Hanford Update

Hanford Happenings

Comment Periods:
Diesel and Propane Heaters for Waste Treatment Plant Construction
October 8 through November 7, 2007

HAB Meetings:
February 7-8, 2008 Richland, WA
April 3-4, 2008 Portland, OR

State of the Site 2007:
Seattle November 27, Mountaineers Club
Kennewick November 29, Columbia Center Red Lion
Portland December 11, Jantzen Beach Red Lion
Hood River December 12, Hood River Inn

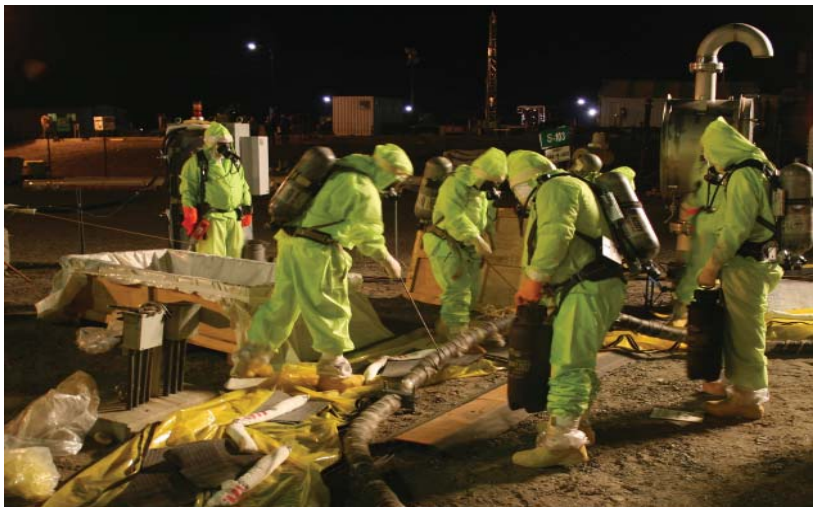
This Issue

U.S. Department of Energy - Washington State Department of Ecology - U.S. Environmental Protection Agency

U.S. Department of Energy
PO Box 550, MSIN A7-75
Richland, WA 99352

DOE INVESTIGATES SPILL

On September 20, 2007 a U.S. Department of Energy (USDOE) Accident Investigation Board (Board) released its report on the cause and effects of a July spill of radioactive and chemical waste at a Hanford tank farm. The Board identified areas for improvement and recommended submittal of a corrective action plan to the USDOE Office of Environmental Management within 60 days. The "Type A" accident investigation, the highest-level safety inquiry available, was initiated on August 13, following a spill of approximately 85 gallons of waste from a storage tank. Workers were attempting to unclog a transfer pump in tank S-102 when the spill occurred at Hanford on July 27.



Workers are training for the removal of equipment contaminated from the July 27, 2007 spill

The accident investigation, coordinated by USDOE's Office of Health, Safety and Security, evaluated potential health effects to workers in the vicinity of the spill, emergency management plans and response to the spill event, engineering design, modifications, approval of the current S-102 pumping equipment, and work control processes associated with S-102 tank retrieval pumping during the spill event. The report did not determine individual fault but suggested corrective actions concerning work controls, industrial hygiene, radiological protection, medical response and emergency management to avoid similar occurrences in the future. The Board further concluded that corrective actions should be completed and validated prior to restart of tank S-102 waste retrieval operations.

The cause of the accident was the over-pressurization of a hose in a dilution line on the transfer pump. Although required, the pump system did not have mechanism to prevent backflow and the subsequent over-pressurization of the hose. Radiation exposures were monitored and were well below any regulatory or corporate administrative control limits, and radiological surveys confirmed no spread of contamination outside the tank farm boundary.

