

HANFORD COMMUNITIES

WINTER 2021 NEWSLETTER

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



IN THIS ISSUE:

- 01 Direct Feed Low Activity Waste Construction Complete
- 02 Hanford Workers Retrieving Waste from Another Single-Shell Tank
- 03 Washington State Department of Ecology Names New Nuclear Waste Program Manager
- 04 Self-Guided Virtual Tours Give Public a New View of Hanford Cleanup
- 05 Hanford Contractors Transition in the New Year

FEATURED



Workers at the Hanford Waste Treatment and Immobilization Plant test the Low-Activity Waste Facility's container handling system.

DIRECT-FEED LOW-ACTIVITY WASTE CONSTRUCTION COMPLETE

Nearly two decades in the making, construction is now complete on the game-changing Waste Treatment Plant.

The Department of Energy (DOE) and its contractor, Bechtel, celebrated the completion of construction of Hanford's low activity waste vitrification facility.

This facility, also known as the Waste Treatment Plant, will turn millions of gallons of Hanford's tank waste into a solid glass form for permanent disposal.

The transition from construction to startup and commissioning marks an important milestone in the evolution of Hanford Cleanup. In taped remarks at the celebration, Senator Maria Cantwell noted that building the world's largest plant to treat radioactive waste is "truly a scientific and engineering feat." She also added, "This is an unprecedented step toward cleaning up the most toxic site in the United States... and restoring the Hanford Site to return it to the community."

Mark Menezes, then-DOE Deputy Secretary also participated in the celebration, saying it "marks a tremendous leap forward for the Hanford workforce and the Tri-Cities community."

From here, the Department of Energy and contractor Bechtel National will work toward starting up all systems needed to treat low activity waste, at which point they will initiate trials of plant operation with a non-radioactive waste simulant. ■

To read the full Tri-City Herald article, visit: <https://www.tri-cityherald.com/news/local/hanford/article248312750.html>



Watch a video of the event [HERE](#).

SOURCE: Cary, Annette. (2021, January 6). 'Engineering feat.' World's largest plant for nuclear waste cleanup at Hanford ready for startup. Tri-City Herald. www.tri-cityherald.com.

HANFORD WORKERS RETRIEVING WASTE FROM ANOTHER SINGLE- SHELL TANK

FROM THE OFFICE OF
ENVIRONMENTAL MANAGEMENT



The Office of River Protection (ORP) continues to make substantial progress in its mission to safely and efficiently reduce risk at the Hanford Site by managing and retrieving millions of gallons of radioactive waste stored in massive underground tanks.

ORP tank operations contractor Washington River Protection Solutions (WRPS) recently began retrieving waste from single-shell Tank AX-104 and transferring the waste to a newer, more robust double-shell tank for safe storage. To date, EM has completed waste retrieval from 17 of Hanford's single-shell tanks.

“Moving waste into the double-shell tank system helps reduce risk to the environment and allows for safe storage of the waste until it can be treated.”

— Brian Harkins, ORP deputy assistant manager for tank farms

Tank AX-104, one of four tanks that make up Hanford's AX Farm, contains more than 5,000 gallons of highly radioactive sludge-like material on the tank floor and 2,000 gallons of the material on the tank walls. The retrieval strategy for the 1-million-gallon-capacity tank involves mobilizing the waste by using pressurized water directed through robotic sluicing equipment, then pumping the slurry to a double-shell tank for safe storage.

WRPS set the stage for retrieval of Tank AX-104 by carefully removing highly contaminated legacy equipment from the

tank — such as pumps and thermocouples — and installing waste retrieval infrastructure in AX Farm. A thermocouple is a device that measures the temperature of waste. The infrastructure included a new ventilation system to filter emissions and a state-of-the-art facility that houses the water supply systems used to support retrieval activities. The in-tank waste retrieval system consists of three cannon-like sluicers, a central pump, and six camera and lighting systems. Sluicers are used to mobilize the waste and move it to a central pump.

Established safety controls will be in place throughout the entire retrieval process. ORP and WRPS also used lessons learned from previous retrieval projects to help keep workers safe.

“We have a highly skilled, innovative team with a strong track record of meeting the unique challenges that come with tank waste retrieval. For all retrieval projects, we develop a thorough project plan, choose the right tools for the job, and complete work safely,” said Doug Greenwell, WRPS retrievals manager. ■

Pictured above: EM Office of River Protection contractor Washington River Protection Solutions recently began retrieving waste from single-shell tank AX-104 at the Hanford Site. The waste is being transferred to a more robust double-shell tank for safe storage.



Photo courtesy Hanford Mission Integration Solutions

WASHINGTON STATE DEPARTMENT OF ECOLOGY NAMES NEW NUCLEAR WASTE PROGRAM MANAGER

In November 2020, the Washington State Department of Ecology selected a new manager for its Nuclear Waste Program, which oversees the state's regulatory role at the Hanford nuclear reservation.

Replacing Alex Smith, David Bowen started December 16 after Smith took another state job at the end of October. He previously served as the Department of Ecology's Water Quality Section Manager based in Union Gap.

"I know Hanford is challenging and complex," Bowen said, "But I'm excited for the opportunities it presents."

Bowen looks forward to engaging with Tri-Cities area community members, tribal representatives and those involved with cleanup of the Hanford nuclear reservation to gain a broad perspective on issues, he said.

In an announcement released by the Department of Ecology, they said, "Bowen has experience building solid partnerships with elected officials and local government leaders, advocacy groups and members of the public. A key strength and interest is continuing strong partnerships at the community, state and federal level to ensure the cleanup of nuclear waste material at the Hanford site."

Ecology, along with the U.S. Environmental Protection Agency, regulates environmental cleanup at the Hanford site and is one of the three Tri-Party Agencies — with the Department of Energy and EPA — that sets enforceable cleanup goals and deadlines at Hanford.



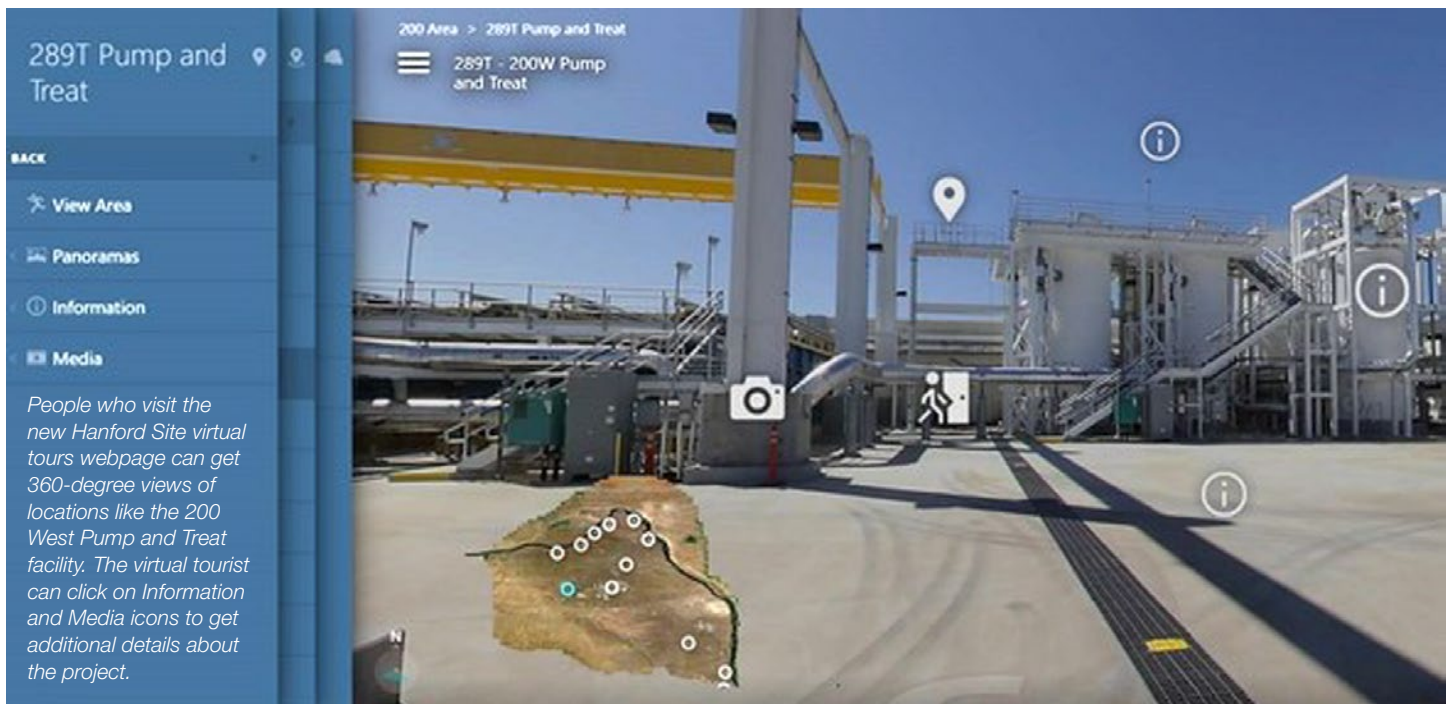
David Bowen on the job as the Department of Ecology's new nuclear waste program manager.

