

HANFORD COMMUNITIES

WINTER 2022 NEWSLETTER

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FEATURED



Washington River Protection Solutions operations engineer Steven Porter, left, and nuclear chemical operator Brent Walker monitor the Tank-Side Cesium Removal System in the control room as the system is put in operations mode.

THE HANFORD SITE | U.S. DEPARTMENT OF ENERGY

NEW ERA IN HANFORD TANK WASTE TREATMENT

Tank-Side Cesium Removal (TSCR) System near the AP Tank Farm – the first step in the Direct-Feed Low-Activity Waste (DFLAW) Program to treat tank waste.

The Department of Energy (DOE) announced in January that workers have begun the first large-scale treatment of radioactive and chemical waste from large underground tanks at the Hanford Site. This marks completion of the first of an ambitious slate of 2022 priorities set by the DOE Office of Environmental Management (EM).

In a message of congratulations to the Hanford workforce, Senior Advisor for EM William "Ike" White called the Tank Side Cesium Removal (TSCR) System a "cornerstone of the Direct Feed Low Activity Waste program".

"It's a capability that will transform the Hanford Site and benefit the entirety of the EM program," White said. "I'm optimistic about what Hanford will achieve this year as we work toward around-the-clock operations to treat tank waste."

The newly operational TSCR System removes radioactive cesium and solids from tank waste. The treated waste will be fed directly to the nearby Waste Treatment and Immobilization Plant for vitrification, or immobilization in glass, when the plant comes online next year.

CONTINUED ON PAGE 2

“NEW ERA” – CONTINUED (PAGE 1)

The cesium removal system is a key part of the Site's Direct Feed Low Activity Waste (DFLAW) program, an assembly of several highly interdependent projects and infrastructure that will operate together to vitrify and safely dispose of millions of gallons of low-activity tank waste once operational.

“This is an exciting new era in our Hanford cleanup mission,” said Brian Vance, manager of EM's (DOE's) Office of River Protection and Richland Operations Office. “For the first time in Hanford Site history, we are treating a significant amount of tank waste on an industrial scale.”

Hanford tank operations contractor Washington River Protection Solutions (WRPS), working with EM staff, other site contractors and regulatory agencies, built, installed and tested the cesium removal system next to large underground storage tanks. Those tanks, called the AP tank farm, are located near the center of the Hanford Site, which is less than a quarter mile from the vitrification plant. The cesium removal technology is nearly identical to a system operating at DOE's Savannah River Site in South Carolina.

John Eschenberg, WRPS president and CEO, said the launch of the TSCR system operations was nearly three years in the making.

“I'M EXTREMELY PROUD OF OUR TEAM, THE DEDICATED WORKFORCE WHO DELIVERED THIS PROJECT ON TIME AND ON BUDGET DURING SOME CHALLENGING TIMES OVER THE LAST 18 MONTHS,” ESCHENBERG SAID.

The Hanford Site is home to approximately 56 million gallons of radioactive tank waste stored in 177 underground tanks, representing one of DOE's largest environmental risks and most complex challenges. The tank waste is a result of nearly five decades of plutonium production that supported national security missions and helped end World War II.

An animated video showing how the cesium removal system fits into the highly integrated Direct-Feed Low-Activity Waste Program at Hanford can be viewed [here](#). ■

ECOLOGY'S “LET'S TALK ABOUT HANFORD” SERIES CONTINUES

Let's talk about Hanford

Featuring
Amena Mayenna
LERF/ETF Environmental Engineer and Permit Lead
Andrew Pomiak
242-A Evaporator Environmental Permit Lead

MARCH 30, 2022

**LERF/ETF AND
242-A EVAPORATOR**

A conversation with you



Ready to step into the world of Hanford cleanup? In the next edition of Let's Talk About Hanford, attendees will be learning about several important Hanford cleanup facilities, the Liquid Effluent Retention Facility, Effluent Treatment Facility, and the 242-A Evaporator.

For this conversation, we're bringing on several of our Nuclear Waste Program experts, including LERF/ETF Environmental Engineer and Permit Lead Amena Mayenna and 242-A Evaporator Environmental Permit Lead Andrew Pomiak.

WHEN: Wednesday, March 30, 5:30pm

WHERE: Online via [Facebook](#) & [Zoom](#)



DOE ESTIMATES \$100S OF BILLIONS NEEDED TO FINISH HANFORD NUCLEAR WASTE CLEANUP

SHARED FROM THE TRI-CITY HERALD, BY ANNETTE CARY

Completing cleanup of the Hanford nuclear reservation will cost an estimated \$300 billion to \$640 billion, according to a new Department of Energy report.

The Hanford Lifecycle Scope, Schedule and Cost Report published at the end of January is the first in three years. It drops the projected remaining cost from a range of \$323 billion to \$677 billion in the 2019 report as DOE re-evaluated work based on what it learned over the last three years.

That is after the 2019 lifecycle report tripled the estimated cost from the previous 2016 report, which put costs at \$108 billion to complete most remaining cleanup by 2066. The report, required by the legally binding Tri-Party Agreement, figures the remaining cost and a schedule for remaining environmental cleanup of the nuclear reservation, giving what DOE considers its best case and worst-case scenarios.

The current estimate is for completing most cleanup by about 2078 plus the initial continued monitoring of the site through 2095. The 580-square-mile Hanford site adjacent to Richland in Eastern Washington was used to produce almost two-thirds of the plutonium for the nation's nuclear weapons program from World War II through the Cold War.

ENVIRONMENTAL CLEANUP

Now DOE is spending about \$2.5 billion annually on environmental cleanup of radioactive and other hazardous chemical waste and contaminated buildings, soil and groundwater. But the estimated costs to finish most cleanup by 2078 would require much larger annual budgets.

The dramatic jump in cleanup costs three years ago was attributed mostly to the increased cleanup costs for the 56

million gallons of radioactive waste in underground tanks. The tanks must be emptied, the tanks closed in place or removed, and then the waste treated for permanent disposal.

Current plans call for much of the waste to be turned into a stable glass form at the Hanford Waste Treatment Plant, or vitrification plant, which has been under construction in the center of Hanford since 2002. DOE faces a court order to start up the plant to initially treat some of the least radioactive waste by the end of 2023, unless more time is allowed due to delays caused by the COVID-19 pandemic.

The new report says that improvements in how the glass will be formulated will lead to more waste in each immobilized glass containers, reducing the number of waste-filled containers that need to be produced.

COST SAVINGS

That and revised cost estimates for operating the vitrification plant provide cost savings, the report indicated. DOE also pointed out that the report takes into account work completed over the last three years. Among accomplishments was finishing the demolition of the Plutonium Finishing Plant, where plutonium in a liquid solution was processed into a solid form for shipment off site to weapons production facilities.

The report also projects that less money will need to be spent on treatment of contaminated groundwater than in earlier projections, as Hanford workers have consistently exceeded goals on that work. The report projects spending at Hanford will peak in about eight years at about \$7.5 billion, nearly triple the amount Congress is currently budgeting for the site, under the most optimistic estimate of \$300 billion. Spending would be above \$4 billion from 2023 through 2069, according to

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HANFORD COMPLETES HISTORIC CLEANUP AT ICONIC PLUTONIUM FINISHING PLANT

FROM THE OFFICE OF ENVIRONMENTAL MANAGEMENT

Workers with EM Richland Operations Office (RL) contractor Central Plateau Cleanup Company (CPCCo) recently completed final demolition activities at Hanford's former Plutonium Finishing Plant (PFP), literally putting a cap on what was once one of the most hazardous facilities in the EM cleanup complex.

Final project demobilization and documentation activities – including pressure-washing equipment, surveying for contamination and removing fencing – were completed in December.

In November, crews spread more than 900 truckloads of sand and gravel over the plant's footprint, which once included four large facilities and several support buildings that produced nearly two-thirds of the nation's supply of plutonium metal and oxides. The thick cover of sand and gravel is fortified with a fixative to protect the environment from any residual contamination and limit the effects of water, wind and heat until underground waste sites are remediated.

"So many people have contributed to this critical risk-reduction project over the years," said Tom Teynor, RL federal project director. "Completing the demolition, cleanup and capping of the plant site is a testament to the remarkable tenacity, resilience and dedication of many workers, Hanford contractors, Department of Energy staff and regulatory agency personnel."

Placement of the cover follows the removal late last summer of the remaining rubble from demolition of the Plutonium Reclamation Facility and soil sampling beneath the concrete slabs of that facility and the nearby Americium Recovery Facility, two of the former plant's main buildings. The demolition rubble was safely packaged and disposed at the Environmental Restoration Disposal Facility, Hanford's onsite engineered landfill.

Removal of radioactive and hazardous material from the plant site not only reduces risk on Hanford's Central Plateau, but also allows for safe access to surrounding areas for progressing other cleanup activities.

The recent progress follows the historic demolition of PFP's main processing facility in February 2020. Just weeks later — with removal of rubble from the reclamation facility about 25% complete — the worksite was placed in a safe configuration when Hanford went into a minimum essential operations posture at the beginning of the COVID-19 pandemic. The workforce remobilized to continue the work, and safety has remained the top priority.

"I'm proud of this team for maintaining a deliberate speed and staying focused on safety over these past two years," said Robert Wade, CPCCo closure manager for the PFP. "We not only successfully navigated a number of COVID-19 controls, but also safely persevered through record heat last summer. Completing this project is certainly a highlight in Hanford's cleanup history." ■



***WATCH TIME-LAPSE VIDEO
OF PFP DEMOLITION FROM
OCTOBER 2016 THROUGH
NOVEMBER 2021.***



Hanford site crews work to clean up contamination near the K East and K West Reactors along the Columbia River.

CONGRESS ADOPTS RECORD HIGH BUDGET TO CLEAN UP HANFORD, WA NUCLEAR CONTAMINATION

SHARED FROM THE TRI-CITY HERALD,
BY ANNETTE CARY

The Hanford nuclear reservation budget for the current fiscal year will be nearly \$128 million more than proposed by the Biden administration and about \$25 million above the fiscal 2021 budget. The U.S. Senate approved the budget as part of a massive spending bill for the fiscal year that began in October. The vote late Thursday was 68-31, which sent the bill to the president for his signature. The spending package includes a record high amount of nearly \$2.6 billion for maintenance and environmental cleanup of the Hanford site adjoining Richland in Eastern Washington.

But even that amount falls shy of cleanup costs, Sen. Patty Murray, D-Wash., pointed out in budget hearings. Congress would need to budget for than \$11 billion a year for the next 57 years to complete Hanford cleanup, she said.