The investigation determined that the accident at S-102 was avoidable. The Board identified corrective actions, or "judgments of need," to prevent recurrence of events like the waste spill at S-102. The scope of the judgments of need include: improving engineering, design and testing of waste retrieval equipment, and revision of procedures and processes for review of engineering designs; an engineering analysis of whether the retrieval pump can continue to be safely operated in tank S-102; better analysis of high-probability/low-consequence accident scenarios in the tank farms; improving procedures for responding to abnormal events in the tank farms; and correcting inconsistencies in the implementation of take cover protective actions; establishing and implementing better protocols for industrial hygiene monitoring, strengthening communications between emergency responders and the on-site medical provider, and improving medical monitoring for individuals with health symptoms and/or complaints following an accident; better defining and implementing a process for identifying potential leaks or spills and strengthening radiological conduct of operations in the tank farms; and, improving oversight of waste retrieval activities to ensure stringent nuclear safety and other requirements are met.

The full accident investigation report is available on the internet, at **http://hss.energy.gov**.

Additional information on the spill can be found in one of several Hanford public information repositories around the region: ***See page 2 for repository information.***

Molasses Injected Into Groundwater in Test

Officials with USDOE, Fluor Hanford, PNNL, and the Washington State Department of Ecology explain how molasses will be used to treat chromium in groundwater near Hanford's D Reactor

The U.S. Department of Energy (USDOE) is working on new ways to use common household items to clean up the groundwater at the Hanford site.

In September USDOE and contractors Fluor Hanford, and the Pacific Northwest National Laboratory began injecting molasses into a well near D Reactor, which made plutonium for nuclear weapons during the Cold War.

The goal is to convert toxic chromium -6 to a less toxic form, chromium -3.

"Using a variety of innovative methods is a key component in our groundwater program," said Mike Thompson, Soil & Groundwater Remediation manager at USDOE. "In this case, we're using common products for uncommon purposes. This is one of many examples illustrating the diversity of our groundwater cleanup efforts."The nutrients in the molasses will increase the population of naturally occurring bacteria, or microbes. The microbes live short lives, then die. The die-off will consume oxygen, and that converts the chromium -6 to a less toxic form.

The new form is also insoluble, so it won't move with the groundwater.

"Going after the chromium in this area of Hanford is especially important," said Thompson. "Chromium contamination levels at the D Reactor are among the highest on the site, and the area is next to the river. We need to protect the river and its ecosystem."

The chromium resulted from mixing sodium dichromate with cooling water to prevent corrosion in the reactors. After passing through the reactors, millions of gallons of cooling water were sent to liquid waste disposal facilities, then to the nearby Columbia River. This contaminated the ground and groundwater with chromium. Hanford groundwater is not a source of drinking water and does not affect offsite drinking water sources. But there are possible near-shore impacts where the groundwater flows into the Columbia River.

"Chromium is very toxic to salmon," said John Price, Environmental Remediation manager for the Washington State Department of Ecology. "The chromium can discourage salmon from nesting where groundwater comes out as springs into the river. We believe that salmon are very sensitive to chromium and can actually sniff it out."

Public Information Repositories

Richland
U.S. Department of Energy Public Reading Room
Washington State University, Tri-Cities
Consolidate Information Center, Room 101-L
2770 University Drive
Attn: Janice Parthree (509) 372-7443

Seattle
University of Washington
Suzzallo Library
Government Publications Division
Attn: Eleanor Chase (206) 543-4664

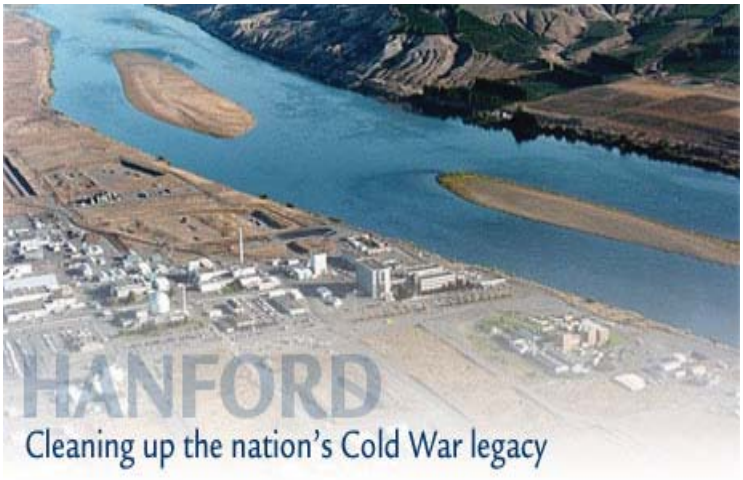
Portland
Portland State University
Branford Price and Millar Library
1875 SW Park Ave.
Attn: Don Frank (503) 725-4132

