

# HANFORD COMMUNITIES

SPRING 2021 NEWSLETTER

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



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## 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. ■

## HANFORD LIVE! 2021 | JUNE 16<sup>TH</sup>

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>

# 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!**



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

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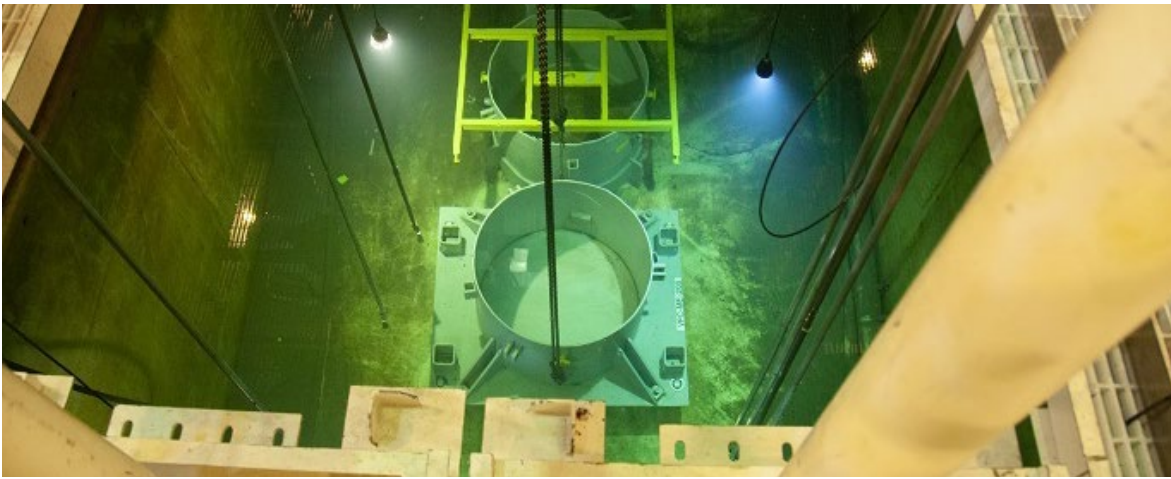


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FROM THE OFFICE  
OF ENVIRONMENTAL  
MANAGEMENT

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.”

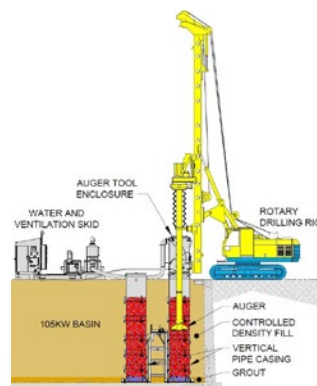
Waste material left in the K West Reactor Basin after 60 years of fuel storage operations—such as contaminated

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.

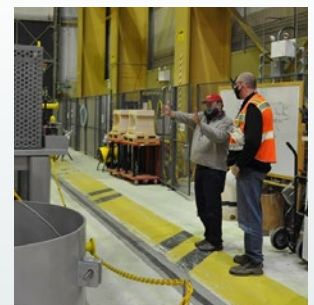
“Our skilled team continues to make excellent progress installing the stabilization system,” said Matt St. Germaine, contractor operations manager for the project. “This effort builds on the successful removal of radioactive sludge from the basin and maintains our focus on reducing risk to the nearby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





# 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

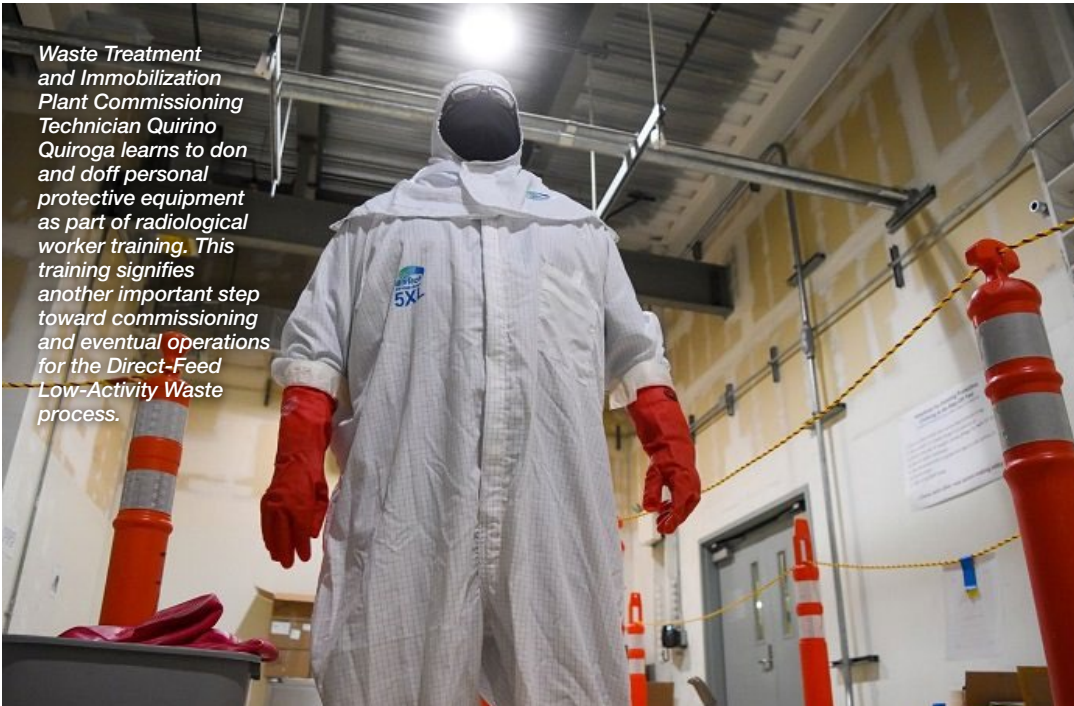
the utilities and process systems are integrated and ready to support future plant operations.

“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. ■





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.

# TRAINING GOES “RAD” AT HANFORD WASTE TREATMENT PLANT

FROM BECHTEL NATIONAL

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. ■