Murray is the highest-ranking Democrat on the Senate Appropriations Committee, putting her in a key position to work for Hanford environmental cleanup money. Sen. Maria Cantwell, D-Wash., also pushed for money for Hanford and supported the spending package. "A lot of presidents look at the federal budget and try to think of ways to trim costs at Hanford, but they often fail to remember the federal government's obligation to this community. I make sure they remember," Murray said in a statement after the fiscal 2022 bill was approved.

In a surprise move, the Biden administration had proposed zeroing out spending for payments in lieu of taxes this year at Hanford. But the final spending bill includes \$3.5 million in PILT payments to local governments.

Both Murray and Cantwell pressed Energy Secretary Jennifer Granholm in Senate committee hearings about the

administration's proposal to eliminate PILT funding this year. "I want to be clear that (PILT funding) cannot be eliminated or cut back in any way. The Tri-Cities rely on this funding, and they are owed this funding," Murray told Granholm. The nuclear reservation covers 580 square miles, mostly in Benton County, taking that land off of its property tax rolls. Smaller portions of the nuclear reservation reduce money available for Franklin and Grant counties.

"PILT funding is intended to compensate local governments for taxes that they cannot collect from the federal government," Cantwell told Granholm.

PILT is distributed by the counties for roads, rural libraries, ports, public hospital and other health services, and help for indigent veterans. But the largest chunk goes to schools. Benton County received about \$3.8 million in PILT in 2021, with about \$1.7 million going to the Richland School District.

HANFORD CLEANUP SPENDING

The spending package includes just over \$1.6 billion for the Hanford Office of River Protection, which is responsible for 56 million gallons of radioactive waste stored in underground tanks and preparations to treat and dispose of the waste.

It is an increase of \$2 million above the previous year, and \$105 million above the Biden' administration's budget request, according to Murray's staff.

It includes language requested by Murray for construction work on buildings at the \$17 billion vitrification plant that will handle high-level radioactive waste, the High-Level Waste Treatment Facility and the Pre-Treatment Facility. The language was intended to ensure compliance with the 2016 federal

CONTINUED ON PAGE 6

“RECORD HIGH BUDGET” – CONTINUED (PAGE 5)

court consent decree, which sets deadlines for the start of treatment of radioactive waste, Murray’s staff said.

The Department of Energy now is working to start treating low activity radioactive waste at the vitrification plant by the end of 2023, but also is required to have the plant fully operating, including treating high-level radioactive waste, by 2036. The bill also includes \$950 million for the work of the Richland Operations Office at Hanford, which is \$23 million above both the previous year’s budget and also the administration’s request for the current fiscal year, Murray’s staff said.

The Richland Operations Office is responsible for operating and maintaining the site and environmental cleanup other than tank waste, which includes contaminated buildings, soil and groundwater, plus additional buried and stored radioactive waste.

HISTORIC HANFORD REACTOR

The Hanford site was used from World War II through the Cold War to produce nearly two-thirds of the plutonium for the nation’s nuclear weapons program. The bill also includes Murray’s requested report language that \$10 million be used for the B Reactor roof replacement project to ensure that work gets done.

B Reactor, the world’s first full-scale nuclear production reactor, produced the plutonium used in the Trinity Test in the New Mexico desert in July 1945 and the “Fat Man” atomic bomb dropped on Nagasaki, Japan, helping end the war days later.

The reactor is preserved as part of the Manhattan Project National Historical Park and tours are available. “I have family from the Tri-Cities,” Murray said. “I’m always going to make sure we’re doing right by the Tri-Cities community and Hanford workers. It was the sacrifice of this community that helped us win WWII and the cold war, so the federal government has a moral and legal obligation to clean up Hanford.” ■



EM’s Office of River Protection and tank operations contractor Washington River Protection Solutions continue to enhance safety in the Hanford Site’s Tank Farms with the completion of a new exhauster ventilation system in the SY Tank Farm. All six of Hanford’s double-shell-tank farms are now ventilated by upgraded exhauster systems.

OFFICE OF ENVIRONMENTAL MANAGEMENT

ALL HANFORD DOUBLE-SHELL-TANK FARMS NOW EQUIPPED WITH UPGRADED VENTILATION SYSTEMS

The EM Office of River Protection (ORP) and tank operations contractor Washington River Protection Solutions (WRPS) recently began operating a new exhauster ventilation system installed in the SY Tank Farm at the Hanford Site.

The new system replaces the old exhauster ventilation system that had reached the end of its design life.

With the completion of the installation of the new system at the SY Tank Farm, all six of Hanford’s double-shell-tank farms, consisting of 28 tanks, now have upgraded exhauster ventilation systems.

The systems work by continuously drawing air from a waste tank, separating moisture and radioactive particles, then sending filtered air through exhaust stacks into the atmosphere. The systems protect workers by dispersing high-efficiency particulate air (HEPA) above the breathing space of workers. They also prevent the buildup of flammable gases in the tanks.

“DOE and the contractor share a steadfast commitment to safety as we reduce risk to the environment posed by 56 million gallons of waste stored in our large underground tanks,” said Delmar Noyes, EM assistant manager for Tank Farms. “The new SY Tank Farm system is much more reliable and effective than the previous system, which will help ensure continued safe operations in the farm for decades.”

CONTINUED ON PAGE 7

“UPGRADED VENTILATION SYSTEMS” – CONTINUED (PAGE 6)

SY Tank Farm is made up of three double-shell tanks built between 1974 and 1976, and the 1-million-gallon-capacity tanks began receiving waste in 1977. The tank farm is still in service and will support future retrievals and waste transfers from single-shell tanks in the western portion of a 10-square-mile industrial area known as the Central Plateau.

The SY Tank Farm project involved installing two new ventilation fans and a pair of 40-foot stacks. Workers then tied into the existing ventilation ductwork.

Tim Moberg, the project's lead engineer for WRPS, said the project team used lessons learned from the installation of previous ventilation systems in Hanford's double-shell-tank farms in the new system's design.

“The SY ventilation system has state-of-the-art components and a remotely operated control system that allows operators

to check the status of all equipment in real time,” Moberg said. “Another major benefit is the new system will require fewer entries into the tank farm for both operations and maintenance personnel.”

Moberg, who was part of the project team for the installation and upgrades at each of Hanford's other double-shell-tank farms, said the team faced several challenges that were addressed through collaboration.

“We had to design around a lot of underground interferences and tie into old electrical systems and existing ventilation lines,” he said. “Teamwork was key to the project's success. We had excellent communication and collaboration between DOE and our construction, maintenance, engineering, radiological controls, industrial hygiene and safety teams.” ■

A SAFER SOLUTION: RADIOACTIVE CAPSULE TRANSFER PROJECT AT HANFORD MOVING FORWARD

OFFICE OF ENVIRONMENTAL MANAGEMENT

Preparations are well underway to transfer nearly 2,000 highly radioactive capsules from the Waste Encapsulation and Storage Facility (WESF) to interim dry storage at the Hanford Site.

Over the past several months, workers with EM Richland Operations Office (RL) contractor Central Plateau Cleanup Company (CPCCo) completed a number of modifications to the facility needed to install a system that will move the capsules from the underwater basin, into dry-storage casks, onto trucks and into a new storage area close to the facility.

Last fall, crews completed final construction activities at the dry-storage area. Additional upgrades are needed at WESF's truck transfer area to enable the half-mile trip to the dry-storage concrete pad.



Workers recently installed manipulator equipment at a full-scale mock-up of areas of the Hanford Site's Waste Encapsulation and Storage Facility that will be used to move nearly 2,000 radioactive capsules from underwater storage, into steel and concrete casks and loaded onto a truck for a short trip to a secured storage area near the facility.

The 1,936 capsules have been stored in an underwater basin at WESF since the mid-1970s. Cesium and strontium were removed from Hanford waste tanks to reduce the internal temperature. While the capsules are currently in safe storage in the underwater basin, moving them to dry storage eliminates a longer-term risk of a radioactive release in the unlikely event of a loss of water from the basin during a larger-than-expected earthquake.

“A SAFER SOLUTION” – CONTINUED (PAGE 7)



Jason Beaver and Pedro Ramirez with EM Richland Operations Office contractor Central Plateau Cleanup Company construct wooden forms for a new concrete pad outside the Waste Encapsulation and Storage Facility where trucks will pick up casks filled with radioactive capsules for the short trip to a nearby dry-storage area.

Check out [this animation](#) to learn more about the capsule transfer process.

“We’re encouraged by the pace of progress on this critical risk-reduction project,” said Gary Pyles, RL project manager. “Transferring the capsules to the new dry-storage pad will not only enable the planned deactivation of the aging WESF facility, but also save as much as \$6 million in annual operating costs.”

Progress also continues at a full-scale mock-up about 15 miles south of WESF at Hanford’s Maintenance and Storage Facility. It is designed to replicate the areas of WESF that the capsules will be moved through while transferring them into dry-storage

casks and putting the casks on trucks. The mock-up includes a replica shielded hot cell, an operating “canyon,” and a truck loading area. It is designed to look and feel exactly like the real thing, so workers can test and practice to get comfortable with the system before going live in the WESF facility.

Mock-ups are used extensively at Hanford to allow workers to safely train, test equipment and develop procedures before performing the work in a contaminated environment. The use of mock-ups has been proven to reduce potential worker exposures to hazards in radiological zones and significantly reduce the potential for delays during the fieldwork due to modifying procedures, processes or equipment.

Workers at the mock-up recently installed four mechanical manipulators that are part of a system that will transfer the underwater capsules from the basin to stainless-steel-and-concrete casks for transfer to the new storage area.

Fabrication of other capsule transfer test equipment is almost complete, with the system components expected to arrive at the mock-up for installation and testing this spring.

“There has been a ton of activity going on at WESF, the mock-up and at our offsite equipment fabricators this fall and winter,” said Mark Buckmaster, CPCCo capsule transfer project manager. “Our talented teams are making terrific progress on all fronts to prepare to safely move these capsules into dry storage. We’re excited to keep moving forward on one of Hanford’s priority risk-reduction projects.” ■

“FINISH HANFORD NUCLEAR WASTE CLEANUP” – CONTINUED (PAGE 3)

projections. Under the high range estimate of \$641 billion, spending would be at least \$6 billion a year from 2023 through about 2068.