Hanford is contaminated with radioactive and hazardous chemical waste from the past production of plutonium from World War II through the Cold War. ■

To read the original Tri-City Herald article, visit: <https://www.tri-cityherald.com/news/local/hanford/article247157969.html>

For more about the Department of Ecology, visit: <https://ecology.wa.gov/>

SOURCE: Tri-City Herald Staff. (2020, November 13). Washington state picks new Hanford cleanup watchdog. Tri-City Herald. www.tri-cityherald.com.



SELF-GUIDED VIRTUAL TOURS GIVE PUBLIC A NEW VIEW OF HANFORD CLEANUP

FROM THE OFFICE OF ENVIRONMENTAL MANAGEMENT

The U.S. Department of Energy, along with Hanford Site cleanup contractors, are unveiling a new public virtual tour platform of the 580-square mile site.

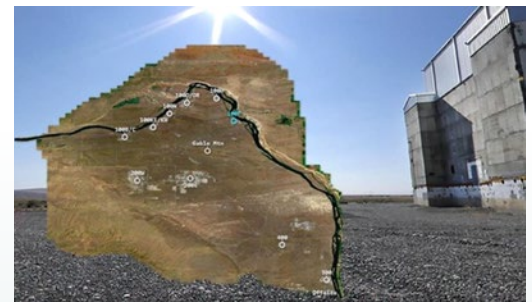
In the past, Hanford offered limited in-person public tours in the spring and summer months as a way to engage the public in the Hanford cleanup mission. Since public tours are currently on hold, Hanford Site leadership came up with the idea of a virtual tour with the intent of keeping the public involved in cleanup progress while upholding COVID-19 protocols.

Hanford's virtual tour website is designed to be self-guided and will be accessible to the public beginning January 14, 2021 from the top banner of the www.hanford.gov webpage. While on the tour, participants can "visit" up to 20 Hanford locations with 360-degree camera views, accompanied with descriptions to provide context of the various projects. The virtual tour requires the use of the Chrome web browser.

"Hanford cleanup is one of the great public works of our time. We are excited to have the tools to expand public awareness and appreciation of our important work with the virtual tour," said Brian Vance, manager of the DOE's

Richland Operations Office and Office of River Protection. "Some of the locations featured on the virtual tour would not have otherwise been accessible to visitors due to the nature of our work," he said. "By utilizing technology, the virtual tour provides a superior experience and promotes public engagement."

A map of the 580-square mile Hanford Site shows virtual tourists the geography of past site operations and the current cleanup mission.



Some of the tour stops include Hanford's 324 Building, 200 West Groundwater Treatment Project, and various structures associated with Hanford's Direct Feed Low Activity Waste program including the Waste Treatment Plant and tank farms. ■

HANFORD CONTRACTORS TRANSITION IN THE NEW YEAR

The new year brought a fresh start for two prime Hanford contractors. Here's a look at the organizations that have a new look and purpose headed into 2021.

HANFORD MISSION INTEGRATION SOLUTIONS



Hanford Mission Integration Solutions delivers mission integration, introducing new innovations and technologies that drive improvement of essential service delivery and enables the One Hanford cleanup mission. Comprised of globally-known and U.S. Department of Energy (DOE)-trusted partners — Leidos, Centerra Group, and Parsons — HMIS was awarded the new Hanford Mission Essential Services Contract at the Hanford Site. HMIS will provide Hanford Site services, including security and emergency services, land management services, and information technology services; management of the Hazardous Material Management and Emergency Response (HAMMER) Federal Training Center; maintaining vital infrastructure; and performing infrastructure upgrades (e.g., electric, water, roads), as well as building future infrastructure to support operation of the Waste Treatment and Immobilization Plant. ■



CENTRAL PLATEAU CLEANUP COMPANY



Central Plateau Cleanup Company (CPCCo) brings the depth and breadth of three leading nuclear industry companies — Amentum, Fluor, and Atkins — making it the single largest and most experienced nuclear End-State delivery team assembled for the Central Plateau Cleanup Contract (CPCC). Within our 179 years of combined nuclear experience, including 63 years at Hanford, we have decommissioned 1,179 facilities and dispositioned more waste than any other U.S. company. Successful program delivery is a shared team goal. We will execute the project in an integrated and transparent manner among CPCCo, our two teaming subcontractors — INTERA Incorporated and DBD Inc. — and our two small business protégés, Longenecker & Associates, Inc. and Lucas Engineering and Management Services, Inc. ■



LOOKING FOR MORE WAYS TO CONNECT?



Hanford Events Calendar
See upcoming events and public engagement **GO!**



Hanford Virtual Tours
Tour the Hanford Site virtually from your device **GO!**

FOLLOW US ON SOCIAL MEDIA



@hanfordcommunities
Hanford Communities

HANFORD COMMUNITIES

SPRING 2021 NEWSLETTER

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



IN THIS ISSUE:

- 01 Let's Talk About Hanford
- 02 Key Risk-Reduction Work Resumes at Hanford Site's 324 Building
- 03 Work to Stabilize Radioactive Debris in Hanford Reactor Basin Moves Forward
- 04 Hanford Team Completes Effluent Management Facility System Handovers
- 05 Training Goes "Rad" at Hanford Waste Treatment Plant
- 06 Ecology Tracking Hanford Waste Tank Leak

HANFORD LIVE! 2021 | JUNE 16TH

Join the U.S. Department of Energy, the U.S. Environmental Protection Agency, and the Washington State Department of Ecology for an online conversation about Hanford cleanup. The program will begin with an overview from each agency, followed by a facilitated question-and-answer session.



WHEN: Wednesday, June 16, 5:30-7:30pm
WHERE: Online, register at:
<https://bit.ly/3wgrrcf>

FEATURED



"LET'S TALK ABOUT HANFORD"

Virtual Series Sheds Light on Our Cleanup History

In an effort to highlight the Hanford Site's history, along with the cleanup taking place today, the Washington State Department of Ecology began a series of virtual conversations titled "Let's Talk About Hanford." The first live discussion in the series took place in early May on the topic of "Hanford History, Part I." It dove into the history of the Hanford Site starting before the government chose the area for plutonium production through the end of World War II.

Robert Franklin joined the discussion as a featured guest, along with Ryan Miller and Ginger Wireman from Ecology's Nuclear Waste Program. Franklin is the assistant director and archivist of the Hanford History Project, director of the Hanford Oral History Project, a certified archivist, and a lecturer in the History Department at Washington State University Tri-Cities.

The second part of this segment will be covered in a future event. Future conversations will continue to blend high-level easy-to-understand presentations and conversations with participants about Hanford topics. The virtual discussions are meant for those unfamiliar with Hanford, those who want a refresher, or to expand their existing knowledge. Each event begins with a short high-level presentation on that day's topic, followed by a live Q&A with those watching. Information about future events can be found on the Department of Ecology's Facebook page. ■

KEY RISK-REDUCTION WORK RESUMES AT HANFORD SITE'S 324 BUILDING



EM Richland Operations Office (RL) contractor Central Plateau Cleanup Company (CPCCo) recently resumed key risk-reduction activities to prepare to remove contaminated soil under Hanford's 324 Building.

The building supported research on highly radioactive materials during operations from 1966 to 1996. Removing the contaminated soil is an important element of Hanford's risk-reduction mission, and is a high priority for the Tri-City community.

