December 11, 2024

Comments Submitted Electronically at: https://nw.ecology.commentinput.com/?id=jMTW7aPeh
Washington State Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354

RE: Public Comment Period for TSCR Mechanical Connections Class 2 Permit Modification

To Whom It May Concern:

Thank you for the opportunity to submit comments on the Tank-Side Cesium Removal Mechanical Connections Class 2 Permit Modification. We appreciate Washington State Department of Ecology's (Ecology) efforts to share information about the permit modification in a public meeting on October 30, 2024.

Hanford Challenge is a non-profit, public interest, environmental, and worker advocacy organization located in Seattle, WA. We are an independent 501(c)(3) organization incorporated in the State of Washington since 2008 and registered in Oregon. Our mission is to create a future for the Hanford Nuclear Site that secures human health and safety, advances accountability, and promotes a sustainable environmental legacy.

Hanford Challenge has members who work at the Hanford Site. Other members of Hanford Challenge work and/or recreate near Hanford, where they may also be affected by hazardous materials emitted into the environment by Hanford. All members have a strong interest in ensuring the safe and effective cleanup of the nation's most toxic nuclear site for current and future generations, and who are therefore affected by conditions that endanger human health and the environment.

Hanford Challenge is concerned that the U.S. Department of Energy (USDOE) is prioritizing Direct-Feed Low-Activity Waste operations and the needed efficiency of the Tank-Side Cesium Removal (TSCR) system for the success of tank waste treatment over worker health and safety. The Class 2 permit modification proposes that if weeps and seeps occur in the TSCR system, that operations continue, and the leaks be visually monitored until a maintenance outage occurs. The only situation under which operations would stop due to a weep or seep is if the leak activated the leak detection system, which would require a leak of seven gallons per hour. Operations should stop as soon as the leak is detected.

TSCR is a demonstration project and according to the permit it is expected to operate for five years. However, the latest Hanford 5-Year Plan anticipates the construction and start of operations of TSCR's replacement, the Advanced Modular Pretreatment System (AMPS), in FY2029. TSCR started operations in January 2022 and therefore would operate for at least seven years, until AMPS comes online. Given the multiple leaks discovered since TSCR started operations, its purpose as a test demonstration project, concerns with Hanford's nuclear safety culture, and the longer than anticipated length of operations,

Hanford Challenge disagrees with the proposed changes and believes TSCR operations should stop when a weep or seep is discovered.

Thank you for considering the following comments:

Improve the Public Process- We appreciate receiving a redlined version of the permit after asking for it at the public meeting on October 30, 2024. However, the redlined version of the permit should have been included when the comment period opened on October 7, 2024. Without the redlined version, we were unable to easily see what the proposed changes were and therefore could not fully prepare for the public meeting. For future comment periods on permit modifications, please include the redlined version of permit when the comment period opens.

Increase Transparency- Increase the level of detail provided in public involvement materials. The four-page fact sheet for this comment period contained only two sentences describing the proposed changes to the permit:

> *"Any minor weeps/seeps at mechanical connections that are observed by remote cameras but are insufficient in volume to activate the leak detection system would be addressed during the next maintenance outage. Daily visual inspections ensure weeps/seeps do not worsen and pose a threat to workers or the environment."*

For future fact sheets, please include more details about the proposed changes. For example, how often do maintenance outages occur? What volume of leaked waste is enough to activate the leak detection system? How many weeps and seeps has TSCR had since the start of operations in January 2022? How long will TSCR be in operation? Where are the weeps and seeps occurring in the system and are they happening before the waste is treated, after or both? The fact sheet fails to share important details with the public that can help them understand the proposed changes and make informed comments. Without this information, the comment period is not meaningful.

In addition, increase transparency during public meetings. For example, during the public meeting for this comment period we had to ask the question: “How often do maintenance outages occur?” multiple times before we received a direct answer. In the future, provide direct answers to direct questions instead of obfuscating the answer with unnecessary details.