PEAK SPENDING

Peak spending under that projection would be more than \$16 billion a year in about 2059. Much of the remaining cost will be for tank waste from emptying tanks through treating the waste for disposal. Under the low estimate, \$219 billion of the \$300 billion cost would be related to tank waste. The remainder of Hanford work — ranging from basic operations of the site to

tearing down contaminated buildings — could still cost more than \$2 billion in the peak year of about 2033.

The report now has been sent for review to the Washington state Department of Ecology and the Environmental Protection Agency, both regulators of the Hanford site. A 60-day public comment period on the report will begin on Feb. 15. Feedback can be emailed to lcssc@rl.gov, according to the report, which DOE has not yet posted on its website. The public comments will be considered as DOE drafts the next Hanford lifecycle report to be released in 2025. ■

SEVENTH HANFORD REACTOR BUILDING “COCOON” FOUNDATION TAKING SHAPE

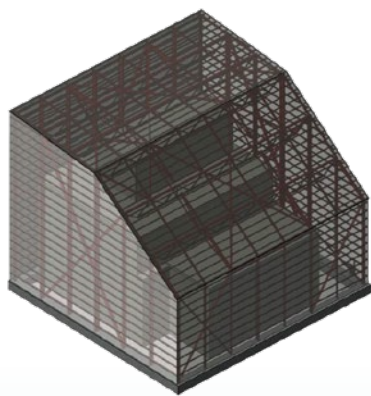
OFFICE OF ENVIRONMENTAL MANAGEMENT

The Richland Operations Office (RL) and cleanup contractor Central Plateau Cleanup Company (CPCCo) are off to a strong start on one of EM’s key construction priorities for 2022, with workers preparing to safely enclose, or “cocoon,” the seventh of nine former reactors on the Hanford Site.

Watch [this video](#) for more on this critical construction project.

Crews have completed backfilling and compacting the area around the former K East Reactor with approximately 34,000 cubic yards of a sand and gravel mixture. This month, workers began pouring a 6-foot-thick concrete foundation to support construction of a massive steel structure over the reactor building. The foundation will be completed in multiple pours over the next month. The steel enclosure is designed to protect the reactor building while the radioactivity in the reactor core decays over the next several decades, making it safer and easier to complete disposition of the reactor in the future.

“A mild winter has allowed us to make excellent progress on this critical risk-reduction project,” said Mark French, RL Division director for Hanford’s Central Plateau Cleanup Project. “Placing the K East Reactor in interim safe storage is a key component of our mission to complete cleanup along the Columbia River.”



An artist’s rendering of the K East Reactor safe-storage enclosure. K East will be the seventh of Hanford’s nine former reactors to be placed in interim safe storage.

“It’s exciting to see this project really starting to take shape,” said Travis Creach, CPCCo construction manager. “We expect to complete the foundation in March, with work on the enclosure set to begin this spring.”



Workers with EM contractor Central Plateau Cleanup Company pour concrete for a 6-foot-thick foundation to support a massive steel structure over the former K East Reactor building. The enclosure is designed to protect the building while the radioactivity in the reactor core decays over the next several decades, making it safer and easier to complete disposition of the reactor in the future. The project is one of EM’s top construction priorities for 2022.

The K East Reactor operated from 1955 to 1971 and will be the seventh of Hanford’s nine former reactors to be placed in interim safe storage. The K West Reactor will be the eighth. The ninth Hanford reactor, the B Reactor, is now a national historical landmark and part of the Manhattan Project National Historical Park.

The K East Reactor cocooning project is expected to be complete by the end of the year. ■

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TRI-CITY HIGH SCHOOL STUDENT'S HANFORD DOCUMENTARY PREMIERES ON THE BIG SCREEN

SHARED
FROM THE
TRI-CITY
HERALD



Augustin Dulauroy courtesy Pindare Films

A Tri-Cities filmmaker had the premiere of his first feature-length documentary at Fairchild Cinemas in Richland in February, with showings extending through March 2022. He is 17 and the president of the Hanford High Video Production Club.

Augustin Dulauroy has been making short videos with friends since middle school and had a short film he directed selected for the All American Film Festival in New York last fall. But he wanted to try making a documentary after he worked as sound engineer and videographer for a documentary on the Le Mans sports car race in France. It was written and directed by his mother, Virginie Dulauroy.

"After a little thinking I realized that the perfect documentary topic was where I live," Dulauroy said.

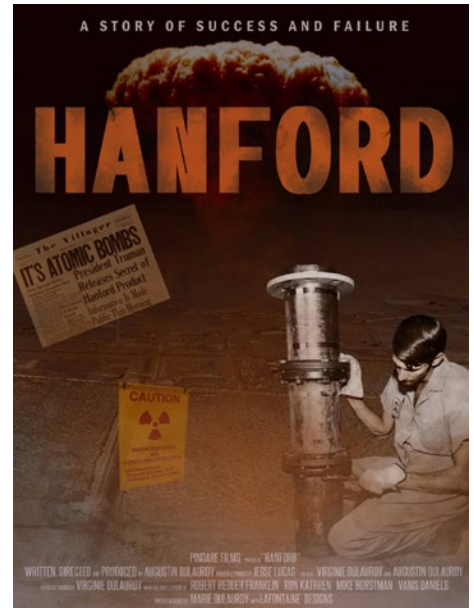
The result is the 52-minute documentary "Hanford," billed as a story of success and failure. During World War II, workers at the Hanford site in Eastern Washington raced to produce the plutonium for the atomic bomb dropped on Nagasaki, Japan, helping to end the war. But plutonium production then and through the Cold War at the nuclear reservation adjoining Richland came at a cost.

Settlers and Native Americans were forced from their land. Radiation sickened some people. And \$2.5 billion is spent annually on environmental cleanup of the 580-square-mile site. Stories of secrecy at the nuclear reservation drew Dulauroy into the Hanford story, he said. He interviewed experts on Hanford

like Robert Franklin, president of the B Reactor Museum Association and professor at Washington State University Tri-Cities, and health physicist Ron Kathren, the first professor emeritus for WSU Tri-Cities.

Dulauroy said he looked for untold stories about Hanford, or at least stories that are little known outside the Tri-Cities.

The film premiered Feb. 28 at Fairchild Cinemas in Richland. In the next two days it sold out with more screenings shown every day. It can still be seen in the Tri-Cities, with screenings set Wednesday and Thursday afternoons and evenings at the Southgate Fairchild Cinemas in Kennewick.



The documentary "Hanford" premiered Feb. 28 at Fairchild Cinemas in Richland.

The documentary was also released on Amazon Prime Video USA on March 2 and on Vimeo-On-Demand Worldwide March 3. Dulauroy says he'd like a career as a filmmaker. But knowing that is a tough field to break into, he plans to keep his options open when he graduates from Hanford High this spring. He's also interested in science and history, he said. ■

HANFORD COMMUNITIES

SPRING 2022 NEWSLETTER

RICHLAND • WEST RICHLAND • KENNEWICK • PASCO • FRANKLIN COUNTY • BENTON COUNTY • PORT OF BENTON



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FEATURED



'UNPRECEDENTED.' WHITE HOUSE CHANGES HANFORD SPENDING REQUEST TO CONGRESS

Tri-City Herald | Published June 8, 2022 | By Annette Cary, senior staff writer

The Biden administration has revised its budget request for the Hanford nuclear reservation to boost funding in an unprecedented step by the White House for the site.

Sen. Patty Murray, D-Wash., had repeatedly urged in public and private conversations with the administration that the federal government fully fund environmental cleanup of the 580-square-mile site in Eastern Washington.

It was used from World War II through the Cold War to produce nearly two-thirds of the plutonium for the nation's nuclear weapons program, leaving behind millions of gallons of radioactive waste and contaminated buildings, soil, debris and groundwater.

The Biden administration this week amended its request to Congress for Hanford funding in fiscal 2023 to boost its proposed budget by about \$191 million to just over \$2.6 billion. When the administration released its budget request for Hanford for the next fiscal year in late March it had proposed a cut from current spending of \$172 million.

> Read the full story on Tri-City Herald's website by clicking [HERE](#)

GOV. INSLEE SAYS WHITE HOUSE MUST DO MORE TO AVOID RADIOACTIVE ‘CALAMITY’ AT HANFORD

Tri-City Herald Published May 29, 2022 | By Annette Cary, senior staff writer



Governor Inslee inside Hanford's sample waste tank with WRPS chief engineer Karthik Subramanian.

In a worst case scenario, environmental cleanup of the Hanford nuclear reservation might not be completed for another 150 years, or possibly never, said Washington Gov. Jay Inslee. He warned the new director of the Office of Management and Budget at the Biden White House that Hanford site budgets need to be far higher to avoid disaster, meet legal obligations and prevent the nuclear reservation cleanup from continuing until as late as 2178, if not longer.

“As the earliest possible date for cleanup continues to extend farther into the future, the harms to the surrounding communities and the danger of catastrophic impacts to the Pacific Northwest are occurring right now,” Inslee, a Democrat, said in a May 23 letter to OMB Director Shalanda Young.

He pointed out that Hanford’s 149 single-shell tanks holding radioactive waste underground are between 58 and 78 years old. That’s far beyond the 20 to 30 years they were designed to safely hold waste safe groundwater that moves toward the Columbia River.

At least two of the Hanford tanks are known to be currently leaking radioactive and other hazardous waste into the ground. Five years ago, a tunnel storing highly contaminated equipment partially collapsed and the collapse of a parallel waste storage tunnel was averted at great expense two years later, he said.

“Each year that we delay compliant investment in Hanford Site cleanup, we must spend more to shore up failing infrastructure against immediate calamity,” Inslee said.

> Read the full story on Tri-City Herald’s website [HERE](#) 

HISTORIC EASTERN WA NUCLEAR REACTOR REOPENS FOR PUBLIC TOURS AT HANFORD

Tri-City Herald Published May 17, 2022 | By Annette Cary, senior staff writer

The public can once again step inside the world’s first production-scale nuclear reactor, a facility that launched the atomic age. The Department of Energy is resuming free public tours of the historic B Reactor, part of the Manhattan Project National Historic Park at the Hanford site near Richland in eastern Washington.

Tours had been closed for two years during the COVID-19 pandemic. Registration is now open for tours beginning May 26 and continuing through November. Tours will be offered six days a week during the summer and on Memorial Day, Independence Day and Labor Day weekends.

