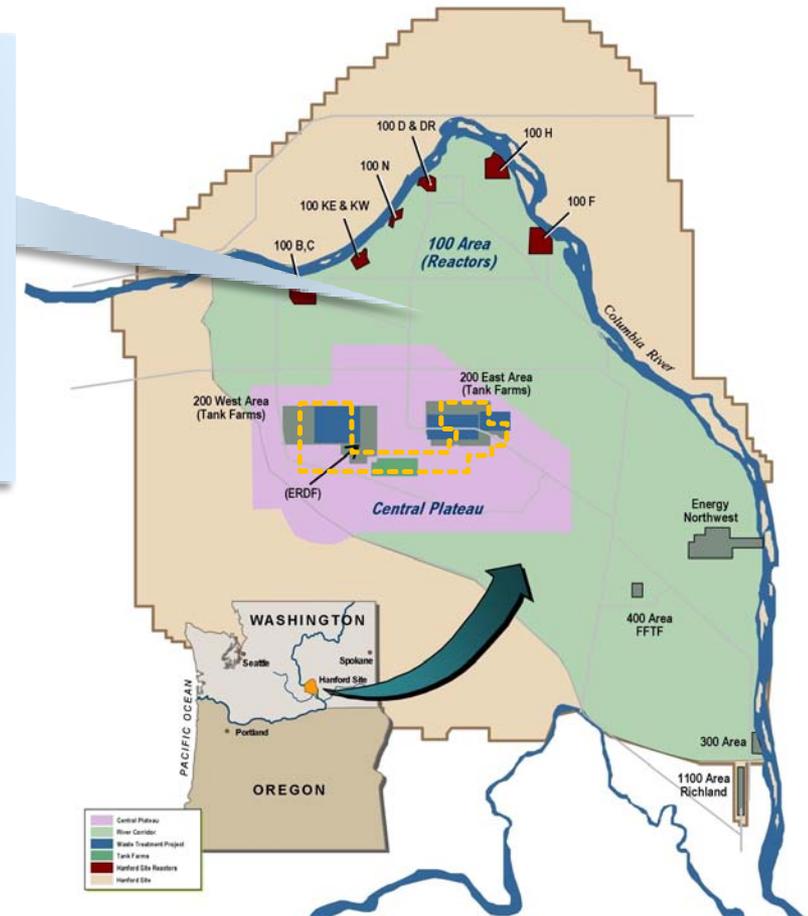
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## Soil and Water Remediation - Groundwater/Vadose Zone (RL-0030)

### Groundwater Protection

- Completes characterization and decision documentation for the CERCLA RI/FS process and obtain the final Records of Decision for the 100 Areas (M-016-00A) (\$7,851)
- Continue modification and expansion of existing groundwater remediation systems in support of final remedies (\$5,500)



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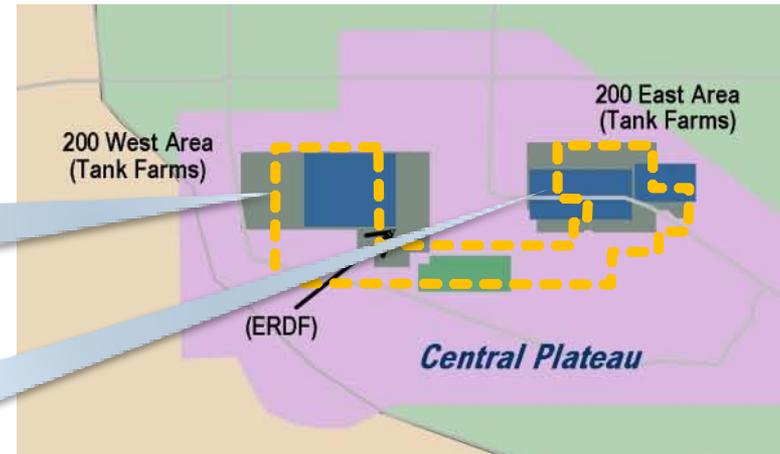
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## Groundwater Protection