Spokane
Gonzaga University
Foley Center
East 502 Boone
Attn: Linda Pierce (509) 323-6110

State of the Site 2007

Join the top Hanford decision makers, U.S. Department of Energy, the Washington State Department of Ecology, and the U.S. Environmental Protection Agency, at the State of the Hanford Site public meetings. Each year the decision makers visit communities to talk about successes and challenges facing Hanford cleanup.

Please come share your values and join the dialogue. You can make a difference. Get involved.



November 27, 2007
Seattle, Washington
Mountaineers Club, 300 Third Ave., W

November 29, 2007
Kennewick, Washington
Columbia Center Red Lion, 1101 N. Columbia Center Blvd.

December 11, 2007
Portland, Oregon
Red Lion Inn on the River-Jantzen Beach
909 N. Hayden Island Drive

December 12, 2007
Hood River, Oregon
Best Western Hood River Inn
1108 East Marina Way

Cleanup Priorities

The U.S. Department of Energy (USDOE) and the regulatory agencies would like to thank those who participated in this year's Fiscal Year (FY) 2009 budget discussions.

This year's Cleanup Priorities exercise provided an effective tool that helped elicit focused feedback from the public and promoted greater interactive dialogue between members of the public and the Tri-Party Agencies. In past years the USDOE Richland Operations Office and the USDOE Office of River Protection could only provide USDOE Headquarters (USDOE HQ) with general themes (trends) from the public meetings. This year Hanford's budget submittal contained specific information on the public's priorities and values and included individual cleanup priorities exercise worksheets and written comments.

Please visit the Hanford website at www.hanford.gov (under Hanford Site Budget - Budget Outreach) to view the results of the regional Hanford Pie-Chart Cleanup Priorities Exercise, public comments, and the Hanford Site July 13, 2007 FY2009 Budget submittals to USDOE HQ. The final submittal letters describe in detail what work both USDOE offices plan to accomplish in FY 2009.

Thank you again for being involved in Hanford cleanup decisions.

For more information call the Hanford Cleanup Line at **1-800-321-2008**.

Shipping Plutonium

The U.S. Department of Energy (USDOE) recently announced its decision to consolidate surplus, non-pit plutonium at its Savannah River Site (SRS) in South Carolina, greatly reducing storage costs and significantly enhancing security across the nation's weapons complex. USDOE will begin shipping the surplus, non-pit plutonium in the near future. Shipping is expected to run through 2010.

"Consolidation is a key part of USDOE's efforts to properly manage surplus plutonium and follows our dedication to non-proliferation, environmental management and national security," Assistant Secretary of Energy for Environmental Management James Rispoli said. "This decision continues the momentum for the safe disposition of surplus materials."

The surplus plutonium to be consolidated at SRS will come from the following USDOE facilities: the Hanford Site in Washington; the Lawrence Livermore National Laboratory in California; and the Los Alamos National Laboratory in New Mexico. Some 2,300 plutonium storage containers from Hanford and close to 700 from Lawrence Livermore and Los Alamos Labs will be moved by secure transport to SRS. The surplus material to be consolidated is "non-pit" plutonium, which comes from sources other than nuclear weapons triggers, or pits.

USDOE's decision will reduce the number of sites with special nuclear material, enhancing the security of these materials and reducing the costs associated with plutonium storage, surveillance and monitoring, and security at multiple sites. By transferring the material to one location, the Department expects to increase security while avoiding significant costs at all three sites.