> Read the full story on Tri-City Herald’s website [HERE](#) 



ECOLOGY DIRECTOR PUSHES FOR HANFORD FUNDING IN D.C. VISIT



Shared from U.S. Department of Ecology, March 21, 2022 | By Andrew Wineke, Communications Department

WASHINGTON, D.C. – Washington Department of Ecology Director Laura Watson visited the nation’s capital last week, urging the federal government to adequately fund cleanup of the most contaminated nuclear site in the nation.

Ecology estimates more than \$7 billion is required to keep Hanford Site cleanup on track for the next two years. This includes a budget of \$3.35 billion in fiscal year 2023 and another \$3.76 billion in 2024. While Watson was in Washington, D.C., President Joe Biden signed a \$2.7 billion appropriation for Hanford cleanup in 2022 - a record amount for the work.

“Senator Murray, Senator Cantwell and our champions in the House are working hard to deliver the funding we need to keep cleanup work at Hanford on track,” Watson said. “But the fact that the record funding for this budget still falls hundreds of millions below what is needed demonstrates the challenges ahead of us.”

Washington Gov. Jay Inslee praised the progress Congress made in the 2022 budget for Hanford, but cautioned that cleanup costs will grow without greater commitments in the years ahead.

“Without significant increases in funding in future budgets, we will continue to see delays in progress, heightened environmental risk, and it will ultimately require billions more in cleanup costs,” Inslee said.

From World War II through the Cold War, the Hanford Site produced more than 67 tons of plutonium – and untold millions

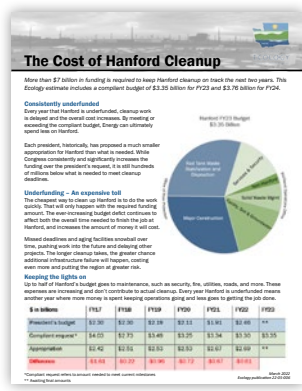
of tons of related radioactive and hazardous waste. When plutonium production ceased in 1989, the site’s mission shifted to cleaning up the massive amounts of waste and contamination our nation’s nuclear effort left behind.

While the federal government has long acknowledged its responsibility for cleaning up that toxic legacy and made legal commitments to do so in the Tri Party Agreement, presidential administrations of both parties have failed to request sufficient funding to keep the work on schedule, putting the onus on Congress to increase funding to meet the need.

As the state agency charged with overseeing the Department of Energy’s cleanup work in Hanford, the Washington Department of Ecology pushes the federal government to meet its commitments. In Washington, D.C., last week, Ecology Director Watson met with representatives from several federal agencies, elected officials, and officials from the Biden administration. Watson was joined by David Bowen, Ecology’s Nuclear Waste program manager.

Watson and Bowen shared five alternatives from the Department of Energy’s Analysis of Alternatives, a document detailing 18 cleanup scenario alternatives for tank waste treatment, including the estimated lifecycle cost and timeline to finish cleanup for each.

Although grouting the waste in the tanks – meaning filling them with a concrete-like mixture – is sometimes touted as a cheaper and faster way to clean up Hanford’s tank waste, Energy’s analysis demonstrates that grouting is not the fastest or least expensive option. No matter what scenario is selected, the analysis shows that Hanford funding needs to be significantly increased in order for Energy to complete the cleanup by the end of this century. ■



Click to see Ecology’s “The Cost of Hanford Cleanup” budget breakdown.

> To read the original article from Ecology, click [HERE](#)





Florida International University research scientists Mackenson Telusma, left, and Anthony Abrahao deploy a pipe crawler during a field test at the Hanford Site.

HANFORD COLLABORATES WITH UNIVERSITIES ON ROBOTS TO EVALUATE TANK INTEGRITY

OFFICE OF ENVIRONMENTAL MANAGEMENT

Contributors: Jenna Kochenauer,
Leonel Lagos, Daniel Martin

RICHLAND, Wash. – Robot technology is providing new ways to monitor the integrity of underground double-shell waste-storage tanks at the Hanford Site.

Under a cooperative agreement with DOE, Florida International University (FIU) recently worked with EM Office of River Protection (ORP) tank operations contractor Washington River Protection Solutions (WRPS) to test a miniature magnetic rover, deploying it at a tank in the site's AP Tank Farm.

"It is always great to see the research that the students have been performing successfully deployed in the field," said Genia McKinley, program manager for the DOE-FIU Cooperative Agreement. "It shows the capabilities of our students and the payoff for their hard work in real time."

The rover underwent rigorous testing at FIU, followed by a final demonstration at a vendor facility in Richland, Washington. The demonstration showcased the abilities of the device and allowed field crews to familiarize themselves with the rover before deploying it over 50 feet deep into air cooling slots in the bottom of the tank.

Crews directed the rover as it shot video of both steel shells of Tank AP-105. The contractor's tank integrity team will use the footage in their assessment of the structural integrity of the inner shell.

"We get excited about these kinds of projects," said Glenn Soon, operations specialist with WRPS. "The university's team worked with us to create this reliable, first-of-a-kind solution for tank inspections. Reaching the point of deploying the mini rover

successfully has been very rewarding, and the rover shows a lot of promise for use in our tank integrity monitoring program."

The mini rover was one of two technologies FIU recently tested at Hanford. The second is a robot called a pipe crawler. It was designed to travel through pipes underneath waste tanks, using air pressure rather than a motor. For the demonstration, the

crawler was outfitted with a mock-up radiation scanner unit to simulate future measurements of gamma radiation and a camera to shoot footage for visual inspections.

"We had initially designed this crawler to clean transfer lines, and when we learned that WRPS was looking for a way to survey underground pipes, we retrofitted the design for single-shell tank lateral gamma detection," said Anthony Abrahao, FIU research scientist. "Students were highly involved in designing and building the crawler. They created pieces of the crawler with a 3D printer and collaborated with students at a university near Hanford to develop a system to deploy the crawler."

A group of five interns at Washington State University's (WSU) Tri-Cities campus in Richland designed a cable management system to retrieve the crawler once it completes scanning inside the pipes. The FIU team gave the WSU team



The lead segment of a pipe crawler is equipped with a camera, mock-up radiation scanner and other sensors. A 3D printer was used to help build the crawler.

"HANFORD COLLABORATES" – CONTINUED



A mini crawler, developed by Florida International University students and faculty, moves along the outside of the inner tank shell on a double-shell waste-storage tank at the Hanford Site.

design specifications to allow the two systems to work together, and the

WSU team came up with a reel that could automatically deploy the crawler at regular intervals without human involvement.

"This was such a unique learning opportunity," said Misty Lace, a WSU mechanical engineering student. "All seniors have to work on a project, but we were one of the only groups that got to build something with a real-world application, coordinate our design with students on the other side of the country and then come together to test it."

FIU DOE Fellow Jeff Natividad had roles in creating and testing both robots during back-to-back internships with WRPS at Hanford.

"I love robotics, but I hadn't considered that it could apply to an environmental remediation task like this," Natividad said. "I would like to see more students get involved in this kind of project so they can better understand the nuclear industry and the cool career opportunities that are available." ■

SOIL FLUSHING SYSTEM TO ACCELERATE HANFORD GROUNDWATER CLEANUP

OFFICE OF ENVIRONMENTAL MANAGEMENT
Contributor: Dieter Bohrmann

RICHLAND, Wash. – EM Richland Operations Office (RL) contractor Central Plateau Cleanup Company (CPCCo) is preparing to employ an innovative treatment system at the Hanford Site to speed up the removal of contamination in the soil near the Columbia River. The system is installed on a half-acre area near the former K East Reactor. It is designed to remove hexavalent chromium, a hazardous chemical added to cooling water to inhibit corrosion in Hanford's reactors. During Cold War operations, some of the chromium was spilled or leaked to the soil.

Groundwater treatment facilities have reduced the area of chromium contamination by more than 75% since 2010, but some contamination remains in the soil above the water table, making it difficult to remove.

The new system works by using up to 225 gallons of clean water per minute to force — or flush — chromium contamination in the soil down to the groundwater, where it will be extracted through a network of existing wells and sent to a nearby treatment facility, accelerating the cleanup process.



EM contractor Central Plateau Cleanup Company is implementing a new soil flushing system near the Hanford Site's former K East Reactor. The system forces residual chromium contamination in the soil down to groundwater, where it will be extracted through a network of existing wells and sent to a nearby treatment facility.

"We are always seeking more thoughtful and cost-effective ways to improve the performance of our groundwater treatment network," said Ellwood Glossbrenner, RL project lead for cleanup of soil and groundwater at Hanford. "The protection of the Columbia River is our ultimate goal, and this soil treatment system is a great example of how we are achieving our goal."

The flushing system is expected to start this summer.

"I'm proud of our team for successfully implementing this enhancement to our groundwater remedy," said Emily Macdonald, CPCCo project manager. "Removing this hard-to-reach contamination is a win for the environment and gets us one step closer to completing cleanup along the river."

Collectively, Hanford's treatment systems have removed about 600 tons of contaminants over the life of the groundwater cleanup mission. Most of the chromium contamination in the soil and groundwater along the Columbia River has been removed, as well as other contaminants of concern such as carbon tetrachloride, technetium-99 and uranium. ■



OFFICE OF ENVIRONMENTAL MANAGEMENT

Members of the Hanford Waste Treatment and Immobilization Plant commissioning organization are pictured in front of the Effluent Management Facility. From left are Jeffrey Peterson, John Reyff, Scott Hennick, Jeffrey Blosil, Tyson Warner, Lance Pappas and Pat Mohondro.

HANFORD ACHIEVES FIRST TEST TRANSFER BETWEEN TANK WASTE TREATMENT SUPPORT FACILITIES

RICHLAND, Wash. – Hanford Site crews recently completed the first transfer of test water from the Waste Treatment and Immobilization Plant's (WTP) Effluent Management Facility (EMF) to the nearby Liquid Effluent Retention Facility (LERF).

The transfer of 6,000 gallons was the first simulation of the process that will be used to treat secondary liquid waste from the plant's Low-Activity Waste (LAW) Facility during Direct-Feed Low-Activity Waste (DFLAW) Program operations to treat tank waste.

"This is a tremendous accomplishment that culminates years of work by our team and alumni toward being ready for hot commissioning," said Valerie McCain, project director and senior vice president for EM Office of River Protection contractor Bechtel National, Inc. "It's an important step for the entire Hanford team and our collective mission of protecting the Columbia River and its shoreline communities."

To demonstrate the transfer, WTP crews inside the LAW Facility control room started a delivery sequence, and crews with tank operations contractor Washington River Protection Solutions (WRPS) began their acceptance protocols at the LERF. These steps released the test water from the EMF, allowing it to travel through underground transfer lines to the LERF.