"As Hanford continues to advance these and other elements of its risk-reduction mission, the safety of the workforce will continue to be paramount," said Mark French, RL federal project director. "Lower-hazard work has gone safely and smoothly, and workers are preparing to resume drilling foundation supports under a shielded containment area in the building where we'll excavate the soil through the floor."

The prep work marks the first significant progress-focused tasks since the project was paused in November 2019 after a series of low-level contamination occurrences inside the facility. A key component of the enhanced safety protocols

is improved processes for putting on and removing personal protective equipment that safeguards workers from contamination.

Workers have trained on the new process at a mock-up of the 324 Building over the past several months. The mock-up helps employees train safely and test equipment and procedures before performing work in a radiological environment.

"The 324 team has done a great job of working together to develop, test, and implement improved processes to ensure the work can be done safely," said Rob Cantwell, director of CPCCo's Outer Area End States project. "We have a highly skilled team continuously working together to ensure this important and hazardous work moves forward safely to completion." ■

 [Check out this video to learn more about new safety protocols as work on the Hanford Site's 324 Building resumes.](#)

LOOKING FOR MORE WAYS TO CONNECT?



Hanford Events Calendar
See upcoming events and public engagement **GO!**



Hanford Virtual Tours
Tour the Hanford Site virtually from your device **GO!**

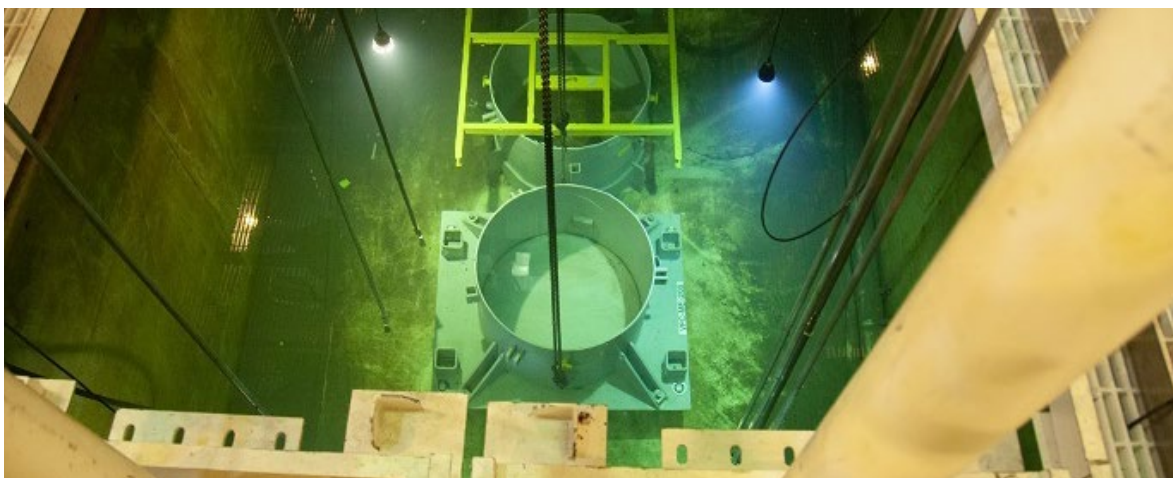
FOLLOW US ON SOCIAL MEDIA



@hanfordcommunities



Hanford Communities



FROM THE OFFICE OF ENVIRONMENTAL MANAGEMENT

Crews recently completed testing on a debris stabilization system using a mock-up of the K West Reactor fuel storage basin. Mock-ups are used extensively at Hanford to train workers and test equipment before starting work in a radiological environment.

WORK TO STABILIZE RADIOACTIVE DEBRIS IN HANFORD REACTOR BASIN MOVES FORWARD

EM Richland Operations Office (RL) contractor Central Plateau Cleanup Company (CPCCo) is preparing to implement key components of a system that will isolate and stabilize about 15,000 pounds of radioactive debris in the K West Reactor spent fuel storage basin on the Hanford Site.

Workers recently completed system testing at a mock-up in Hanford's Maintenance and Storage Facility, as well as at a site in Texas. Mock-ups are used extensively at Hanford to train workers and test equipment before starting work in a radiological environment.

Stabilization of debris in the 1.2-million-gallon water-filled basin follows the successful removal and transfer of radioactive sludge in September 2019.

"Stabilizing and removing debris is one of the final steps leading to removing water from and demolishing the basin," said Mark French, RL project and facilities division director. "Installing this system will allow us to do the work needed to complete cleanup activities in Hanford's K West Area."

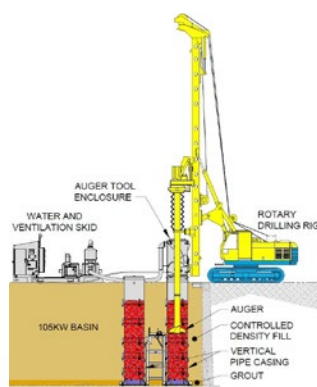
Waste material left in the K West Reactor Basin after 60 years of fuel storage operations—such as contaminated

tools, scrap metal, and fuel canister lids—will be placed into baskets, washed, and remotely loaded into 4-foot-diameter, 22-foot-tall tubes (called vertical pipe casings) installed in the basin.

The partially filled casings will then be drained and filled with an engineered grout to stabilize the waste. After the basin has been drained and filled with grout, an auger will blend the contents of the pipe casings to prepare the material for removal and packaging during basin demolition. The packaged waste will be characterized to identify the appropriate disposal path.

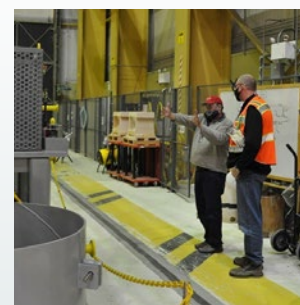
"Our skilled team continues to make excellent progress installing the stabilization system," said Matt St. Germaine, contractor operations manager for the project. "This effort builds on the successful removal of radioactive sludge from the basin and maintains our focus on reducing risk to the nearby Columbia River."

Waste processing in the vertical pipe casings is expected to begin this summer. ■



This diagram shows the vertical pipe casing system that will isolate and stabilize about 15,000 pounds of radioactive debris left in the K West Reactor fuel storage basin at Hanford.

Ray Geimer with EM contractor Central Plateau Cleanup Company, left, shows company president Scott Sax a mock-up of parts of a vertical pipe casing system at Hanford's Maintenance and Storage Facility. The system will be used to stabilize and remove radioactive debris at Hanford's 1.2-million-gallon K West Reactor fuel storage basin.





All systems for Hanford's Effluent Management Facility have been tested and handed over to Waste Treatment and Immobilization Plant management for commissioning.

HANFORD TEAM COMPLETES EFFLUENT MANAGEMENT FACILITY SYSTEM HANDOVERS

FROM THE OFFICE OF
ENVIRONMENTAL MANAGEMENT

The EM Hanford Waste Treatment and Immobilization Plant team recently finished all startup testing and system handovers for the Effluent Management Facility (EMF), marking its full transition into the commissioning phase.

"This caps off a significant cohesive effort across the treatment plant project," said Mat Irwin, EM Office of River Protection deputy assistant manager for the plant. "Handing over all systems and areas of the EMF to plant management is a huge step toward treating Hanford's tank waste."

Progress since construction began on EMF can be seen in a new video. The EMF plays a key role in Hanford's Direct-Feed Low-Activity Waste (DFLAW) approach to treating tank waste. DFLAW is a system of interdependent projects and infrastructure improvements, managed and highly integrated as a program, that must operate together to vitrify the tank waste, which means immobilizing it in glass. During DFLAW operations, secondary liquid called effluent is generated. This effluent goes to the EMF, where excess water is evaporated from it and transferred to a nearby retention facility.

The EMF includes 77 integrated systems across four buildings. After startup testing for each EMF system was finished, the startup team documented the results, and each system was handed over to the plant management team to initiate commissioning. The commissioning phase ensures

the utilities and process systems are integrated and ready to support future plant operations.