Once the material is consolidated at SRS, USDOE's current plan for disposing of surplus plutonium involves the use of up to three SRS facilities: the Mixed Oxide (MOX) Fuel Fabrication Facility (currently under construction); the existing H-Canyon facility; and, the proposed new, small-scale plutonium vitrification capability. USDOE will evaluate reducing and possibly eliminating the need for the vitrification capability, and instead disposing of all the surplus plutonium through the MOX facility and H-Canyon. USDOE's plan ensures that surplus, plutonium which will be consolidated at SRS has an identified, clear disposition path out of South Carolina.

USDOE has notified Congress and provided a plan for the disposal of the surplus plutonium once it gets to SRS, pursuant to the National Defense Authorization Act for Fiscal Year 2002 (Public Law 107-107). Consolidation of surplus plutonium at SRS was analyzed in a Supplement Analysis and USDOE issued an Amended Record of Decision for the Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Environmental Impact Statement. View the Supplement Analysis and Amended Record of Decision at http://www.em.doe.gov/pages/arodpu.aspx.

Separately from this consolidation announcement, USDOE is preparing a Supplemental Environmental Impact Statement for Surplus Plutonium Disposition at the SRS to evaluate the potential environmental impacts of alternative methods to disposition the surplus, non-pit plutonium materials.

Let's Talk About Steps to Closure

Single-shell tank construction during World War II. There are contaminated equipment, piping, and soils around and under the tanks that must also be addressed as part of tank cleanup.

Closure is contentious. It is hard to imagine removing the tanks and contaminated soil, but it's also hard to accept leaving them in place. Many people involved with Hanford and outside of Hanford have opinions about what closure will be.

Closure is critical. Today, the Tri-Party Agreement deadline to close the tanks is in September 2024. This date is likely to change as a result of the ongoing Tri-Party Agreement negotiations. Regardless, the tanks must eventually be closed as required by Washington's Dangerous Waste regulations.

Closure is complicated. To "close" a tank system means more than just removing waste. It means leaving the area where the tank sits in a safe condition for the future. When we talk about closing the tanks, we must also address the related equipment—pipes, diversion boxes, and catch tanks.

The high-level waste in the tanks must be vitrified. During Hanford site operations, tank space was limited. In an effort to save space, solids were concentrated, and the remaining liquids (about 300 million gallons) were sent directly to the soil around the tanks. What is left in the tanks is the most long-lived of the radionuclides and a toxic blend of dangerous chemical wastes.

There are miles of pipes, most of which contain some traces of tank waste. Hanford contractors rinsed some, but not others. Some became plugged and ruptured. While workers took steps to control discharge of long-lived radionuclides to the soil, they did not give the same attention to the chemicals. There is a vast amount of soil and equipment contaminated with hazardous chemicals and radionuclides. With that piping and hundreds of monitoring wells, removing contaminated soil will be delicate work.

Under the state's Dangerous Waste regulations, closure means minimizing the need for future maintenance and minimizing or preventing post-closure impacts to human health and the environment. It also means restoring the appearance and use of surrounding land areas as much as possible.

Closure is coming. Difficult or not, we must start thinking about closure now. Closure decisions will rest on

Steps to Closure Cont'd.....

information in the Tank Closure and Waste Management Environmental Impact Statement (TC&WM EIS), the closure plans in the sitewide permit, and work to fulfill Tri-Party Agreement milestone M-45. We must gather information to help with closure planning.

The TC&WMEIS will support decisions on:

- supplemental tank waste treatment technologies.
- FFTF end state.
- tank farm closure.
- Waste leaving Hanford.
- Hanford disposal of offsite waste.
- Hanford onsite waste disposal

The Resource Conservation and Recovery Act (RCRA)'s purpose is to manage hazardous wastes safely "from cradle to grave." A closure plan is the "grave" part.

Regulations under RCRA and Washington's Dangerous Waste regulations call for the State to issue a closure plan. U.S. Department of Energy will submit a closure plan application, and the Washington State Department of Ecology will write a closure plan permit that meets the State's regulations and protects human health and the environment. The public will have the opportunity to review and comment on the closure plan and permit.