"Testing like this gives us a chance to ensure our people and procedures are ready to operate safely and efficiently, and are integrated," said Wes Bryan, WRPS president and project manager. "It demonstrates not only that the equipment works, but also how the teams work together to get one step closer to treating tank waste through DFLAW."

During vitrification — the process of immobilizing tank waste in glass — secondary liquid, called effluent, will be generated by the LAW Facility, the Analytical Laboratory, and

when transfer pipes are flushed. The effluent is fed to the EMF, where excess water is boiled away. The water is then piped into holding vessels, where testing ensures it meets waste-acceptance criteria before transfer to the LERF. The remaining waste concentrate is returned to the LAW Facility for treatment.

During full operations, the LAW Facility is designed to vitrify up to 5,000 gallons of low-activity waste per day, equal to 1.75 million gallons per year. ■



During Hanford's Direct-Feed Low-Activity Waste Program treatment operations, the Waste Treatment and Immobilization Plant, background, will feed liquid waste to the Liquid Effluent Retention Facility, foreground, through this primary transfer line.

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HANFORD MAKES TANK WASTE RETRIEVAL PROGRESS AT A/AX COMPLEX

OFFICE OF ENVIRONMENTAL MANAGEMENT

Contributor: Mark McKenna



Waste retrieval from Tank AX-101, the last of four tanks to be retrieved in the Hanford Site's AX Farm, is set to begin this fall. This in-tank photo shows the salt-based waste and the tank's 22 air-lift circulators.

RICHLAND, Wash. – Tank by tank, batch by batch, the EM Office of River Protection (ORP) and tank operations contractor Washington River Protection Solutions (WRPS) are reducing risk to the environment by retrieving waste from the Hanford Site's single-shell waste-storage tanks.

Less than five years after completing retrieval of waste in the last tank in the C Tank Farm, crews have completed field retrieval operations at three of the four tanks in AX Farm and are now installing retrieval equipment in the fourth, Tank AX-101. All the while, the team is implementing new tools and techniques to streamline the retrieval process and enhance safety.

"Moving waste from older single-shell tanks to newer double-shell tanks ensures continued safe storage until we send the waste to the Waste Treatment and Immobilization Plant for vitrification, or immobilization in glass," said Delmar Noyes, ORP assistant manager for Tank Farms.

Tank AX-102 was the first tank to be retrieved in AX Farm. The tank is Hanford's 18th single-shell tank to be retrieved. While field operations in Tanks AX-103 and AX-104 are complete, the tanks are still in the technical review process that is required before they can be added to the list of retrieved tanks.

Most recently, workers installed the first of three extended-reach sluicers in Tank AX-101 that will be used for waste retrieval. The sluicers break up and mobilize solid waste in the tank.

The retrieval plan is to use sluicing and high-pressure water technologies to remove approximately 320,000 gallons of salt-based waste and transfer the waste in batches to a double-shell tank for continued safe storage. Retrieval operations are scheduled to begin at Tank AX-101 this fall.

"We're making tremendous progress in retrieving tank waste," said Dave Carlile, who manages retrieval operations for WRPS. "We've got a talented team that demonstrates excellent teamwork and communication with a focus on doing the work safely. We use lessons learned from each retrieval project to develop plans for the next tank, and we improve our ability to anticipate and troubleshoot any issues we face along the way."

While AX-Farm retrieval activities progress, workers continue to install the infrastructure to support future retrieval operations in A Farm, the next tank farm to be retrieved. Crews are hand-digging trenches and installing electrical systems.

Some of the most hazardous work is preparing tank pits for installation of retrieval equipment, such as pumps and sluicers, and associated equipment. The pits are located above tanks and provide access to the tank, pumps and monitoring equipment. Before they can clean out old pits, some of which have not been entered in 40 years, crews must remove old concrete covers. The crews perform video inspections and collect in-pit radiation level measurements to safely remove the large covers and allow workers to begin cleanout activities.

"In many cases, we don't have good notes on the tank's operational history, so we take a deliberate approach when entering tank pits to ensure worker safety," said Gary Hopkins, construction



Crews safely remove legacy equipment from the Hanford Site's A Farm to prepare for future waste retrievals.

manager for the WRPS retrievals organization. "Oftentimes we run into situations where we need to develop and deploy special tools to remove old, contaminated equipment to allow for pit cleanouts."

Once removed by crane, the covers are packaged and shipped to the Environmental Restoration Disposal Facility, Hanford's engineered landfill for disposal of low-level radioactive waste. Temporary steel plates are installed to cover the pits to support construction work. During retrieval, the steel covers and shield boxes are used to protect workers from radiation. ■

HANFORD COMMUNITIES

SUMMER 2022 NEWSLETTER

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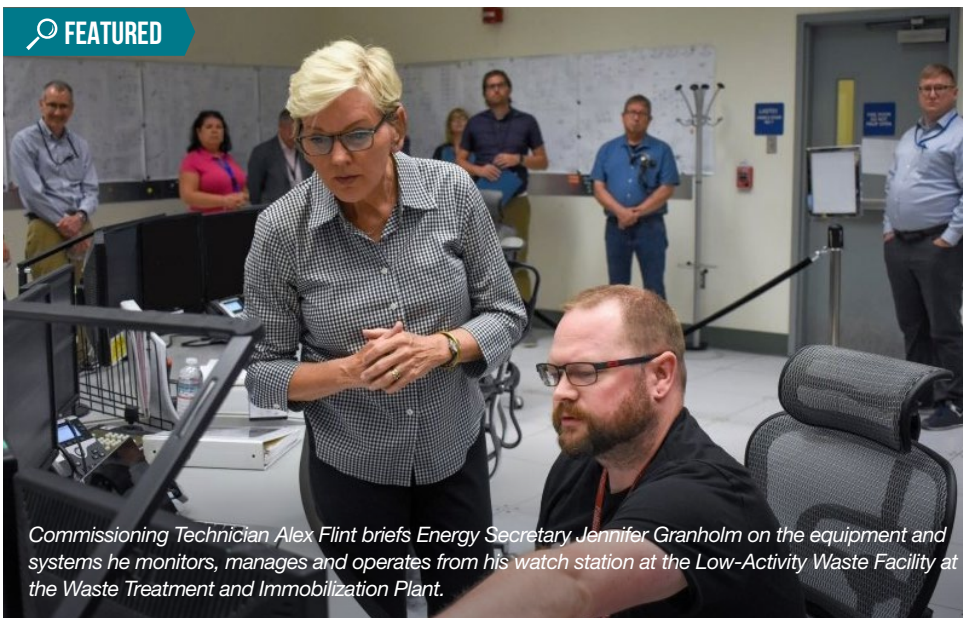


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FEATURED



Commissioning Technician Alex Flint briefs Energy Secretary Jennifer Granholm on the equipment and systems he monitors, manages and operates from his watch station at the Low-Activity Waste Facility at the Waste Treatment and Immobilization Plant.

SECRETARY GRANHOLM VIEWS HANFORD PROGRESS, DISCUSSES BRIGHT FUTURE FOR TRIBES, COMMUNITY

OFFICE OF ENVIRONMENTAL MANAGEMENT | Published August 16, 2022

RICHLAND, Wash. – During a visit to the Hanford Site last week, Energy Secretary Jennifer Granholm highlighted DOE's commitment to addressing the environmental legacy near communities such as the Tri-Cities, Washington, that supported national defense programs for many decades.

In addition to visiting cleanup projects underway at Hanford, Granholm met with area tribal leaders and participated in a community forum at DOE's Pacific Northwest National Laboratory.

"My first visit to Hanford provided me with a deeper appreciation for the magnitude of the mission as well as the considerable progress in cleaning up the environment and protecting workers, the community and the Columbia River," said Granholm.

In recognition of DOE's "safety first" approach to Hanford cleanup, Granholm's tour began at the Volpentest HAMMER Federal Training Center. A unique partnership that

> Continued on page 5

TWELVE AGENCIES AND ORGANIZATIONS CALL ON PRES. BIDEN TO INCREASE HANFORD FUNDING

At least \$3.76 billion in funding is needed in Fiscal Year 2024.



Hanford's B Tank farm under construction during World War II. There are a total of 177 single-shell and double-shell tanks at Hanford, well past their design life and holding 56 million gallons of radioactive and chemical waste.

RICHLAND – The states of Washington and Oregon, and a coalition of organizations, joined together to send a letter to President Joe Biden Tuesday calling for increased funding at the Hanford Nuclear Reservation.

The letter asks Pres. Biden and Congress to request and allocate adequate funding for Hanford now and in years to come, starting with \$3.76 billion in Fiscal Year 2024.

Signees of the letter include Washington Gov. Jay Inslee, Oregon Gov. Kate Brown, Confederated Tribes of the Umatilla Indian Reservation, Washington Department of Ecology, Washington State Commission on Hispanic Affairs, Tri-Cities Development Council, Tri-Cities Hispanic Chamber of Commerce, Hanford Communities, Hanford Challenge, Columbia Riverkeeper, Central Washington Building Trades Council, and the UA Local Union 598 Plumbers and Steamfitters.

The Confederated Tribes and Bands of the Yakama Nation also sent its own letter to Pres. Biden Tuesday.

The Hanford Site in southeast Washington State produced two-thirds of the nation's plutonium stockpile during World War II and the Cold War, leaving behind one of the most contaminated nuclear cleanup sites in the world.

Continued underfunding at Hanford will exponentially balloon the overall cost of cleanup, delay work by decades, and increase the risk of a catastrophic infrastructure failure or release of contamination.

To read the full letter, see Ecology's news release [HERE](#).

ENERGY SECRETARY AGREES TRI-CITIES ASSETS 'IRRESISTIBLE' FOR GROWING A CLEAN ENERGY HUB

Tri-City Herald Published August 14, 2022 | By Annette Cary, senior staff writer

Richland, WA – The Tri-Cities is well positioned to move from "cleanup to clean energy," said Energy Secretary Jennifer Granholm on her first visit to the Tri-Cities.

Leaders representing Tri-Cities economic and other interests pitched the concept to her at a roundtable discussion, with their message bolstered by Granholm's tours of the Hanford site and Pacific Northwest National Laboratory in Richland Thursday and Friday.

Tri-Cities residents have always been good at innovating, said David Reeploeg, vice president of federal programs for the Tri-City Development Council during the discussion.