- Continues integration of site-wide groundwater and vadose zone cleanup activities, groundwater contamination monitoring, as well as operations, maintenance, and necessary modifications of existing remediation systems. Deploys chemical and biological treatment to select areas in support of final remedies (\$124,243)
- Modifications and expansions of existing groundwater systems (\$6,894)
- Continue characterization and supporting decision documentation that are needed to complete the CERCLA RI/FS process and obtain the final Records of Decision for the Central Plateau groundwater operable units and Outer Area waste sites. Continues deep vadose zone remediation planning and testing feasibility of existing technologies to accomplish clean up of waste sites where deep vadose zone contamination exists (\$5,279)
- Achieves significant progress towards the completion of the necessary characterization and supporting decision documentation that are needed to complete the CERCLA RI/FS process and obtain the final Records of Decision for the Central Plateau Inner Area, Canyon Facilities and surrounding waste sites (\$6,062)
- Accomplishes the expansion of the 200 West ground water treatment facility to address the final remedy associated with the 200-UP-1 contaminants of concern (\$9,077)
- Provides sitewide service allocation (\$55,537)

## Soil and Water Remediation - Groundwater/Vadose Zone (RL-0030)



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## Plutonium Finishing Plant Closure Project

- Minimum safe surveillance & maintenance, and essential services for 24 industrial, radiological and nuclear facilities (12 office/support, 6 vault/ancillary buildings, 6 process) (\$20,763)
- Program management and support activities necessary for minimum safe operations and essential services (\$9,238)
- Provides sitewide services allocation (\$13,997)
- Hire, train and qualify staff, and establish teams to re-start deactivation and decommissioning activities to prepare the 234-5Z, 291-Z, 291-Z Stack, 243-Z, 236-Z (PRF), 242-Z buildings, and remaining ancillary facilities for demolition (\$124,412)

## Nuclear Material Stabilization/ Disposition – PFP (RL-0011)



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## Nuclear Material Stabilization & Disposition – PFP (RL-0011)

### Plutonium Finishing Plant Closure Project Mission

- Maintain PFP in a safe, secure and compliant condition
- De-inventory Special Nuclear Material – **COMPLETE**
- Ship stored plutonium and uranium for off-site storage/disposal – **COMPLETE**
- Clean out and deactivate PFP systems and structures and dismantle the PFP Complex – **IN PROGRESS**



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## Plutonium Finishing Plant Closure Project

Assume additional FY 2012 funding is received to support the PFP Project

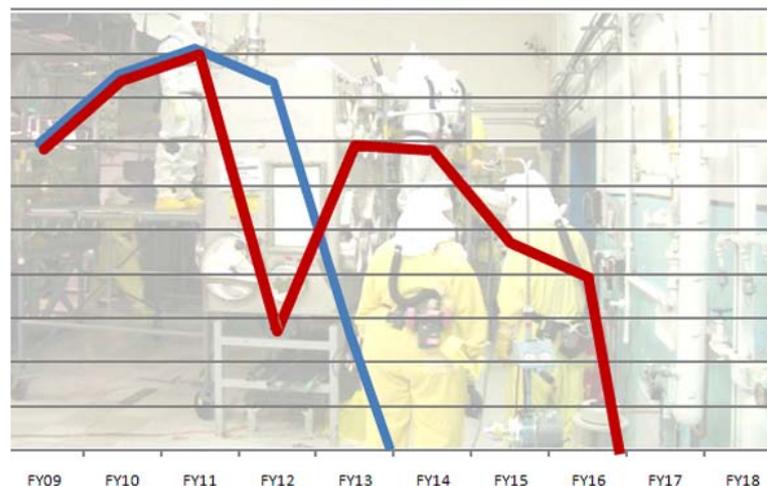
Workscope Priority:

- 236-Z Plutonium Reclamation Facility (PRF) canyon pencil tank size reduction and disposition
- 242-Z Americium Reclamation Facility strip out, decontamination and decommissioning
- PRF glovebox cleanout/disposition and facility systems removal – piping, ventilation, fire protection, etc.
- Size reduction & disposition of remaining 234-5Z gloveboxes
- Removal of highly contaminated process vacuum, transfer and drain lines
- Removal of the most contaminated ventilation exhaust ductwork and HEPA filter boxes
- Ancillary facilities demolition

Goal is to achieve TPA milestone M-083-43, Complete transition of the 242-Z and 236-Z to support PFP decommissioning due 9/30/2013

## Nuclear Material Stabilization & Disposition – PFP (RL-0011)

### PFP Closure Project Baseline and Reduced Funding Scenario



Reduced Funding Scenario

Total Estimated Cost (09-18) - \$983

Increase of \$287M

- Min Safe
- Project Management and Oversight
- Rehiring, Retraining, Loss of Proficiency