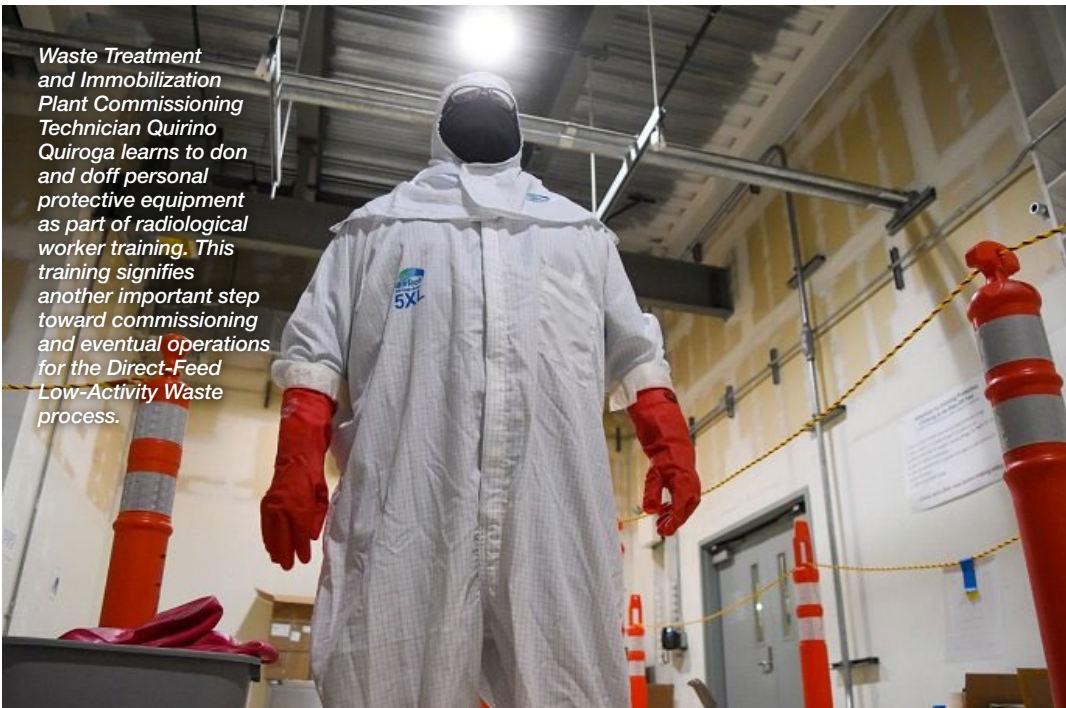
"Everyone from our skilled craft workers, test engineers, control room staff, handover coordinators, and all of our EMF support organizations stepped up to make this final stretch of handovers successful," said Rick Holmes, general manager for Waste Treatment Completion Company, a subcontractor to project lead Bechtel National, Inc. "Now, we will continue focusing on completing handovers for the remaining treatment plant systems."

The only remaining DFLAW startup activities are within the Low-Activity Waste (LAW) Facility, where the vitrification process will occur. To date, about 50 percent of the facility's 94 systems have been handed over to plant management, with completion of all systems anticipated later this summer.

The treatment plant team expects to begin heating up the first melter inside the LAW Facility by the end of the year. Information on the commissioning process, including a loss-of-power test and melter heatup, is available [here](#). ■

TRAINING GOES “RAD” AT HANFORD WASTE TREATMENT PLANT

FROM BECHTEL NATIONAL



Waste Treatment and Immobilization Plant Commissioning Technician Quirino Quiroga learns to don and doff personal protective equipment as part of radiological worker training. This training signifies another important step toward commissioning and eventual operations for the Direct-Feed Low-Activity Waste process.

The word “rad” has finally arrived at the Hanford Vit Plant, and it’s not for a 80s throwback.

Instead, more than 450 workers at the plant will receive radiological, or “rad,” worker training as the plant nears commissioning, when operators will run a nonradioactive waste simulant through the plant to ensure systems are working properly.

“Rad worker training is a constant across the rest of Hanford,” said Mat Irwin, Department of Energy Environmental Management’s Office of River Protection deputy assistant manager for the plant. “But it’s new at the plant as facility construction is finished, Analytical Laboratory startup is complete, and startup testing for the Low-Activity Waste Facility and Effluent Management Facility is nearly complete. The team is well prepared to complete training prior to cold and hot commissioning.”

During commissioning, workers will need to demonstrate proper rad safety performance as if the plant were treating radioactive waste from Hanford’s large underground tanks. The required training will help personnel maintain knowledge and skills.

“We are preparing our employees to safely operate the plant and turn tank waste into glass,” said Kelly Neal, deputy safety and health manager for Hanford subcontractor Waste Treatment Completion Company. “Starting the training early is important to make sure our team is ready for commissioning.”

The addition of rad worker training signifies another important step toward commissioning and eventual operations for the Direct-Feed Low-Activity Waste process, a system of interdependent projects and infrastructure improvements, managed and highly integrated as a program, that must operate together to vitrify tank waste, which means to immobilize it within glass.

“THE NEED FOR THIS TRAINING NOW DEMONSTRATES HOW CLOSE WE ARE TO COMMISSIONING,” SAID IRWIN. “IT’S EXCITING TO BEGIN SEEING THE PERMANENT PLANT TRAINING PROGRAMS BEING IMPLEMENTED.”

The training began this month and is scheduled for completion by the fall. The training is required for anyone who might access radiological areas, work with radioactive materials, or operate radiation-generating devices. Training consists of classroom modules and a written exam, as well as an onsite session for recognizing signs, postings, and barricades, and entering and exiting radiological areas. More advanced training will be held for employees learning how to don and doff personal protective equipment for entering and exiting contamination areas.

View individual plant facilities and their interior spaces using a self-guided Hanford Virtual Tour. ■

ECOLOGY TRACKING HANFORD WASTE TANK LEAK

The U.S. Department of Energy announced late April that an underground radioactive and dangerous chemical waste storage tank at the Hanford Site in Southeast Washington is leaking.



The Washington state Department of Ecology's Nuclear Waste Program, along with the U.S. Environmental Protection Agency, oversees Energy's cleanup of Hanford.

"It's a serious matter whenever a Hanford tank leaks its radioactive and dangerous chemical waste," Ecology Director Laura Watson said. "Based on the information we have right now, the leak poses no immediate increased risk to workers or the public, but it adds to the ongoing environmental threat at Hanford."

Tank B-109, which is at least 75 years old, is estimated to be leaking 3.5 gallons a day, or nearly 1,300 gallons per year.

Ecology has been concerned with this tank and tracking it for more than a year, when a formal leak assessment first began. B-109 is leaking into an area where other tanks have already leaked 200,000 gallons into the soil.

B-109 is miles away from the Columbia River, and the water table is 210-240 feet below the tank. An estimated 1,700 gallons have leaked into the soil from B-109 dating back to March 2019. Hanford tanks contain widely varying volumes of mixed waste (waste with both radioactive components and dangerous chemicals), each with a unique blend of constituents.

Ecology was notified about a year ago that Energy had started a formal leak assessment for B-109. At that time, Energy said the tank's levels were decreasing but it was not sure why. Ecology has been tracking the situation and was notified Thursday (April 29), that Energy had determined that the tank is in fact leaking.

Ecology has authority under the Tri-Party Agreement, which governs the Hanford clean-up, to take immediate action in response to a leaking single-shell tank only if it is "necessary to abate an imminent and substantial endangerment to public health or welfare or the environment."

The state's initial assessment is that, while any leak is a serious issue, there isn't an imminent danger.

The next step is for Ecology to try to reach agreement with Energy about the best path forward. If the two agencies can't agree, Ecology retains the authority to take an enforcement action and require specific actions to address the leak.

B-109 BACKGROUND

Tank B-109 is part of the 12-tank B Farm, which is one of Hanford's oldest tank farms and is co-located with the BX and BY tank farms. B-109 has an estimated 15,000 gallons of liquid waste as part of its total waste volume of about 123,000 gallons. An estimated 200,000 gallons of waste already has leaked from other tanks in the B-BX-BY tank farm complex.

B-109 began receiving waste in 1946 and was taken out of service in 1976. It was still full of waste at that time, but no further waste was added. The tank was interim stabilized and declared sound in 1985.