Stop TSCR Operations When Weeps and Seeps are Discovered- Section C.6.4 Tank Management Practices proposes changing the course of action when a weep or seep is discovered by continuing with operations, monitoring the leak, and addressing it during the next maintenance outage. The only reason to stop operations would be if the volume of the leak is sufficient to activate the leak detection system. This is unacceptable. Leaks are nothing new to the TSCR system—documented leaks occurred in October 2022, December 2022, March 2023, July 2023, and December 2023. When these leaks occurred, operations were stopped to fix the issue which allowed for design changes and repairs. For example, threaded connections were eliminated in the TSCR system where possible and a vent hose was completely redesigned. Past leaks flagged an issue in the system and provided the opportunity to make changes as soon as the leak was noticed. If a leak is allowed to continue unremedied for upwards of 30 days (which is how often maintenance outages occur), the site could be faced with a much more significant leak that could have been avoided if it was fixed as soon as the leak was detected. A root cause analysis should be conducted for all newly discovered leaks.

Hanford Challenge strongly prefers that TSCR operations stop when a weep or seep is first identified to allow for the immediate remedy of the leak. However, if the permit modification proposed changes are adopted, we encourage the addition of language regarding what to do when the leak visually changes. During the public meeting on October 30, 2024, it was verbally shared that if a visual change was noted in the weep or seep then the contractor would shut down operations and go in to fix the leak. The permit modification does not include language to this effect. Please add to the permit Section C.6.4 Tank Management Practices that if a visual change is noted in the weep or seep that operations will stop to fix the leak.

Get Third Party Review and Input on this Permit Modification- The Defense Nuclear Facilities Safety Board (DNFSB) has been integral in tracking recurring issues with the TSCR system. Include them and others in reviewing the changes proposed in this permit modification to ensure the safest policy for workers.

Protect Workers from Unnecessary Exposures- Continuing with TSCR operations when a leak is found instead of shutting down the system and immediately fixing the leak is dangerous to workers. Allowing weeps and seeps to build up on the mechanical connections means that when workers do enter the facility they will be exposed to an increased dose. USDOE's As Low As Reasonably Achievable (ALARA) policy for protecting workers from unnecessary exposures is not honored by these proposed permit modifications. Protect workers from unnecessary exposures and dose by stopping TSCR operations when weeps and seeps are discovered.

Ensure Better Oversight and Improve Hanford's Safety Culture- The DNFSB wrote a letter to USDOE on October 6, 2022 about concerns with the TSCR threaded connections. The letter outlines multiple concerns including Washington River Protection Solutions' failure to adhere to the safety requirements of the American Society of Mechanical Engineers' nuclear quality assurance (NQA)-1 standard, *Quality Assurance Requirements for Nuclear Facility Applications*; failure to conduct a rigorous cause analysis to determine the cause of the damage discovered on the threaded connections; failure to consider how the damage may have affected the strength and durability of the connection, therefore possibly compromising the structural integrity safety function; and relying solely on "skill of craft" to ensure connections have adequate thread engagement to prevent separation in the event of a postulated flammable gas explosion, increasing the potential for a serious accident and harm to workers. While it does not specifically reference leaks, the letter highlighted weaknesses in the TSCR system regarding the threaded connections and the contractor's disregard for nuclear safety and quality assurance.

In addition, some of the subsequent leaks in the TSCR system were found at the threaded connections, providing further evidence that complete disregard for nuclear safety and quality assurance can lead to more problems down the road. This is a systemic issue at Hanford. Hanford Challenge urges USDOE to ensure better oversight of nuclear safety and quality assurance. USDOE should also make efforts to renew its commitment to improving the safety culture at Hanford.

Finally, we'd like to bring your attention to the following questions:

Section C.2.2 Ion Exchange- The permit states,

> *"IXC change-out will require approximately ten days of downtime; of which, up to four days will be used for drying the spent IXC. However, should an increase in operational efficiency be*

required to meet processing goals, drying can be completed in one day reducing the downtime associated with column change-out."

How can the ion-exchange column (IXC) be dried in one day if needed, when the normal drying time is four days? Will the contractor increase the amount of drying air going through the columns? If the IXCs are not properly dried under rushed circumstances, is it fair to assume that the columns will not capture as much cesium? How will this shorter drying time impact worker health and safety?

Thank you for considering our comments.

Nikolas Peterson, Executive Director