Baseline

Total Estimated Cost (09-18) - \$696M



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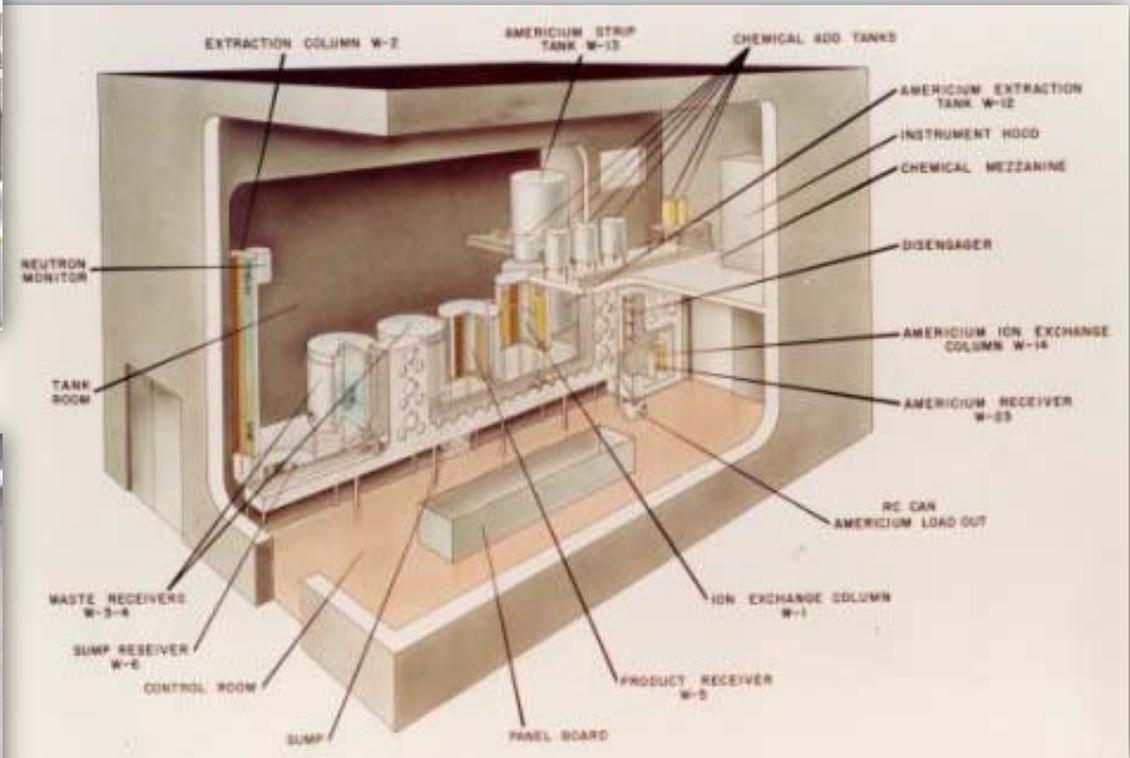
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## Nuclear Material Stabilization & Disposition – PFP (RL-0011)



236-Z, Plutonium Reclamation Facility Glovebox Removal



Waste Treatment & Americium Recovery Facility  
242-Z Tank Room Decontamination and Removal



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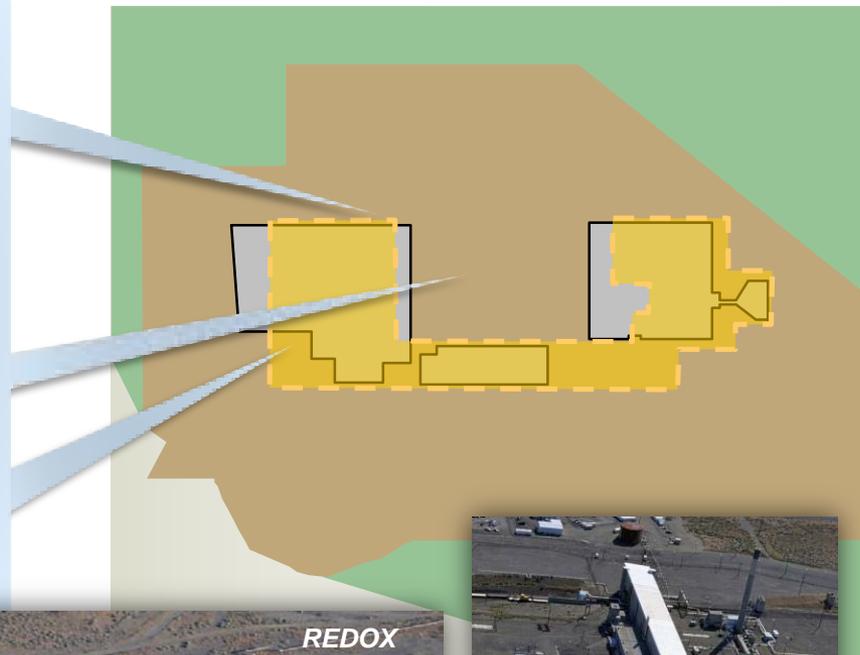
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## Nuclear Facility D&D – Remainder of Hanford (RL-0040)

