

HANFORD CHALLENGE AT WORK

Mission Statement: We will help create a future for Hanford that secures worker and public health and safety, advances accountability and promotes a sustainable environmental and economic legacy for the Tri-Cities and beyond.

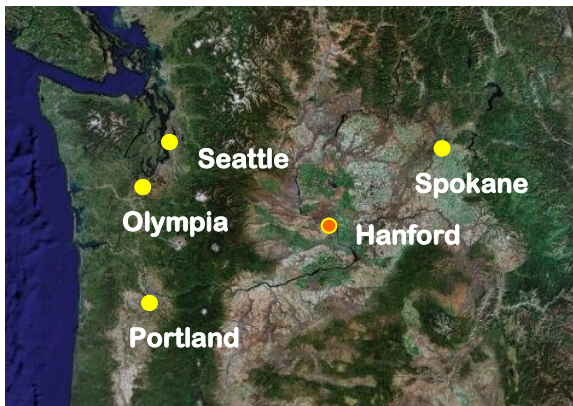


BACKGROUND

Hanford Challenge was envisioned and formed by Tom Carpenter, longtime director of the Government Accountability Project's Nuclear Oversight Program. During his decades as a nuclear oversight and workers rights advocate, Carpenter recognized the need for a new way of thinking about the situation. Hanford Challenge approaches Hanford from a systems perspective with the goal of transforming the cleanup of the Hanford site to one that is protective of people, the environment and all affected communities. Hanford Challenge intends to work across the spectrum of interested parties to forge a common vision.

THE CHALLENGE

The 586 square mile Hanford site is home to several major cleanup operations, each with its own set of challenges. Given the size and complexity of Hanford, identifying the main problems is itself a challenge. We are actively engaged in two specific issues - worker safety and the management and disposition of the large volumes of extremely hazardous high-level nuclear waste, much of it stored in Hanford's Tank Farms. As part of the high-level waste issue, we are tightly focused on the Waste Treatment Plant, where some of the high-level waste may eventually be mixed with molten glass in a process known as "vitrification." We are also working to address the major underlying issue: the lack of a strategic vision for Hanford cleanup that incorporates the priorities of the many stakeholders, and the disconnect between the reality of the problems and proposed solutions.



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AT WORK

Worker Safety in the High-Level Radioactive Waste Tank Farms - Improving the safety culture in Hanford's Tank Farms is crucial to managing the site's

gravest environmental and health threat. In the Tank Farms, 177 aging tanks hold 53 million gallons of highly radioactive, highly toxic liquid waste. Current operations involve moving waste from failing tanks into more modern tanks prior to treatment. During these activities, vapors from the tanks often vent into the environment where unprotected workers are present. The chemical makeup of these vapors are not well known and indeed may not be completely knowable. With millions of curies of radioactivity and high temperatures, the toxic (nonradioactive) chemical contents of the tanks are constantly undergoing reactions.

Given the incomplete knowledge and potential danger, a conservative approach to worker safety should be taken where exposure to vapors from the tanks is a possible risk. Hanford's expert technical reports deem it safe for anyone more than 5 feet from the source of the vapors¹. Regardless of the pedigrees of these reports, workers are still getting very sick from vapors and often show neurological symptoms consistent with chemical exposure. There is a lack of effective monitoring in Tank Farm work areas for mercury or many of the hundreds of toxic chemicals that are known to be in the vapors.

Hanford Challenge uses well-established professional relationships with the US Department of Energy (DOE), Washington State, and site contractors to push for comprehensive monitoring of tank vapors

and access to protective equipment for Tank Farm workers. In this case, that means supplied air for all workers during tank operations. Slow progress is being made, much of it accomplished in the last few years through the Hanford Concerns Council. HCC is an independent forum for resolving safety, health, and environmental concerns for workers at the Tank Farms and other areas. The Council, founded by Tom Carpenter and a major Hanford contractor, uses collaborative, results-based methods to address concerns without undue focus on the person raising them.

Waste Treatment Plant - The proposed solution to Hanford's tank waste problem is a giant vitrification facility known as the Waste Treatment Plant. WTP will mix radioactive waste with melted glass which, when it solidifies, provides the best known storage medium for radioactive waste.

Unfortunately, technical and management problems have slowed progress at WTP while costs have ballooned from \$4.6 billion to over \$12 billion. WTP has earned a reputation for poor design, substandard materials and the selection of overly complicated technologies. The Nuclear Regulatory Commission (NRC) issued a report in 2001 that listed dozens of safety issues and placed the unmitigated risk of a major radiological accident at 50 percent over the course of WTP's 28 year operating lifespan. DOE, which took over regulatory control from NRC has not addressed any of these issues publicly.

The danger of *not* treating the waste is another major consideration. The tanks are old and failing. Tank waste has already hit the groundwater that flows into the Columbia River. Ineffective designs, cost overruns, and mismanagement that delay vitrification increase the risk to our health and environment from leaking tanks.

Hanford Challenge works closely with former and current WTP workers who have helped us uncover contractor mismanagement, the installation of faulty equipment, and insufficient design specifications. This inside information leads us to conclude that DOE is not capable of regulating itself. We believe the NRC should resume regulatory oversight at WTP as the only government entity with the experience and rigor to assure safe operations. To this end, we have been engaging the congressional delegations of Washington and Oregon, talking directly to the NRC, and building support for better oversight within the government of the State of Washington.

Contacts with engineers and scientists from WTP and elsewhere have turned up new means of treating the tank waste that could be more efficient. One promising route is to vitrify the waste in iron phosphate glass, instead of the current borosilicate glass formulation. Developed in Russia for their liquid radioactive waste, iron phosphate glass is more robust and could eliminate the need for the complicated pretreatment and filtration processes that have proved most challenging.

The Hanford Summit - In spring 2009, Hanford Challenge will sponsor what we hope will be the first of many Hanford Summits. The first event will be moderated gathering of interested stakeholders to form the necessary alliance to reform cleanup. We envision that the Summits will bring together public interest groups, Tri-Cities economic interests, contractors, workers, academics, technical specialists, Tribes, and local and state governments to form a coalition that has the strength to turn around the situation at Hanford. Various stakeholders have already expressed enthusiasm for the Summit.

The coalition will identify what elements of cleanup are working, those that are not and address the root causes of the current dysfunction. The strategic vision developed in these Summits would replace the shortsighted "crisis management" model that has ruled Hanford cleanup for decades.

SOURCE

1. CH2M HILL's *Industrial Hygiene Chemical Vapor Technical Basis, 2004.*