The C-200 Demonstration Project will support future decisions about closure. The project's goals are to gather information to support decisionmaking about closing tanks. The project will start in a few years and Ecology will issue a research, development and demonstration permit for this work.

The public has a say on decisions in those studies. We must have public input. We must consider the public's values as we make decisions. We ask each of you to participate and to give us your views.

Research Developement and Demonstration Extension

Dismantling of full- scale demonstration bulk vitrification container

U.S. Department of Energy (USDOE) is asking Ecology for a change to the permit for the Demonstration Bulk Vitrification System (DBVS). The proposed modification would change the end date for the permit to December 13, 2013.

The project has a Research Development and Demonstration permit for a fixed number of operating days. The permit's current end date is December 13, 2007.

Technical issues and funding cuts have prevented USDOE from starting operations of the DBVS. USDOE has not used 1 of its 400 days of operation, so the end date will come up before the project starts.

"We believe bulk vitrification may still be a viable option for Hanford's supplemental treatment needs," said Suzanne Dahl, Ecology's tank waste disposal project manager.

The permit change is a "Class 1 prime" modification. This means the change is at the request of the permittee (USDOE's Office of River Protection) and requires written approval from Ecology. It does not require a public comment period, but the permittee must notify the mailing list.

Hanford Advisory Board Update

Susan Leckband, Chair

I'm always excited to attend the September Hanford Advisory Board (HAB) meeting each year. Because September marks the end of the fiscal year for federal agencies the HAB provides an opportunity for the leaders of those agencies, as well as the state, to give their perspective on the past years' accomplishments and identify areas where they were disappointed. In addition, they provide a glimpse into the coming fiscal year and Board members have an opportunity to see the broader Hanford cleanup picture from each agency's point of view. After all the presentations are completed, the HAB members engage in a dialogue with the agency leaders, asking questions and offering observations. This give and take conversation helps both the HAB and the agencies get a clearer picture of what was accomplished in the past year and helps identify the expectations from the agencies and the HAB for the coming year. The agency leaders also provided the Board with feedback on where and how they used HAB advice in their deliberations and I believe this feedback will be helpful to the board as they plan their work for 2008.

The HAB reached consensus on two letters and two pieces of advice at the September meeting (topics included site contracts, worker health and safety, and tank waste issues)– check out the HAB website to view these most recent HAB products in their entirety along with the responses from the Agency(ies) to whom they were addressed. The HAB website http://www.hanford.gov/hab contains all of the past HAB advice and responses, lots of information about the HAB and provides links to other websites associated with the Hanford Site. It is a good resource for anyone interested in learning more about the HAB.

Additionally, the HAB welcomed Dave Brockman as the new Department of Energy - Richland Office field office manager. Dave had been the Designated Deputy Federal Officer (DDFO) for the Board for about a year and attended many HAB meetings so he is very familiar with how the HAB works. We look forward to continue working with Dave in his new capacity and with Doug Shoop as our new DDFO.

Hanford Advisory Board members touring the Vitrification Facility

Site Wide Permit Communication Plan

Here is how the Washington State Department of Ecology (Ecology) will share information, collect, and respond to public comments and community input and address stakeholder concerns for the sitewide permit. This is a work in progress.

Formal public comment periods
Dangerous Waste Regulations call for a minimum of 45 days for public comment for this permit decision. Since the scope of the permit is large. The comment period should be at least 60 days.

Focus sheets
Ecology will mail a Citizen's Guide that will include the legal requirements for a public notice. It also will have brief summaries of the units for which the permit has specific conditions. We will mail the focus sheet to coincide with the beginning of the formal comment period.

Public meetings or hearings
Ecology expects strong interest from the public and stakeholders, as well as from the permittees. We have a precedent of holding public hearings for the sitewide permit. We will hold a hearing at the Ecology Richland office, and consider holding hearings in other cities as well.

Mailing list
The Tri-Party Agencies have compiled a mailing list for the site, which a US Department of Energy (USDOE) contractor maintains. We have the option of mailing information to the "highly interested" list (about 900) or the entire mailing list (about 2400 names). Our usual mailings are to the highly interested list. For this issue we may want to use the entire list.