- Provide surveillance and maintenance activities to ensure safety for inactive waste sites and facilities on Hanford's Central Plateau (\$14,885)
- Perform waste site remediation activities in the Outer Area (\$10,328)
- Provide incremental project management and support operations (\$2,334)



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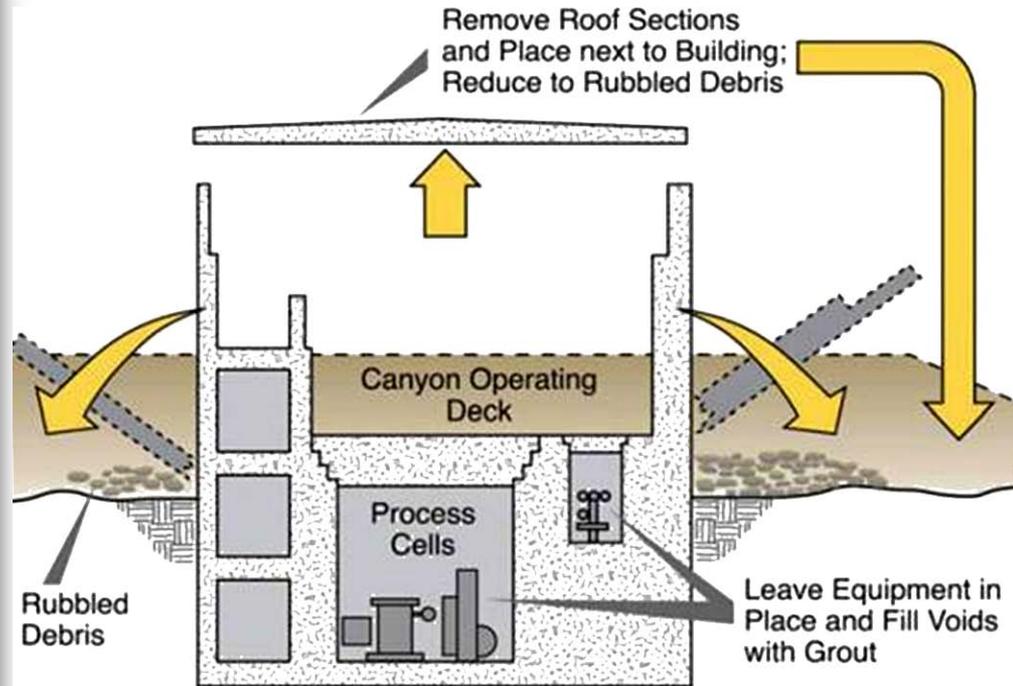
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- Perform U Plant canyon D&D (\$75,495)

## Nuclear Facility D&D – Remainder of Hanford (RL-0040)



Building Demolished  
2013



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- Provide steam for critical site heating systems; maintain DOE-RL integrated baseline and baseline certification (\$32,309)
- Provide realistic training for the safety and health of workers at approximately 36,000 student training days; Maintain HAMMER (Volpentest training and education center) facilities in a ready-to-serve state (\$7,197)
- Provide site infrastructure upgrades, replacements and repairs. Replacement of crane and rigging; general plant facilities HVAC replacements; fire truck and mobile response unit replacement; Hanford Local Area Network (HLAN) upgrades; roadway repair and sealing; water line replacement, and installation of potable water lines (\$13,138)
- Provides sitewide services allocation (\$13,997)