Hanford's historic B Reactor ushering in the atomic age was followed by such projects as the first detection of gravitational waves at the Laser Interferometer Gravitational-Wave Observatory, LIGO, on Hanford land and PNNL's frequent advancements in science and technology developed, said Tri-Cities leaders.

The next step, they said, is using the assets — including those developed at Hanford, where PNNL got its start — to transition from Hanford environmental cleanup to expand the Tri-Cities' role as a clean energy hub.

> Read the full story on Tri-City Herald's website [HERE](#)



Vit Plant electrician Edi Sanchez assembles temporary heaters that will start up the first melter inside the plant's Low-Activity Waste Facility at the Hanford Site.

VIT PLANT PREPARES FOR MELTER HEATUP, BEGINS INSTALLING STARTUP HEATERS

BECHTEL NATIONAL, INC | Published August 3, 2022

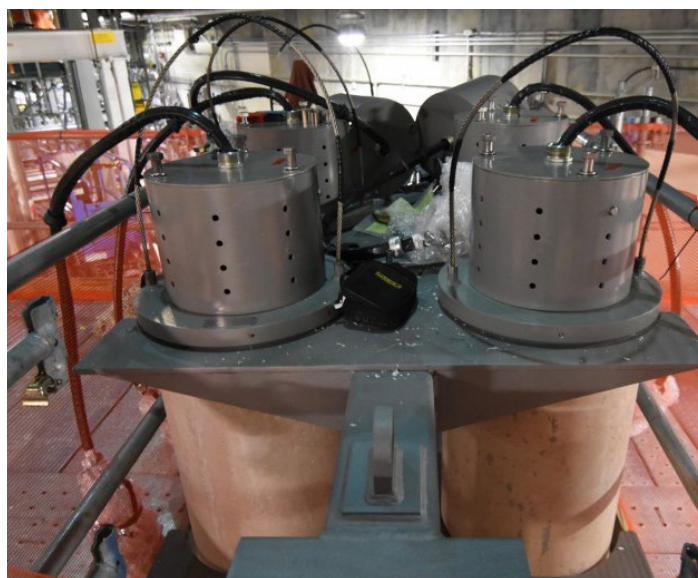
The weather isn't the only thing heating up at the Hanford Site this summer, as staff at the Low-Activity Waste (LAW) Facility at the Vit Plant are preparing to install 18 temporary heaters to start up the first of the facility's two 300-ton glass melters.

The startup heaters will be installed through ports in the lid of the melter and will raise the melter's internal operating temperature to 2,100 degrees Fahrenheit — hot enough to sustain the pool of molten glass to be used to start the waste vitrification process.

"This is an exciting and important step for our team as we drive toward melter heatup," said Vit Plant Project Director Valerie McCain. "The melters are the heart of the Direct-Feed Low-Activity Waste (DFLAW) Program and bringing Melter 1 online is a significant milestone on our journey to begin treating tank waste."

Heating up the melter is a complex process, consisting of a series of activities to prepare for and establish the pool of molten glass. After the startup heaters raise the melter to operating temperature, small glass beads called frit will be added until the pool covers the heating electrodes inside the melter.

After melter heatup, the startup heaters will be removed and replaced with bubblers to mix the molten glass pool and help maintain an even temperature. Finally, more frit will be added to the melter to bring the pool up to operating level. The melter will then be ready to receive simulated materials to test the system before processing tank waste.



Temporary startup heaters rest in a storage rack as they are prepared for installation into a melter.

“The melters are the heart of the Direct-Feed Low-Activity Waste (DFLAW) Program and bringing Melter 1 online is a significant milestone on our journey to begin treating tank waste.”

During DFLAW operations, waste from Hanford's large underground tanks that has been treated to remove radioactive cesium and solids will be fed directly to the LAW Facility's melters. The waste and glass-forming materials will be mixed and heated in the melters, then poured into specially designed stainless-steel containers for permanent disposal at the site's Integrated Disposal Facility. ■



A look at the inside of B-109 in February 2021.

ECOLOGY AND ENERGY REACH AGREEMENT TO ADDRESS HANFORD'S LEAKING UNDERGROUND TANKS

WASHINGTON STATE DEPARTMENT OF ECOLOGY | Published August 25, 2022

RICHLAND – The Washington State Department of Ecology and the U.S. Department of Energy have agreed on a plan for how to respond to two underground tanks that are leaking radioactive waste as well as any future tank leaks at the Hanford Site.

Energy announced in April 2021, following a year-long leak assessment, that Tank B-109 is leaking waste into the surrounding soil. Tank T-111 was discovered to be leaking in 2013.

To address these environmental concerns, Ecology and Energy worked collaboratively and developed a legally binding Agreed Order.

“It’s been a priority for the state of Washington to address leaking tanks in way that protects nearby communities and the Columbia River,” said Ecology Director Laura Watson. “We know that ongoing vigilance and commitment will be needed to fully address these risks, but I appreciate the work put in by both teams to agree on a plan that prioritizes safety and environmental protection.”

“I appreciate the effective collaboration with the Ecology team in reaching an agreement that supports our continued focus on safe, efficient, and effective stewardship, treatment, and disposition of tank waste,” said Brian Vance, manager of the U.S. Department of Energy’s Office of River Protection and Richland Operations Office.

Under the agreed order, Energy will:

- Cover the T and B tank farms with surface barriers to prevent rain or snowmelt from seeping into the tanks, and to slow the migration of leaked waste toward the groundwater.
- Develop a response plan for future leaks from single-shell tanks.
- Evaluate the viability of installing a ventilation system to evaporate liquid waste in Tank B-109.
- Evaluate conditions in and around tanks B-109 and T-111 to determine if additional work is needed to prevent liquids from getting in.
- Explore ways to accelerate the schedule to retrieve waste from tanks T-111 and B-109.

As Ecology and Energy implement the new agreement, opportunities for public input during the permitting process include the following:

- The Single-Shell Tank System Leak Response Plan
- The leak response actions selected for implementation
- The Intrusion Response Work Plan for tanks T-111 and B-109 if deemed necessary
- The design of the interim surface barriers for T-Farm and B-Farm

The full Agreed Order and more information can be read on [Ecology’s Nuclear Waste Program website](#) or [Energy’s Hanford website](#). ■



“SECRETARY GRANHOLM” – CONTINUED

includes DOE, union leaders, contractors, tribes, the state of Washington and others, the center provides hands-on training to keep Hanford workers safe on the job. HAMMER stands for Hazardous Materials Management and Emergency Response.

Granholm visited key elements of the mission underway to treat radioactive and chemical waste stored in underground tanks at Hanford. Stops included the Low-Activity Waste Facility, where preparations are underway to begin heating up the first 300-ton melter that will vitrify, or immobilize in glass, tank waste once treatment operations begin; and the High-Level Waste Facility, where design and procurement work has resumed.

“This has been a valuable opportunity to get an up-close look at the facilities that will treat Hanford tank waste for disposal,” said Granholm. “This tour illustrated the progress that is possible with DOE and the state of Washington driving toward our shared goal of turning Hanford tank waste into glass via the Direct-Feed Low-Activity Waste Program.”

A key part of that program, the Tank-Side Cesium Removal System, has treated 390,000 gallons of tank waste so far this year. The treated waste will be fed to the Low-Activity Waste Facility when treatment operations begin.

Advancements in the tank waste cleanup mission coupled with progress in key risk-reduction efforts such as transferring radioactive capsules to dry storage, remediating a highly radioactive area under the 324 Building and treating contaminated groundwater, are leading to a safer Hanford Site.



Energy Secretary Jennifer Granholm is briefed by Tom Fletcher, EM assistant manager of the Waste Treatment and Immobilization Plant at the Hanford Site, in the control room of the Low-Activity Waste Facility on monitors that display the status of equipment and the facilities to technicians who manage the plant.

Before leaving the site, Granholm visited Hanford's historic B Reactor, which is part of the Manhattan Project National Historical Park. Granholm noted that the same determination and ingenuity it took to construct the first full-scale plutonium production reactor is demonstrated today by the men and women of Hanford who are cleaning up the environmental legacy of producing plutonium for national defense.

While in the Tri-Cities, Granholm participated in a dinner with leaders from the Confederated Tribes of the Umatilla Indian Reservation, the Nez Perce Tribal Nation, the Yakama Tribal Nation and the Wanapum Band of Indians.

“With a diverse community and tribal nations, the level of local expertise, knowledge and capabilities here in the Tri-Cities is unparalleled,” said Granholm. “DOE is committed to ensuring that those most affected by Hanford's environmental legacy have a voice as we look to the future. DOE will continue working with unions, tribal nations, the local community and the state of Washington to complete Hanford cleanup, as well as pave a path to a clean, safe and vibrant future.” ■

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HANFORD TANK WASTE EVAPORATOR GETS NEW TRANSFER LINES

RICHLAND, Wash. – As the Hanford Site gears up to treat tank waste for disposal through the Direct-Feed Low-Activity Waste (DFLAW) Program, workers are upgrading many site facilities to support 24/7 operations. One of those facilities is the 242-A Evaporator.

Field crews with EM Office of River Protection (ORP) tank operations contractor Washington River Protection Solutions (WRPS) recently finished installing about 1,300 feet of new waste transfer lines between the evaporator and a nearby tank storage area, called a tank farm.

Waste is pumped from the tank farm to the evaporator, which removes water to create more storage space in the site's double-shell tanks. EM and WRPS manage that capacity for retrieving waste from older single-shell tanks, another important component of the tank waste mission.

"These new transfer lines allow us to continue using the evaporator to strategically stage waste for treatment through DFLAW," said Ricky Bang, ORP Tank Farms Program Division director.

Design of the transfer line replacement project started in December 2018, but work stopped when COVID-19 hit in early 2020. Fieldwork began in October 2020 with the removal of older contaminated equipment at the tank farm that feeds chemical and radiological waste to the evaporator.

Turnover of the new waste transfer lines to operations is scheduled to be complete by early December, before the evaporator begins a series of tests using noncontaminated liquids, called "cold runs," over several months.

"We have a hardworking and dedicated team that has tackled the challenges of this project, knowing the critical roles the transfer lines and the evaporator play in the tank waste mission," said Dustin May, WRPS project manager.

The evaporator has also undergone a series of repairs and upgrades since June 2019. This includes a safety system



This aerial photo shows trenches dug for the replacement of approximately 1,300 feet of piping between the 242-A Evaporator and an adjacent tank waste storage area near the center of the Hanford Site.



Crews installed double-walled pipes on the Hanford Site as part of the project to replace older transfer lines between waste storage tanks and the 242-A Evaporator.

upgrade to increase the efficiency of equipment testing required prior to an evaporator campaign.