Listserv
Ecology will send an advance notice to the listserv 30 to 45 days before the comment period starts.

Radio ads
Dangerous Waste Regulations do call for a radio announcement for permit changes. Ecology will purchase air time for the first two days of the comment period during a.m. drive on both days and afternoon drive on first day. We also will purchase local time the Monday before the public hearing.

Newspaper ads
Ecology will place ads in the newspaper with the largest circulation in Benton County, which is the Tri-City Herald, to announce comment periods for proposed decisions. Ecology may choose to place a legal classified ad or a display ad. Ecology will place a display ad for this permit change on the Sunday before the comment period starts, and also place a display ad the Sunday before the public hearing.

Web presence
The Web is important, and everyone uses it now, though regulations do not require its use. We post Hanford cleanup information on the Web at www.ecy.wa.gov/programs/nwp. We will try to make it easy to submit comments through the website via an email link.

Earned Media
Ecology will write a press release when the public comment period starts.

Stakeholder notifications
Ecology uses the following additional methods to notify Hanford stakeholders: Hanford Update, Public Involvement 90-day look-ahead, Hanford Advisory Board committees, Hanford Public Interest Group Network (HPIN), quarterly staff-to-staff meetings with Oregon's Hanford Cleanup Board and the Tribal Nations. We also have occasional outreach events.

We are actively seeking audiences with local service clubs. We have public participation grants with stakeholder groups. We will ask our stakeholder groups to help their groups participate in the review of the permit.

Construction on WTP Resumes

Full construction has resumed on the Hanford Waste Treatment and Immobilization Plant's (WTP) High-Level Waste (HLW) Vitrification and Pretreatment (PT) facilities after nearly two years of construction curtailment.

Heavy construction activities such as concrete and structural steel placements will begin immediately in the HLW facility, while work in the PT facility will ramp up to heavy construction activities later in the fall.

Nearly 1,300 people are now working at the construction site at Hanford.

In November 2005, the U.S. Department of Energy (USDOE) suspended construction on the HLW and PT facilities to validate the design using more stringent seismic criteria. On August 10, 2007, the Secretary of Energy certificated the final seismic ground motion criteria based on the results of data collected and analyzed from the drilling of deep boreholes at the construction site. Certification of the final criteria cleared the way to resume HLW and PT construction.

The HLW is one of five major components of the WTP. The facility will treat the most radioactive liquid wastes from Hanford's underground storage tanks by immobilizing it in a sturdy glass matrix. During operations, the HLW will produce 6.6 tons of glass daily. The HLW facility is currently 17 percent complete, and will be two football fields wide, one football field long and six stories tall when complete. The facility is scheduled to be completed in 2016, when it will be tested using water and waste simulants in preparation for "hot" operations in 2019.

The Waste Treatment Plant's Pre-Treatment Facility construction

The WTP will be an industrial complex of facilities for separating and vitrifying (immobilizing in glass) millions of gallons of radioactive and chemical wastes stored at the Hanford Site. The five major components of the WTP will be the PT Facility for separating the waste, the HLW Vitrification and Low-Activity Waste Vitrification Facilities where the waste will be immobilized in glass, the Analytical Laboratory for testing physical and chemical properties of the waste at different stages to ensure the quality of the glass, and the Balance of Facilities which will comprise over 20 various support facilities. Once complete, the WTP will be the largest and most capable facility of its kind in the world.

RCRA Permit Modifications

The U.S. Department of Energy transmitted Class 1 modifications to the Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit for quarter ending September 30, 2007, to the Washington State, Department of Ecology (Ecology). Pursuant to WAC 173-303-830(4)(a)(i)(B), the Permittees of the Hanford Facility RCRA Permit are providing notice. Hanford Facility RCRA Permit Condition I.C.3, allows for quarterly notification of Class 1 modifications to be made to Ecology. Contact Greta Davis, Ecology on (509) 372-7894 for further information about the Class 1 modifications.