This tank received bismuth phosphate waste, evaporator slurry bottoms, Plutonium-Uranium Extraction Plant (PUREX) cladding waste, and B-Plant ion exchange waste. ■

HANFORD COMMUNITIES

SUMMER 2021 NEWSLETTER

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



IN THIS ISSUE:

- 01** Federal infrastructure funding investment will pay dividends in progress at Hanford
- 02** Electrical Upgrades Extend Life of Hanford Power Grid
- 03** Subcontractor to Support Safe Storage of Seventh Hanford Reactor Building
- 04** Hanford Team Completes Test for Power Supply Critical to WTP Facility
- 05** Hanford Launches Outreach Campaign to Deliver Radiation-Safety Education
- 06** Dry-Storage Area for Radioactive Capsules Nearly Complete at Hanford

David Bowen is the Nuclear Waste Program Manager for the Washington State Department of Ecology. David Reeploeg serves as Vice President for Federal Programs at TRIDEC and Executive Director of Hanford Communities. The Op-Ed was originally featured in the August 2, 2021 edition of the Tri-City Herald.

FEATURED



FEDERAL INFRASTRUCTURE FUNDING INVESTMENT WILL PAY DIVIDENDS IN PROGRESS AT HANFORD

OP-ED CO-WRITTEN BY DAVID BOWEN AND DAVID REEPOLEG

The Tri-Cities community has many reasons to be proud of its legacy of achievement at the Hanford Site, beginning with the Manhattan Project and continuing through the Cold War.

That national security mission has now transitioned to one of the largest and most complex cleanup projects in the world, but the legacy of achievement continues. Today, more than 11,000 Tri-Citians are going to work every day making critical cleanup progress and solving technical challenges unlike those found anywhere else. Despite these incredible efforts, however, federal funding has fallen short of what is needed to keep Hanford cleanup on schedule. That's why we are jointly seeking infrastructure funding from Congress to help meet these needs.

Although there have been significant disagreements between numerous Tri-City community leaders and the Washington State Department of Ecology, we all agree on one important point – every dollar invested in cleanup now will save money in the long run and shave years off the total time needed to complete the work.

Federal investments in sitewide risk mitigation, tank waste retrieval technology development, cross-site waste transfer lines, the high-level waste treatment facility and the high-level waste effluent management facility represent a major opportunity to advance cleanup. These projects are necessary to accomplish the cleanup

CONTINUED ON PAGE 2

"FEDERAL INFRASTRUCTURE..." – CONTINUED

mission, and an infusion of infrastructure funding to expedite them would be a game-changer for the Hanford Site and local communities.

More than a decade ago, during the Great Recession, the federal government provided one-time funding increases that propelled the Hanford mission forward. The investment was an incredible success, saving nearly \$4 in long-term costs for every \$1 spent while significantly reducing the overall cleanup timeline. Since Hanford is on the cusp of transitioning from construction to operation of the low-activity waste vitrification facility, funding from Congress now could have an even greater impact than in 2008.

Investing in Central Washington has always been a good idea. Throughout the decades of plutonium production and now cleanup, the Hanford Site and the Tri-Cities have become a

place of world-class ingenuity and technological innovation. Successfully completing the cleanup will require an equal measure of commitment and innovation, combined with adequate funding. Thankfully, our progress to date has shown that we can accomplish it in a safe and effective manner – if we have the resources.

Here in the Tri-Cities, we are blessed with a congressional delegation that is wholly committed to the cleanup effort. Their support has been invaluable, and we are grateful for their efforts to fight for every dollar. We must now seize this opportunity to advance the Hanford cleanup further through the federal infrastructure bill. For a fraction of what was spent to protect our national security, we can ensure that our community and the Columbia River will remain protected for generations to come. ■

ELECTRICAL UPGRADES EXTEND LIFE OF HANFORD POWER GRID

RICHLAND, Wash. – A top Hanford priority got a major boost thanks to upgrades to the site's massive electrical system.

Under the leadership of EM contractor Hanford Mission Integration Solutions (HMIS), subcontractors DGR and Titan Electric installed approximately 8 miles of new aluminum-conductor steel-reinforced cable, boosting the electrical system capacity by more than 40% to support Hanford's Direct-Feed Low-Activity Waste (DFLAW) Program.

The team also removed 400 aging utility poles and copper conductors, replacing many with new poles, extending the life of the system to at least 2050. Modernizing the electrical lines increases safety and efficiency.

"The removal and replacement of aging circuits throughout the central portion of the Hanford Site supports tank waste operations, including DFLAW operations, which are high priorities for Hanford," said Jeff Frey, DOE assistant manager for mission support. "This infrastructure upgrade is one of many that will allow DFLAW to successfully treat and vitrify Hanford tank waste."



Crews updated Hanford's massive electrical system, replacing miles of electrical lines, and adding fiber optic communication cables and new utility poles as part of infrastructure upgrades in support of the Direct-Feed Low-Activity Waste Program.

Vitrification is a process in which tank waste is immobilized in glass. During the project, HMIS scheduled dozens of planned, safe outages to swap power from the old system to the new one. The work also included adding fiber-optic communication cables and new underground power lines, which will reduce the chance of future weather-related outages.

"The timely completion of this high-priority project exemplifies the One Hanford mission," said Todd Synoground, HMIS senior vice president of infrastructure and site services. "We are proud of our coordination and integration to upgrade Hanford's critical electrical system in preparation for the startup and commissioning of DFLAW." ■

SUBCONTRACTOR TO SUPPORT SAFE STORAGE OF SEVENTH HANFORD REACTOR BUILDING

RICHLAND, Wash. – EM Richland Operations Office (RL) contractor Central Plateau Cleanup Company (CPCCo) has awarded two construction subcontracts worth about \$9.5 million to Richland-based DGR Grant Construction Inc. to progress critical risk-reduction work along the Columbia River at the Hanford Site.

DGR Grant is tasked with constructing a safe-storage enclosure over the K East Reactor to place the reactor into interim safe storage, including preparing the foundation and installing supporting infrastructure. The enclosure will protect the reactor building while the radioactivity in the reactor core decays over the next several decades, making it easier and safer to complete disposition of the reactor in the future.



EM Richland Operations Office contractor Central Plateau Cleanup Company recently awarded two subcontracts to DGR Grant Construction Inc., of Richland, Washington to build and install an enclosure over the former K East Reactor building on the Hanford Site.

“Awarding this contract is a major step toward the completion of work in Hanford’s K Reactor Area,” said Bob Krebs, CPCCo project manager for the safe-storage enclosure. “We look forward to working with the Department of Energy and our cleanup partners to safely execute this critical risk-reduction project.”



An artist's rendition 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 while radioactivity in the reactor cores decays over the next several decades, making it easier and safer to dismantle the reactors in the future.

Groundbreaking on the foundation for the storage enclosure is scheduled to begin in September. Construction of the steel structure is slated for early 2022 with completion expected in 2023.

“WORK ON PLACING THE K EAST REACTOR IN INTERIM SAFE STORAGE PROGRESSES OUR MISSION TO PROTECT THE PUBLIC AND THE COLUMBIA RIVER,” SAID MARK FRENCH, RL PROJECT AND FACILITIES DIVISION DIRECTOR.

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, the B Reactor, has been preserved as the world's first full-scale nuclear reactor and is part of the National Park Service's Manhattan Project National Historical Park. ■



Crews recently completed startup testing on one of the Waste Treatment and Immobilization Plant's vital safeguards in the unlikely event of a temporary power loss — the Low-Activity Waste Facility's uninterruptable electrical power system.

HANFORD TEAM COMPLETES TEST FOR POWER SUPPLY CRITICAL TO WTP FACILITY

FROM THE OFFICE OF ENVIRONMENTAL MANAGEMENT

RICHLAND, Wash. – The EM Hanford Waste Treatment and Immobilization Plant team recently finished startup testing for the Low-Activity Waste (LAW) Facility's uninterruptable electrical power system (UPS), one of the plant's vital safeguards in the unlikely event of a temporary power loss.

"The uninterruptable power system is an important step in the commissioning sequence and preparing for an upcoming loss-of-power test and then melter heatup later this year," said Mat Irwin, EM deputy assistant manager for the plant.

A loss-of-power test will demonstrate the plant's ability to respond in the unlikely event of a loss of electrical power by placing the LAW Facility into a safe configuration and restoring power to two 300-ton melters for continued operations.

Once the melters are heated, they must be kept at a high operating temperature or will need to be replaced. During waste treatment operations, the melters will heat Hanford's low-activity tank waste and glass-forming materials to 2,100 degrees Fahrenheit—a process called vitrification—before the mixture is poured into stainless steel containers for disposal.