The evaporator has removed more than 81 million gallons of liquid from the site's tank waste volume over the past four decades. With these upgrades, the next campaign is scheduled to begin next year. ■

ADDITIONAL BASIN TO SUPPORT HANFORD TANK WASTE TREATMENT NEARLY COMPLETE

RICHLAND, Wash. – Workers are nearing completion of a fourth basin needed to ensure adequate storage for wastewater during tank waste treatment on the Hanford Site.

Crews with EM Office of River Protection tank operations contractor Washington River Protection Solutions (WRPS) have made significant progress on Basin 41 at the Liquid Effluent Retention Facility (LERF) since concrete was first poured for the perimeter one year ago.

Watch this time-lapse video of the LERF Basin 41 construction.

Liquid Effluent Retention Facility Basin 41 on the Hanford Site is one of four basins, each capable of holding nearly 8 million gallons of wastewater.



LERF stores wastewater generated from several site sources, including the 242-A Evaporator, which evaporates water from tank waste, solid waste disposal facilities and various site cleanup activities. The wastewater is eventually processed through the Effluent Treatment Facility, and treated water is sent to Hanford's State-Approved Land Disposal Site.

The fourth basin will add capacity to support treating additional wastewater generated when tank waste treatment begins. Each basin is roughly the length of a football field and nearly twice as wide, and can hold nearly 8 million gallons of wastewater.

"The LERF basins are an essential part of the Direct-Feed Low-Activity Waste Program to treat tank waste," said Bibek Tamang, EM LERF program manager. "Once started, the



The four retention basins at the Liquid Effluent Retention Facility on the Hanford Site, as seen in September 2021, at top, and July 2022, with the nearly completed Basin 41 on the far left.



Crews with Washington River Protection Solutions work on the second of two liner systems at Liquid Effluent Retention Facility Basin 41 on the Hanford Site.

Waste Treatment and Immobilization Plant (WTP) is expected to transfer an estimated 4.5 million gallons of wastewater a year to LERF, while the Integrated Disposal Facility will add another 1.3 million gallons annually."

The bottom of the basin has multiple liners on top of drainage gravel. Crews are installing a floating cover, which is resistant to chemicals, contamination, temperature extremes and ultraviolet light. Once the cover is in place, hardware will be installed around the perimeter to allow the floating cover to move as it floats on the surface of the stored wastewater.

"We understand the important role the LERF basins play in the tank waste treatment mission, and it gives the workforce great pride to safely deliver this project," said Scott Anderson, WRPS project manager.

Construction and operational testing will follow completion of fieldwork on the new basin this fall. ■

HANFORD COMMUNITIES

FALL HANFORD NEWS RECAP

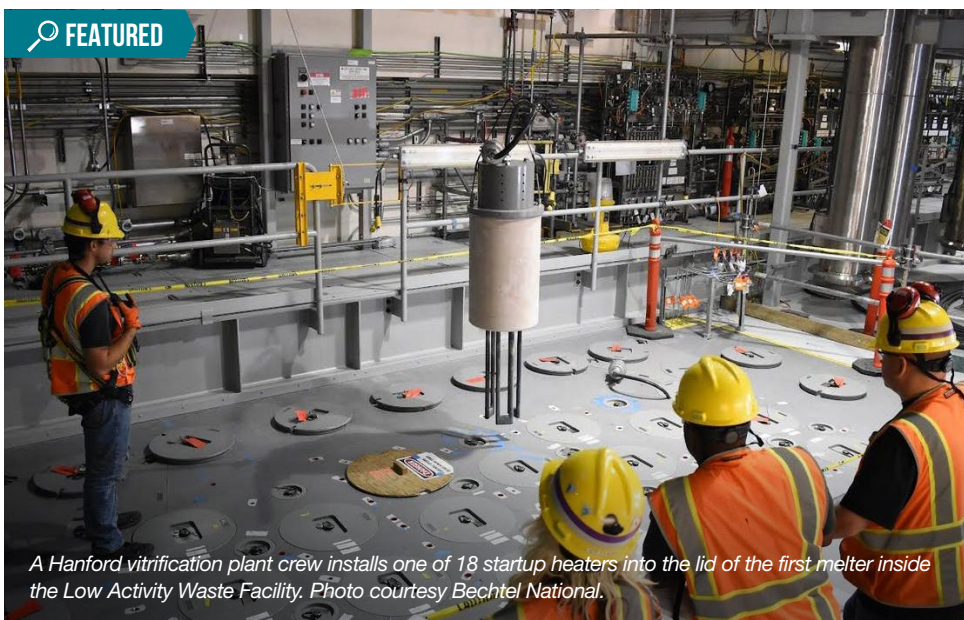
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FEATURED



A Hanford vitrification plant crew installs one of 18 startup heaters into the lid of the first melter inside the Low Activity Waste Facility. Photo courtesy Bechtel National.

WORLD'S LARGEST RADIOACTIVE WASTE MELTER HALTED IN EASTERN WA, IT WAS OVERHEATING

Tri-City Herald | Published October 20, 2022 | By Annette Cary, senior staff writer

The heat up of world's largest radioactive waste melter at the Hanford site vitrification plant in Eastern Washington has not started as hoped. The melter temperature was expected to climb to 2,100 degrees Fahrenheit over about two weeks this month, but the heating was halted before 300 degrees was reached. The Department of Energy's Hanford manager Brian Vance made the announcement at a Wednesday evening meeting of the Hanford Advisory Board.

When heating of the melter was started it was not expected to be turned off over the next five years to avoid damaging melter components. The plan was to run it continuously and also bring a second melter online that would both be used to commission the plant with a nonradioactive waste simulant and then to start treating radioactive waste as soon as the end of next year.

But the melter temperature has now been allowed to cool to the ambient temperature while troubleshooting is done on the electrical system, Vance said.

> Read the full story on Tri-City Herald's website [HERE](#)

METAMORPHOSIS: 'COCOONING' COMPLETE FOR SEVENTH HANFORD REACTOR BUILDING

RICHLAND, Wash. – Just over a year after breaking ground, crews recently completed construction of a protective enclosure, or “cocoon,” around another former plutonium production reactor at the Hanford Site, leaving only one more to go.

This EM 2022 priority, completed ahead of schedule and under budget, marks a significant accomplishment in EM’s risk-reduction cleanup mission along the Columbia River.

One of EM’s key construction priorities for 2022, the huge steel structure is more than 120 feet tall and 150 feet wide. The interim safe storage structure will protect the K East Reactor building while the radioactivity in the deactivated reactor core decays over the next several decades, making it safer to complete disposition of the reactor in the future.

“Our One Hanford team continues to deliver taxpayer value by safely completing projects that reduce risks to our workforce, our community, the Columbia River and the environment of the Pacific Northwest,” said Brian Stickney, deputy director, EM Office of River Protection and Richland Operations Office. “With this achievement and the exceptional accomplishments over the last few years, I am very optimistic about the Hanford Site’s future.”

Workers with EM contractor Central Plateau Cleanup Company (CPCCo) broke ground on the project last fall after awarding a subcontract to a local business for the work in August 2021.

Earlier this year, crews finished backfilling and compacting the area around the former reactor with approximately 34,000 cubic yards of sand and gravel to level the site before pouring a 6-foot-thick concrete foundation to support construction of the cocoon. The first steel columns for the enclosure were placed in mid-May with construction of the frame and installation of metal sheeting on the walls and roof continuing through the summer.



Workers with EM contractor Central Plateau Cleanup Company recently completed construction of a protective enclosure, or cocoon, over the former K East Reactor building. The cocoon is designed to protect the reactor building while the radioactivity in the deactivated reactor core decays over the next several decades, making it safer to complete disposition of the reactor in the future.

The cocoon’s design allows for routine inspections of the reactor every five years. During this “checkup,” radiation technicians will confirm that no contamination is leaving the sealed reactor core, and that nothing is entering the building from the outside. Additional safety features include new lighting between the structure and the reactor building, as well as upgraded lighting inside the building.

“I’m very proud of our team’s performance on this complex project,” said John Eschenberg, CPCCo president. “So many different skillsets were needed to successfully complete this work. From laborers to trades and crafts to the support of the Department and our regulators, it was a true collaborative effort, and we did it all with a spotless safety record.”

The K East Reactor operated from 1955 to 1971 and is the seventh of Hanford’s nine former reactors to be cocooned. The nearby K West Reactor will be the eighth. The ninth, the B Reactor, has been preserved as the world’s first full-scale plutonium production reactor and is part of the Manhattan Project National Historical Park. Hanford’s other six reactors were cocooned between 1998 and 2012. ■



**WATCH THE K EAST
REACTOR COCOONING
TIMELAPSE VIDEO**

EVERY WA CONGRESSIONAL LEADER IS SENDING BIDEN THE SAME MESSAGE ABOUT THE HANFORD NUCLEAR SITE

Tri-City Herald

Published October 27, 2022 | By Annette Cary



Hanford site workers remove old equipment from an underground waste tank. The Washington congressional delegation says more money is needed for Hanford cleanup. Photo courtesy Department of Energy.

The entire Washington congressional delegation, both Democrats and Republicans, have called on President Biden to do his part to get more money for the Hanford nuclear reservation site.

Sen. Patty Murray, D-Wash., and Rep. Dan Newhouse, R-Wash., led the effort to send a letter Thursday to the president. It points out the progress toward starting to treat and dispose of some of the least radioactive of 56 million gallons of waste stored in underground tanks, many of them prone to leaking.

Murray carries clout on the issue as a senior member of the Senate Appropriations Committee, and Newhouse, who serves on the House Appropriations Committee, has advocated for strong Hanford budgets since taking office in 2015.

Now DOE needs more money to also work toward treating the most radioactive tank waste by proceeding with the engineering and construction of the High Level Waste Facility at the Hanford vitrification plant, the letter said.

"This is a top priority for our constituents, the state of Washington, the communities surrounding DOE's Hanford site and regional tribes," the Washington delegation said.

> [Read the full story on Tri-City Herald's website](#) 

OFFICE OF ENVIRONMENTAL MANAGEMENT Published November 8, 2022



EM Richland Operations Office contractor Central Plateau Cleanup Company recently received groundwater treatment units for installation at the 200 West Pump and Treat Facility on the Hanford Site. The units are part of an upgraded system that will expand capacity for the largest of Hanford's six groundwater treatment plants.

