HANFORD COMMUNITIES

SUMMER 2021 NEWSLETTER

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

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FEATURED

FEDERAL INFRASTRUCTURE FUNDING INVESTMENT WILL PAY DIVIDENDS IN PROGRESS AT HANFORD

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

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

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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.

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 competed 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?

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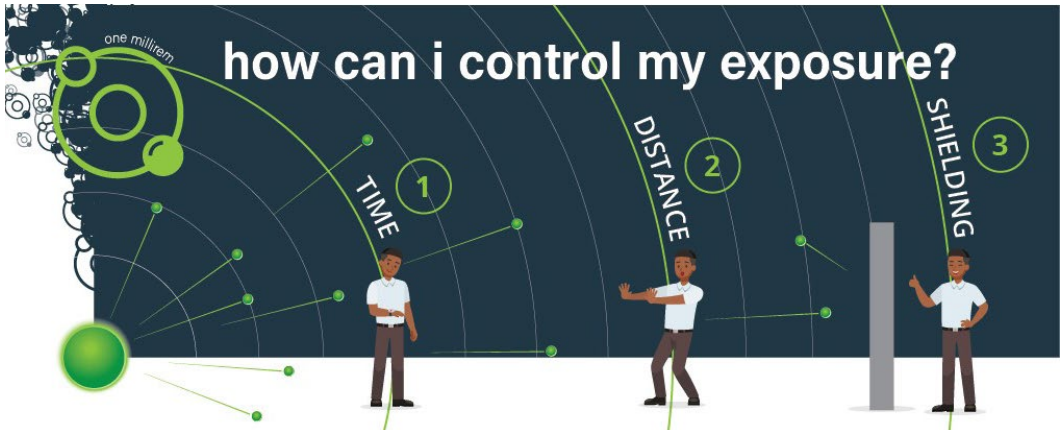
HANFORD LAUNCHES OUTREACH CAMPAIGN TO DELIVER RADIATION-SAFETY EDUCATION

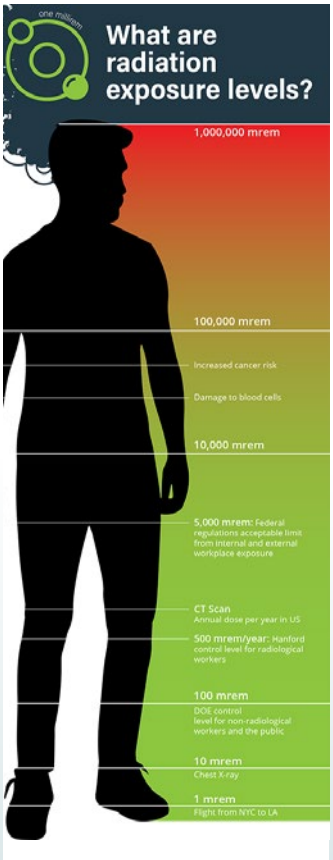
OFFICE OF ENVIRONMENTAL MANAGEMENT

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.



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," 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. ■

OFFICE OF ENVIRONMENTAL MANAGEMENT

DRY-STORAGE AREA FOR RADIOACTIVE CAPSULES NEARLY COMPLETE AT HANFORD

Construction is nearly complete on an outdoor dry storage area, bottom left, built to hold casks containing nearly 2,000 radioactive capsules currently located in an underwater basin at the nearby Waste Encapsulation and Storage Facility.

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. ■

EM contractor Central Plateau Cleanup Company installed lighting and fencing around two large storage pads this spring.