The plant's main electrical switchgear building feeds power to the LAW Facility's utility systems, the melters, and critical safety systems. The UPS is located inside the LAW Facility and consists of several sets of industrial-sized backup

batteries that can provide near-instantaneous backup power to plant systems.

"Our startup team and support groups did a tremendous job to get the uninterruptable power system across the finish line," said Roy Tyrie, startup director for Waste Treatment Completion Company, subcontractor to EM Office of River Protection contractor Bechtel National, Inc. "We're continuing our focus to finish LAW Facility startup testing in preparation for the loss-of-power test this summer."

The UPS has been handed over to the plant management team to initiate the commissioning phase. The commissioning phase ensures the utilities and process systems are integrated and ready to support future plant operations. A total of 59 of the LAW Facility's 94 total systems have been handed over to plant management.

Information on the commissioning process, including melter heatup, is available on the Journey to Melter Heatup website. The plant facilities can be viewed using the self-guided Hanford Virtual Tour. ■

LOOKING FOR MORE WAYS TO CONNECT?



Hanford Events Calendar
See upcoming events and public engagement **GO!**



Hanford Virtual Tours
Tour the Hanford Site virtually from your device **GO!**

FOLLOW US ON SOCIAL MEDIA

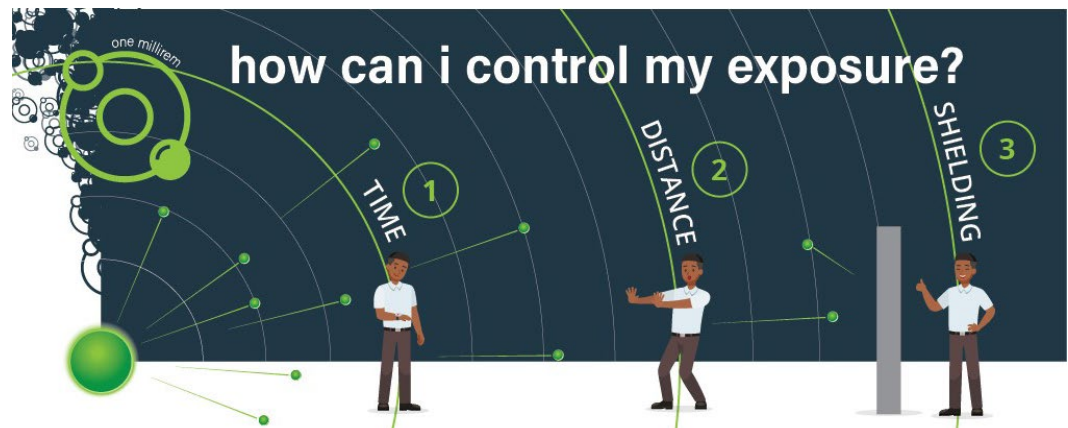


@hanfordcommunities
Hanford Communities

HANFORD LAUNCHES OUTREACH CAMPAIGN TO DELIVER RADIATION-SAFETY EDUCATION

OFFICE OF
ENVIRONMENTAL
MANAGEMENT

As part of a radiation safety campaign, the Hanford Site dives into the basics of radiation. For example, the campaign shares information about how radiation is energy that travels at the speed of light.



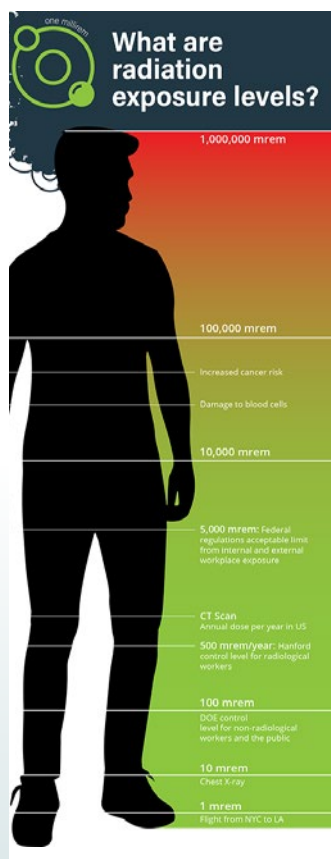
RICHLAND, Wash. – Providing information on the basics of radiation, and the controls and efforts to reduce radiation risks at the Hanford Site, is the goal of the Hanford Health and Safety Education Campaign.

The EM Office of River Protection (ORP) and Richland Operations Office (RL) launched the campaign recently to share knowledge with stakeholders and community members.

said Brian Stickney, RL deputy manager and chief operating officer. “The outreach campaign also provides context on actual versus perceived risks.”

The focus of the Hanford cleanup mission is to remediate the sources of radiation risk by retrieving and treating waste from underground tanks; removing buildings and their contents; remediating waste burial sites; safely storing nuclear and waste materials until they can be dispositioned; and removing contamination from groundwater. Performance of this work is highly regulated, and laws and DOE orders are implemented to establish strict requirements for protecting workers, the public, and the environment from radiation hazards.

The three-phased outreach campaign began in May 2021 and will end in December 2022. The first phase concentrates on radiation and radiation safety basics; the second phase will educate on work controls for current cleanup projects; and the last phase will focus on radiation program monitoring and assessment. ■



ORP and RL are posting facts about radiation on their social media accounts and the Hanford website, and sharing information through direct outreach. The campaign will increase awareness of safety measures taken at Hanford and provide background on what represents a radiation risk.

“WE WANT TO EDUCATE THE PUBLIC AND OUR STAKEHOLDERS ABOUT HOW WE MANAGE HAZARDS AT HANFORD, INCLUDING THE CONTROLS WE HAVE IN PLACE TO SAFEGUARD WORKERS, THE COMMUNITY, AND THE ENVIRONMENT,”



DRY-STORAGE AREA FOR RADIOACTIVE CAPSULES NEARLY COMPLETE AT HANFORD

RICHLAND, Wash. – Construction is almost complete on a dry-storage area for 1,936 radioactive cesium and strontium capsules currently housed in an underwater basin at the nearby Waste Encapsulation and Storage Facility (WESF) at the Hanford Site.

Following construction of two large concrete storage pads last fall, EM Richland Operations Office contractor Central Plateau Cleanup Company (CPCCo) continued activities this spring with installation of lighting, a fire protection pipeline, and fencing around the pads, as well as paving a new road for the half-mile transfer of the capsules from the WESF. Final construction activities, which include rerouting overhead electrical utilities to support movement of the capsules, are expected to be finished this month.

The capsules have been stored at the WESF since the mid-1970s. The cesium and strontium were removed from tank waste at Hanford to reduce the temperature of the waste inside the tanks.

“Completion of the dry-storage area is a key accomplishment and gets us another step closer to moving the capsules out of the aging WESF facility,” said Gary Pyles, EM federal project director. “While the capsules are currently in a safe and compliant configuration, transferring the capsules to dry storage will enable the planned deactivation of the WESF and reduce the risk and cost for storage of the capsules.”

The capsules will be placed in stainless-steel-and-concrete casks before being moved to the dry-storage pad. The dry cask storage system is designed for passive cooling by the airflow within the cask. This same system is used at commercial nuclear power plants. Storing the capsules this way will also reduce annual operating costs by an estimated \$6 million.



Earlier this year, CPCCo awarded a \$9.5 million construction subcontract to Apollo Mechanical Contractors, Inc. to make the necessary structural and utility-related modifications to the WESF and install the system needed to transfer the capsules to the dry-storage casks.

“Our team has made tremendous progress over the past year on several key components of this challenging project,” said Mark Buckmaster, CPCCo capsule transfer project manager. “We look forward to continuing to work with the DOE and our other partners to keep the momentum going on this critical risk-reduction effort.”

Movement of the capsules to the dry-storage area is expected to be completed in 2025. ■



HANFORD COMMUNITIES

FALL 2021 NEWSLETTER

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



IN THIS ISSUE:

- 01 Hanford Leaders Engage Public to Shape Future Cleanup
- 02 Hanford Releases New Direct-Feed Low-Activity Waste Program Animation
- 03 Hanford Tank-Side Cesium Removal System Readied to Treat Tank Waste
- 04 Women Engineers at Hanford Guide Colleagues Toward Career Success
- 05 Hanford Treats More Than 2 Billion Gallons of Groundwater Seven Years in a Row
- 06 Hanford Plant Completes Startup Testing
- 07 Hanford Breaks Ground on Water Treatment Facility to Support Tank Waste Treatment

FEATURED



HANFORD LEADERS ENGAGE PUBLIC TO SHAPE FUTURE CLEANUP

OFFICE OF ENVIRONMENTAL MANAGEMENT

The Hanford Site's 5-Year Plan outlines cleanup work at the site, including waste vitrification at the Low-Activity Waste (LAW) Facility, pictured.