## ***Nuclear Facility D&D – Remainder of Hanford (RL-0040)***



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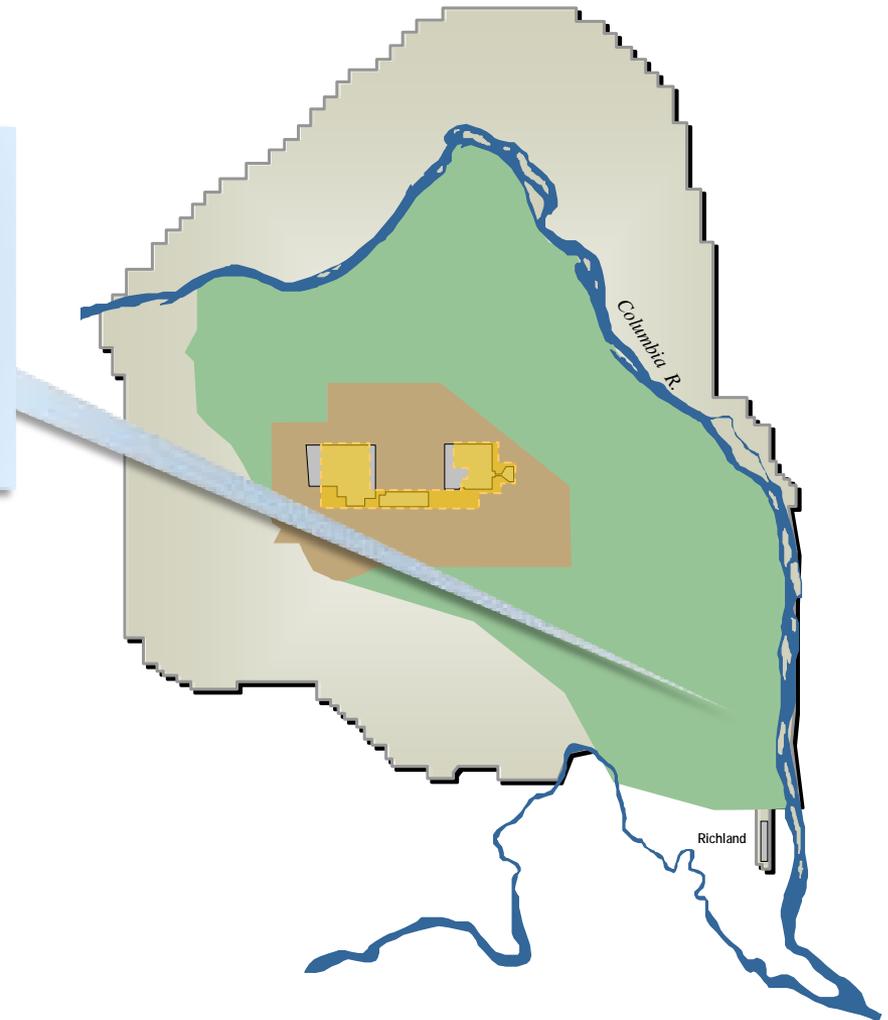
# River Corridor

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## ***Nuclear Facility D&D FFTF (RL-0042)***

- Provide surveillance and maintenance activities necessary to ensure minimum safety for FFTF and support facilities which includes residual and stored bulk sodium at FFTF (\$1,897)
- Provides sitewide services allocation (\$812)



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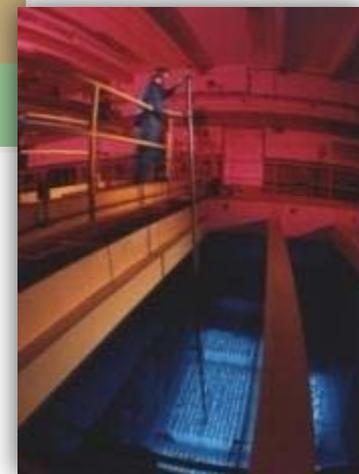
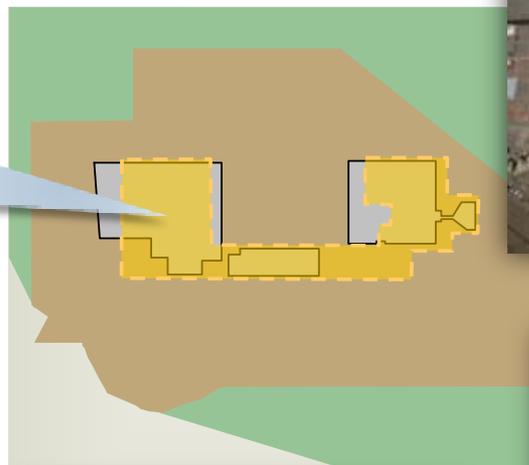
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- Provide base operations necessary to support safe and compliant storage of spent nuclear fuel (SNF). Included are activities to operate and maintain the CSB and 200 Area Interim Storage Area (ISA) facilities (\$6,128)
- Provide minimum project management and support necessary to ensure overall waste management project compliance to applicable requirements (\$30,157)
- Operate and maintain the Waste Encapsulation Storage Facility (WESF) for compliant storage of the cesium and strontium capsules (\$5,202)
- Provide minimum safe operations for the Central Waste Complex (CWC); including Solid Waste base operations, Mixed Waste Disposal Trenches, Integrated Disposal Facility (IDF), and ERDF interface (\$12,915)
- Provides sitewide services allocation (\$52,376)