HANFORD SITE GROUNDWATER PROGRAM CONTINUES TO BUILD ON CLEANUP PROGRESS

RICHLAND, Wash. – Another year, another 2 billion gallons of contaminated groundwater treated. It's a repeat of last-year's statistics, but a new chapter that illustrates continuous, consistent cleanup progress at the Hanford Site year after year.

The fiscal year that ended Sept. 30 marked eight consecutive years of topping the 2 billion-gallon mark, as the site continues to reduce risk to the Columbia River. The year's treatment reached 2.34 billion gallons, bringing the site's total to over 30 billion gallons treated, with nearly 700 tons of radiological and chemical contaminants removed since the groundwater treatment program began in the 1990s.

"Hanford's groundwater program is one of the biggest success stories in our ongoing cleanup mission," said Mike Cline, EM Richland Operations Office (RL) project director for soil and groundwater cleanup at Hanford. "But the job is not finished. We are continually seeking more efficient and cost-effective solutions to improve our systems. Protecting the Columbia River continues to drive our treatment efforts today just as it did when groundwater cleanup operations began more than 25 years ago."

CONTINUED ON PAGE 4



The new system works by pushing up to 225 gallons per minute of clean water through the soil to force — or flush — chromium contamination in the soil to the groundwater, where it can be more easily moved through a network of existing wells to a nearby treatment facility, accelerating the cleanup process.

CPCCo's field sampling group also plays a critical role in the success of the groundwater cleanup effort. Each year field crews log thousands of miles collecting more than 20,000 samples of soil and groundwater from hundreds of strategically placed monitoring wells. The samples are shipped to an offsite laboratory for analysis.

RL contractor Central Plateau Cleanup Company (CPCCo) operates five pump-and-treat systems along the Columbia River and one near the center of the Hanford Site. These systems remove radioactive and chemical contaminants from groundwater in areas where contaminated liquids were disposed in open pits near facilities that separated plutonium from fission products from the 1940s through the 1980s.

These advanced treatment facilities are just part of Hanford's comprehensive program to target and shrink plumes — or areas of groundwater contamination — across the 580-square-mile site.

Near Hanford's former K East Reactor, an innovative soil flushing system installed earlier this year on a half-acre area is accelerating the removal of hexavalent chromium, a hazardous chemical once used to inhibit corrosion in Hanford's reactors. During operations, some of the chromium was spilled or leaked to the soil. Nearby groundwater treatment facilities have reduced the area of chromium contamination by more than 75% since 2010, but some contamination remains in the soil above the water table, making it difficult to remove.

“Hanford's groundwater program is one of the biggest success stories in our ongoing cleanup mission.”

– Mike Cline, EM Richland Operations Office

Detailed data gleaned from analyzing the samples helps gauge the performance of ongoing remediation efforts and supports decision-making to drive efficient, cost-effective cleanup approaches.

Work is also underway to expand capacity of the 200 West Pump and Treat Facility, Hanford's largest groundwater treatment plant, by 50%. The expansion will increase the amount of water treated in the central part of the Hanford Site from 2,500 to 3,750 gallons a minute, potentially shortening the time required to meet cleanup goals and saving money.

“Hanford groundwater cleanup is more of a marathon than a sprint,” said Mark Cherry, CPCCo soil and groundwater program director. “While our experienced and innovative team is proud of the progress we've made, we're also committed to building on that success.” ■

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CONTRACTORS COLLABORATE ON SAFETY AND PROGRESS AT HANFORD'S 324 BUILDING

RICHLAND, Wash. – EM Richland Operations Office (RL) contractors Central Plateau Cleanup Company (CPCCo) and Hanford Mission Integration Solutions (HMIS) are teaming up again to continue removing contaminated soil beneath the 324 Building, a former nuclear materials research facility on the Hanford Site.

CPCCo crews in protective gear recently finished installing the last of 13 vertical structural supports, called micropiles, to fortify the foundation under a hot cell in the 324 Building where remotely operated equipment will be used to cut through the floor and excavate the contaminated soil.

"Installing the micropiles is a significant accomplishment in this challenging project," said Tim Trevis, CPCCo project manager. "I'm proud of our group's teamwork and persistence to ensure a safe path forward."

Key to safely installing the micropiles has been the continued use of mock-ups on the project. Such simulated work environments are frequently used at Hanford to allow employees to train and test equipment and procedures before performing work in a radiological environment.

As work on the micropiles wrapped up, a team at the Volpentest HAMMER Federal Training Center, managed by HMIS, met to practice repairing one of the overhead cranes in the building that workers will use to remotely clean out the contaminated hot cells. CPCCo radiological control technicians offered coaching and assistance as the team rehearsed the repairs. HAMMER stands for Hazardous Materials Management and Emergency Response.

"Utilizing the props at HAMMER allows workers to safely train and understand the tasks in a realistic, controlled environment," said Brian Von Barga, HMIS vice president of Interface & Integration Services. "This will translate to continued efficient work at the 324 Building that maintains the principle of minimizing radiation exposure."

"I appreciate the excellent collaboration and organization among multiple contractors and crews to safely advance this work," said Mark French, RL Projects and Facilities division director for Hanford's Central Plateau Cleanup Project.

"The sustained progress on projects like this reinforces the value of our collaborative One Hanford approach: everyone working toward a common goal to accomplish the cleanup mission."

The 324 Building supported research on radioactive materials while operating from 1966 to 1996. Removing the contaminated soil under the facility is a priority in the Hanford cleanup mission, due to the building's proximity to the Columbia River and the city of Richland. ■



Inside an area of the 324 Building on the Hanford Site, workers recently installed 13 structural supports, called micropiles, to ensure the integrity of the building during the removal of contaminated soil under the facility.



An aerial view of the Plutonium Uranium Extraction Plant. The main facility is at center. Also shown is the 211-A Chemical Storage Area, which is the open area just below the main facility, and the 203-A Acid Storage Area, which is the open area in foreground.

CREWS MAKING PROGRESS AT HANFORD'S FORMER PLUTONIUM PROCESSING FACILITY

RICHLAND, Wash. – Crews with EM Richland Operations Office (RL) contractor Central Plateau Cleanup Company (CPCCo) are performing risk-reduction activities to prepare a former plutonium processing facility on the Hanford Site for eventual disposition.

The Plutonium Uranium Extraction Plant (PUREX) was the final and most advanced chemical separations plant on the site.

Cleanup is currently focused on the north side of the main PUREX facility, where crews are preparing the 211-A Chemical Storage Area and 203-A Acid Storage Area for equipment removal and demolition. Both areas contain chemical storage tanks, structures and equipment that supported operations.

“It will be a yearslong effort to get this large facility ready for disposition, and I’m encouraged by the progress to safely and efficiently advance this work,” said Andy Wiborg, RL Projects and Facilities Division team lead for Hanford’s Central Plateau Cleanup Project.

PUREX was key to Hanford’s plutonium production mission during the Cold War era. Nearly 70% of Hanford’s irradiated fuel rods were processed through PUREX, which was designed to recover plutonium from the uranium fuel.

The 211-A Area contains 20 chemical storage tanks. Eight small tanks are located inside a pump house. Crews recently began draining chemical lines inside the pump house to prepare for eventual demolition. The lines were flushed during the 1990s, but workers needed to confirm no process fluids remained. Workers also inspected and sampled inside tanks that had not been opened in decades, ensuring workers will be able to safely demolish them in coming months.

Workers have also been making progress cleaning up asbestos at the 203-A Acid Storage Area. Constructed in 1954, the 203-A Area consists of a pump house, a railroad loading dock and a secondary containment area that housed nine aboveground tanks. So far, crews have removed asbestos-contaminated insulation from nearly 1,600 of 1,900 feet of pipeline in the 203-A Area.

“Our crews are making excellent progress on a daily basis,” said Darin Corriell, CPCCo PUREX manager. “We have a team of highly skilled professionals who are focused on taking things step by step to ensure a safe, effective cleanup.” ■

U.S. SPENDING BILL PASSES WITH MORE MONEY FOR HANFORD CLEANUP — ‘BIG STEP,’ INSLEE SAYS

Tri-City Herald Published December 23, 2022

By Annette Cary, senior staff writer

The Hanford nuclear reservation will get about \$140 million more for Hanford environmental cleanup for the fiscal year that started in October than was allocated by Congress for the past fiscal year.

The House approved the Hanford budget appropriation Friday as part of a \$1.7 trillion spending package for fiscal 2023 that was approved by the Senate on Thursday. It now goes to President Biden for his signature.

“It’s a big step toward getting the resources we need to finish the cleanup safely, effectively and efficiently,” Washington



Crews at the Plutonium Uranium Extraction Plant install bags on a piping system to safely remove asbestos-containing material in the 203-A Acid Storage Area.

Gov. Jay Inslee posted on Twitter. “There’s more work ahead, but this is a huge win for Washington state.”

The increase will put the budget just above the nearly \$2.7 billion appropriation for fiscal 2022.

> Read the full story on Tri-City Herald’s website [HERE](#) 

MANHATTAN PROJECT NATIONAL HISTORICAL PARK TAKES SPOTLIGHT IN 2023 STAMP SET

OFFICE OF ENVIRONMENTAL MANAGEMENT | Published November 22, 2022

DENVER – Manhattan Project National Historical Park (MPNHP) takes center stage as the national stamp in the 2023 Passport to Your National Parks Stamp Set.

The national stamp is the large center stamp in a collection of 10 stamps that honor national parks. Sure to become a collector’s item, the 2023 national stamp features three photos from the MPNHP locations at three EM sites – Los Alamos, New Mexico, Oak Ridge, Tennessee, and the Hanford Site.

The park was selected for the stamp set because its locations and historical buildings represent the nation’s diverse geography while weaving together many themes of national importance.

“The park turns seven this month as it debuts in the 2023 stamp set. The national stamp provides a wonderful opportunity to showcase the park and invite people to learn about and visit the park throughout the year,” said Wendy Berhman, acting park superintendent.

MPNHP commemorates the top-secret project that ushered in the nuclear age with the development of the world’s first atomic bombs. The building of atomic weapons began in 1942 in three communities across the country: Los Alamos built the atomic bombs using plutonium from Hanford and enriched uranium from Oak Ridge.

The national stamp features three historic buildings: B Reactor in Hanford, Pond Cabin in Los Alamos and X-10 Graphite Reactor in Oak Ridge.

Since 1986, national park visitors have turned to the National Parks stamps to preserve memories of their park travel by collecting ink cancellations at each national park they visit.

> Read the full story [HERE](#) 