As part of a continuing commitment to public involvement, EM leaders at the Hanford Site are engaging the public to help shape cleanup priorities in the site's 5-Year Plan.

"The Department prioritizes projects based on assessed risk, legal requirements, and public priority input," EM Hanford Site Manager Brian Vance said. "Public input is vital to our prioritization process, reflecting the values of those living and working around the site, with vested interests in safe, effective, and timely cleanup progress. The goal of this approach is to engage more members of the public who are affected by our cleanup effort, and who are not currently participating in the process."

Hanford focuses on safe cleanup every day by delivering risk reduction, conducting environmental remediation, and preparing for the start of treating tank waste. While the 5-Year Plan outlines the cleanup work to be initiated or completed during fiscal years 2022 to 2026, the focus of public input is fiscal years 2024-2026, the three fiscal years in the 5-Year Plan in which budgets have not yet been formulated or submitted.

The EM Richland Operations Office (RL) and Office of River Protection (ORP) have implemented a dedicated website as part of their public involvement strategy for the Hanford Site. The website includes the draft 5-Year Plan update, fact sheets relevant

CONTINUED ON PAGE 2

- CONTINUED

to the priorities defined in the update, and a survey for input.

Through this engagement, RL and ORP are focused on increasing awareness of Hanford cleanup priorities and gathering input on priorities that can influence the budget formulation process for fiscal years 2024-2026. The budget for fiscal year 2022 is already in the appropriations process, and the budget for fiscal year 2023 is already in the formulation process.

RL and ORP leaders briefed Tribal Nation staff on the draft 5-Year Plan on Oct. 19. The following day, they briefed members of the Hanford Advisory Board and greater public. The Oct. 20 briefing was recorded and posted to the [5-Year Plan engagement website](#). In addition to establishing a dedicated website and using social media platforms and mailing lists to solicit input, RL and ORP also worked with community leaders and stakeholder organizations to expand their reach to more people. ■

HANFORD RELEASES NEW DIRECT-FEED LOW-ACTIVITY WASTE PROGRAM ANIMATION

OFFICE OF ENVIRONMENTAL MANAGEMENT



A new animation of the Direct-Feed Low-Activity Waste (DFLAW) Program at the Hanford Site shows the integrated procedure that achieves tank waste treatment. That process is a key component of EM's strategic cleanup vision.

The process starts with tank retrievals and runs through final disposal in the Integrated Disposal Facility. This animation will be used to educate the public, stakeholders, and employees on how the process works from start to finish to treat tank waste safely and efficiently through the DFLAW Program. Hanford plans future animations that will dive deeper into the complex waste treatment and vitrification process.

“Direct-feed” means Hanford’s tank waste will be separated at a tank farm to remove solids and cesium, then fed directly to the Waste Treatment and Immobilization Plant’s Low-Activity Waste Facility for a complex process called vitrification that will immobilize the waste in glass.

View the animation [here](#). ■



ECOLOGY'S "LET'S TALK ABOUT HANFORD" - A YEAR IN REVIEW

The sixth event in this series features some of Ecology's top Hanford experts to share a few highlights of recent Hanford Site cleanup, show a presentation on the most significant projects completed or underway, followed by a live Q&A.

When: Thursday, January 13, 5:30pm

Where: Online via [Facebook](#) & [WebEx](#)

HANFORD TANK-SIDE CESIUM REMOVAL SYSTEM READIED TO TREAT TANK WASTE

OFFICE OF ENVIRONMENTAL MANAGEMENT

The Hanford Site is on the verge of initial radioactive and chemical waste treatment.

Today, EM announced construction and readiness assessments are complete on the Tank-Side Cesium Removal (TSCR) system at Hanford, an EM 2021 priority.

Transitioning TSCR from the building and testing phase to operations is a major step toward treating tank waste.

To view the ceremony marking the completion of TSCR construction and readiness assessments, as well as additional TSCR information, click [here](#).

“Completing TSCR construction this year was a top priority for the Department of Energy’s Office of Environmental Management,” said Brian Vance, manager of the EM Office of River Protection (ORP) and Richland Operations Office. “For the first time, we will be able to treat a significant amount of Hanford’s tank waste. This is an exciting and historic time.”

The TSCR system will remove radioactive cesium and undissolved solids from waste currently stored in large underground tanks in preparation for vitrification — the process of immobilizing waste in glass.

The waste treated through TSCR will be stored in a double-shell tank until it is fed directly to the Waste Treatment and Immobilization Plant’s Low-Activity Waste (LAW) Facility. In the LAW Facility, the waste will be mixed with silica and other glass-forming materials. The mixture will be fed into melters and heated to 2,100 degrees Fahrenheit.



Brian Vance, manager of the Office of River Protection and Richland Operations Office, left, is given a tour of the Tank-Side Cesium Removal (TSCR) system ancillary enclosure by John Eschenberg, president and CEO of Washington River Protection Solutions.



Hanford Site leadership is handed a symbolic key from Washington River Protection Solutions (WRPS) to indicate construction and readiness assessments are complete on the Tank-Side Cesium Removal system.

“We expect to begin heating up the first melter inside the LAW Facility by the end of this year,” said Vance. “When each piece comes together, it’s a cause to celebrate, because we’ve come one step closer to our goal of treating tank waste.”

TSCR is critical to beginning the treatment process using Hanford’s Direct-Feed Low-Activity Waste (DFLAW) Program, a system of interdependent projects and infrastructure improvements, managed and highly integrated as a single program, that will operate together to vitrify the waste.

Click [here](#) to view an animation of the DFLAW Program process.

ORP tank operations contractor Washington River Protection Solutions designed the TSCR system and managed the construction and installation by subcontractors AVANTech, Atkins Nuclear Secured, Fowler General Construction, and Apollo.

“This is the culmination of nearly three years of coordinated work, from design, construction, and now operations, all done in the midst of a pandemic,” said John Eschenberg, WRPS president and CEO. “We are just weeks away from being able to operate TSCR. We are now transitioning our workforce from construction and testing activities to full-on 24/7 operations. This is an accomplishment that we all are very proud of.”

WRPS was able to complete the project on time, while keeping workers safe during the COVID-19 pandemic.

TSCR relies on a technology that was deployed successfully at several locations worldwide, including the Fukushima Daiichi nuclear power plant cleanup in Japan. It uses a design concept similar to that of a unit built for DOE’s Savannah River Site in South Carolina.

TSCR is targeted to begin treating waste in early 2022 in preparation for DFLAW operations to begin by the end of 2023.

WOMEN ENGINEERS AT HANFORD GUIDE COLLEAGUES TOWARD CAREER SUCCESS

FROM THE OFFICE OF ENVIRONMENTAL MANAGEMENT

A group of women engineers with EM Office of River Protection (ORP) tank operations contractor Washington River Protection Solutions (WRPS) has established a series of monthly lunchtime presentations aimed at empowering and mentoring woman engineers.

"Engineering is a very competitive field," said Elaine Porcaro, chief engineer for ORP Tank Farms Projects. "It is inspiring to see that these women have taken the initiative to establish a forum to support and promote each other, sharing their successes and key learnings in order to pave the way for other women to be successful."

During the most recent virtual presentation, former Air Force Cpt. Bree Smith shared some things she has learned as a military leader and engineer at the Hanford Site.



Bree Smith, a former Air Force captain, works as an engineer with EM Office of River Protection tank operations contractor Washington River Protection Solutions.

Smith and her husband, Greg, started working for WRPS as engineers after wrapping up successful careers in the Air Force.

"In the military we were 100 percent equal," Smith said when asked whether she felt she and her husband were treated equally in their similar roles at WRPS. "Here, we have had different opportunities, but only because we're in different groups and management opportunities opened up for him before they did for me."