## Solid Waste Stabilization/ Disposition (RL-0013C)



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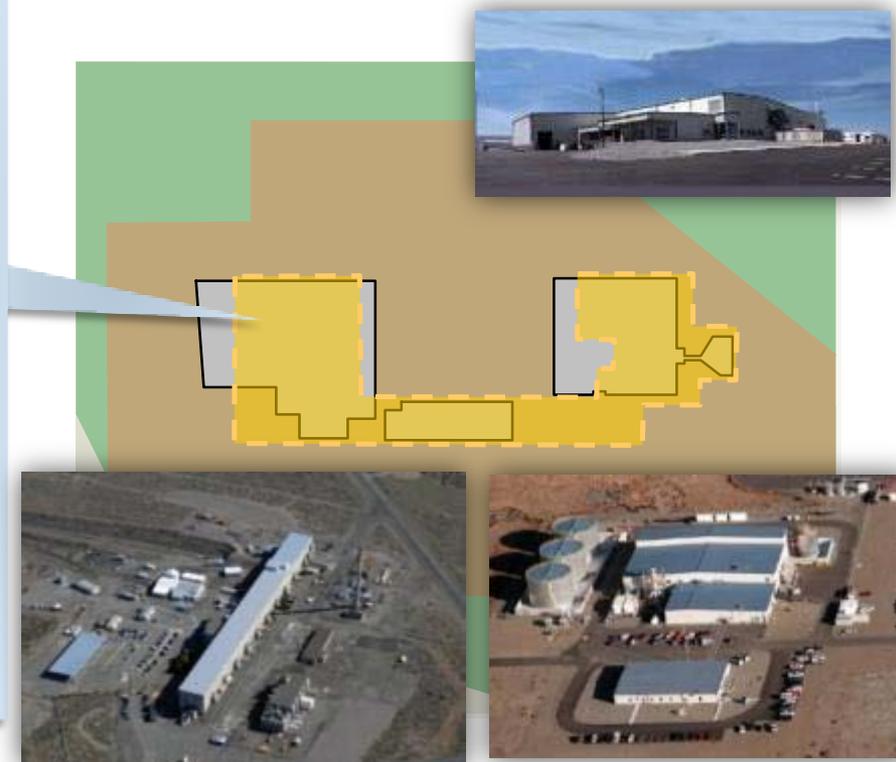
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- Maintain the T Plant Complex in a safe and compliant condition (\$17,694)
- Maintain the Waste Receiving and Processing (WRAP) Facility in a safe and compliant condition (\$9,819)
- Provide base operations and necessary upgrades to treat Hanford Site effluents in accordance with state permit requirements. The Liquid Effluent Facility supports ongoing site cleanup activities including: groundwater remediation; radioactive waste tank volume reduction; and disposal facility leachate as required by permit requirements (\$29,598)

## Solid Waste Stabilization/ Disposition (RL-0013C)



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# Hanford Site Support

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## ***Safeguards and Security (RL-0020)***

- Maintain appropriate Hanford Site access controls, emergency response, and physical security at the Hanford Site. Maintain Material Control and Accountability, Information Security, Personnel Security, and Protective Force (\$72,746)

## ***Community & Regulatory Support (RL-0100)***

- Support Washington and Oregon States emergency preparedness, environmental oversight and other activities related to Hanford cleanup (\$6,020)
- Support the Washington State Department of Ecology Resource Conservation and Recovery Act of 1976 Mixed Waste Fee; Washington State Department of Health's air emissions monitoring invoice; Payment in Lieu of Taxes for Grant, Benton, and Franklin Counties; Natural Resource Trustee Council; and Hanford Advisory Board (\$15,013)
- Natural Resource Injury Assessment (\$6,000)



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# 2015 Vision Progress

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With the expected funding in FY 2011 and 2012, the FY 2013 request supports RL's 2015 Vision in the following components:

- Continuing River Corridor cleanup for completion by 2015
  - On track to achieve 90 percent reduction of active cleanup footprint by 2015
- Restarting TRU Retrieval in last part of FY 2013
- Continue making progress toward containing and preventing contaminants from entering the Columbia River



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