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## **Hanford gets deadlines to fix underground contamination**

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The Hanford nuclear reservation now has deadlines of three to nine years to fix its plumes of underground radioactive and chemical contamination next to the Columbia River.

The last of the riverside plumes of radioactive liquids should be addressed by 2018, according to an August agreement that the U.S. Department of Energy signed with the U.S. Environmental Protection Agency and Washington's Department of Ecology.

DOE's Hanford Manager David Brockman briefed the Hanford Advisory Board on the agreement Thursday in Seattle. The 32-member board represents the Hanford political spectrum, including environmentalists, workers, Tri-Cities interests, health groups and others.

This is the first time that cleanup deadlines have been nailed down for the subterranean riverside contamination.

During much of Hanford's Cold War days of producing plutonium, about 450 billions gallons of non-radioactive and slightly radioactive fluids -- about 125 different contaminants --- were dumped directly into the ground. About 80 square miles of ground water in the 586-square-mile site have been polluted above safe drinking standards.

Much of that contamination is among the nine former reactor sites along the Columbia River.

The worst riverside contaminants are radioactive uranium and strontium plus nonradioactive chromium. Chromium can kill newly hatched salmon. And most of the remaining major salmon spawning grounds in the main Columbia River are within Hanford.

So far, the Columbia River's sheer volume has diluted the contaminants enough to prevent harm to humans. But the nastiest of Hanford's underground wastes has not yet oozed from the site's center to the river.

The August agreement calls for neutralizing the riverside chromium by 2012, the riverside strontium by 2016, and the riverside uranium by 2018. The two main fix-it methods are pumping the contaminated water out of the ground and treating it, or injecting substances into the ground to create subterranean chemical barriers that the contaminants cannot pass.

That will still leave underground contamination in central Hanford, where the bulk of the fluids was dumped -- and where the reservation is the most contaminated.

In addition last week, the board told DOE, EPA and the Ecology Department that it wants to extend the public comment period on a tentative agreement to significantly stretch the schedule to deal with Hanford's most radioactive wastes.

The state and feds announced the proposed agreement on Aug 11. The current public comment period extends to Nov. 4. But board members want the comment period extended at least a month to give everyone more time to comment.

Hanford's worst problem is 53 million gallons of highly radioactive fluids and sludge in 177 huge underground tanks in the center of the site -- 149 old, leak-prone single-shell tanks and 28 newer safer double-shell tanks. So far, at least 1 million gallons of these wastes have leaked into the ground, joining the lesser contaminants.

Hanford's master plan is to move all the wastes from the single-shell tanks into the double-shell tanks, while building a massive complex to convert the wastes into glass -- with the radioactive materials bound within -- that will last at least 10,000 years. The glass was supposed to be stored inside Yucca Mountain, Nevada, a plan that Nevada -- led by U.S.Sen Harry Reid, D-Nev. -- has successfully fought, leaving DOE with no permanent storage site.

The Tri-Party Agreement -- the legal contract between the feds and the state that governs Hanford's cleanup -- had called for the glassification complex to begin operations in 2011 and to finish its task by 2028.

The tentative new deadlines calls for the complex to start test runs of glassification in 2019, be fully operational by 2022 and finished by 2047.

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This would be the fourth time that the glassification start date has moved back since 1999. Meanwhile, the project's price tag has climbed from \$4 billion to \$12.2 billion in the past several years.

Brockman also said all the leftover plutonium to be removed from Hanford will be gone by Sept. 30 -- sent to either DOE's site at Savannah River, S.C, or to a deep cavern storage site at Carlsbad, N.M.

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