Smith admits that it took her a little longer to vocalize her career goals. "When I first started at WRPS I was working on the 242-A Evaporator," she said. "It didn't take me long to realize that I don't like pipes and valves. It was a different type of engineering than I had trained for, and I was timid because I felt inadequate in the mechanical engineering realm."



Bree Smith and her husband, Greg, pictured, are former Air Force pilots who now support Hanford cleanup projects as engineers for Washington River Protection Solutions.

She dug in and was determined to learn everything she could about the facility that evaporates water from tank waste as well as tank operations. She was intentional about identifying her weaknesses, establishing a plan to overcome them, and then clarified her career goals for herself before sharing them with her manager and reaching out to other managers within WRPS.

"I had the opportunity to attend the Waste Management conference and met fellow WRPS engineers, and that's when I learned about other aspects of engineering on the site that were more to my liking," Smith said.

Smith now works in the engineering group for the waste feed delivery operations and planning group at WRPS. Her presentation as part of the monthly Women in Engineering Speaker Series outlined foundational elements women should consider while navigating their career paths:

Relationships: Establish workplace partnerships and mentorships with your co-workers and managers.

Engagement: Get involved in your company by volunteering for projects that may be outside of your normal scope or comfort zone.

Education and Growth: Be curious about other aspects of your project and other projects and departments; ask for feedback from all avenues and find ways to apply it.

Enthusiasm: Seek out responsibilities that will gain you experience and maturity; define your passions and correlate those to your professional goals.

Smith encourages women to be intentional about volunteering for leadership roles within their company. She also seeks out opportunities to reach out to others through programs like the Women in Engineering Speaker Series to provide encouragement to other engineers who are trying to navigate their own careers.

The speaker series, while led by and focusing on women engineers, is open to men and women in other career fields as well. ■

HANFORD TREATS MORE THAN 2 BILLION GALLONS OF GROUNDWATER SEVEN YEARS IN A ROW

The 200 West Pump-and-Treat Facility is the largest groundwater treatment plant at the Hanford Site.



The Hanford Site is closing in on treating 28 billion total gallons of groundwater to remove contamination since treatment began in the mid-1990s, significantly reducing risk to the Columbia River. That is a volume roughly equal to the amount of water that flows over Niagara Falls in 12 hours.

The Hanford Site is closing in on treating 28 billion total gallons of groundwater to remove contamination since treatment began in the mid-1990s, significantly reducing risk to the Columbia River. That is a volume roughly equal to the amount of water that flows over Niagara Falls in 12 hours.

Operators will treat nearly 2.4 billion gallons of groundwater in fiscal 2021 alone, which ends Sept. 30. This is the seventh consecutive year Hanford has treated more than 2 billion gallons of groundwater to remove contamination caused by decades of producing plutonium for the U.S. nuclear weapons program.

“Protecting the Columbia River was our primary goal when groundwater cleanup began more than 25 years ago, and it continues to drive our treatment efforts today,” said Mike Cline, EM Richland Operations Office (RL) project director for cleanup of soil and groundwater at Hanford.

RL contractor Central Plateau Cleanup Company (CPCCo) operates six treatment systems to remove radioactive and chemical contaminants from groundwater along the Columbia River and on Hanford’s Central Plateau, located near the center of the site. This is where massive chemical processing facilities separated plutonium from fission products from the 1940s through the 1980s, discharging billions of gallons of contaminated liquids into soil disposal sites.

“THE EFFICIENCY AND RELIABILITY OF OUR TREATMENT SYSTEMS ARE KEY COMPONENTS OF HANFORD’S GROUNDWATER PROGRAM SUCCESS, BUT IT’S THE EXPERIENCE AND PROFESSIONALISM OF OUR OPERATORS AND SUPPORT TEAMS THAT ALLOW US TO MEET OUR TREATMENT GOALS YEAR AFTER YEAR,”

said Mark Cherry, director of CPCCo soil and groundwater operations.

Hanford’s treatment systems have removed about 600 tons of contaminants over the life of the groundwater cleanup mission, including most of the chromium contamination along the Columbia River, as well as other contaminants of concern, such as carbon tetrachloride, uranium, and technetium-99 on the Central Plateau. ■



The 100-HX Pump-and-Treat Facility is one of five treatment facilities that removes contaminants from groundwater along the Columbia River at Hanford.



Electrician *Ralph Bisla* conducts tests of the finishing line inside the Low-Activity Waste Facility at Hanford's Waste Treatment and Immobilization Plant.

OFFICE OF ENVIRONMENTAL MANAGEMENT

HANFORD PLANT COMPLETES STARTUP TESTING

The Hanford Waste Treatment and Immobilization Plant has completed all startup testing of components and systems associated with transforming low-activity tank waste into a safe form for disposal.

This accomplishment moves the plant fully into the commissioning phase where final steps are taken to prepare for vitrifying, or immobilizing in glass, radioactive and chemical waste as part of Hanford's Direct-Feed Low-Activity Waste (DFLAW) Program.

"It was a huge milestone for the startup team to transfer the final DFLAW systems to the care, custody, and control of plant management," said Valerie McCain, project director and senior vice president for Bechtel National, Inc., the prime contractor designing, building, and commissioning the plant. "We are in the final phase of our preparations to start vitrifying waste."

The DFLAW Program is a system of interdependent projects and infrastructure improvements, managed and highly integrated, that must operate together to vitrify the waste.

"With the completion of startup testing, we can focus on commissioning and establishing the operating culture necessary to safely begin a new era of operations at Hanford," said Mat Irwin, Office of River Protection deputy assistant manager for the plant.

"ALL CONTRACTORS ARE DRIVING TOWARD 24/7 OPERATIONS TO ENSURE WE CAN OPERATE THE PLANT SUCCESSFULLY."

During vitrification, waste is treated to remove radioactive cesium and solids and will be fed directly to the plant's Low-Activity Waste Facility melters. The waste and glass-forming materials will be mixed, heated, and poured into specially designed stainless-steel containers. The containers will be transported a short distance to the site's Integrated Disposal Facility for disposal.

The plant facilities can be viewed using the self-guided [Hanford Virtual Tour](#). ■



OFFICE OF ENVIRONMENTAL MANAGEMENT

Hanford leadership participate in a groundbreaking ceremony for the new Hanford Central Plateau Water Treatment Facility.

HANFORD BREAKS GROUND ON WATER TREATMENT FACILITY TO SUPPORT TANK WASTE TREATMENT

Construction of a new water treatment facility has begun on the Hanford Site, in support of the Direct-Feed Low-Activity Waste (DFLAW) Program and future cleanup work at the site.

EM Richland Operations Office contractor Hanford Mission Integration Solutions (HMIS) awarded the construction contract to a local business, Fowler General Construction, Inc., which began construction last month.

Hanford Site leadership participated in a formal groundbreaking for the 10,000-square-foot Central Plateau Water Treatment Facility. The facility will automate water services by providing all potable water to the cleanup hub of the Hanford Site, the Central Plateau, and also will support tank waste treatment operations. The Central Plateau contains Hanford's former processing facilities, current site operations, and the Waste Treatment and Immobilization Plant. Watch the groundbreaking here.

"Well beyond the start of DFLAW and the transition to 24/7 operations, we're looking at the next several decades of cleanup, and this water facility will provide services to the entire site for that period of time," EM Office of River Protection and Richland Operations Office Manager Brian Vance said.

"IT'S ONE OF MANY PROJECTS WE HAVE NOW IN PLACE THAT ARE GOING TO SET THE CONDITIONS FOR FUTURE WORK AT THE SITE."

The effort to successfully treat and vitrify, or immobilize in glass, Hanford tank waste for safe disposal will increase the demand for a reliable water supply at facilities and for fire suppression capabilities. The new water facility will produce a minimum of 3.5 million gallons of clean water daily, with the ability to expand to 5 million gallons daily if demand increases. That compares to 2.1 million daily gallons treated currently, but with a completely different system.

HMIS will manage construction of the water facility, scheduled to finish by mid-2023.

"We take great pride in our role in the Hanford mission to support all cleanup progress, including long-term tank waste treatment and risk reduction," said Bob Wilkinson, HMIS president.

The modernized water treatment facility supports a shift to 24/7 operations set to begin on the Hanford Site by the end of 2023 with the start of tank waste treatment. ■



A rendering of the completed Central Plateau Water Treatment Facility, now under construction on the Hanford Site in support of the Direct-Feed Low-Activity Waste Program.