

Waste Tank Safety Moves Another Step Forward

RICHLAND, Wash., March 9, 1995 -- All 25 of Hanford's hydrogen "watch list" tanks are expected to have hydrogen monitoring systems installed in them by mid-April. Installation work is now in full swing.

Probes have already been installed in five tanks, providing much-needed data that will aid in safely managing the waste in those tanks.

Hydrogen is a flammable gas which forms in a number of Hanford's high level radioactive waste tanks. In most cases, the hydrogen is released harmlessly as it is generated. In some instances, it becomes trapped and is released in volumes and concentrations high enough to cause concern.

"These monitoring systems will provide us with the capability to continuously monitor the tanks to determine if there is enough hydrogen in them to be concerned," said Westinghouse Hanford Company manager of Flammable Gas Tank Safety, Jerry Johnson. "We expect the new equipment to give us accurate data that will put a lot of fears to rest."

The so-called "watch list" was established in 1990 in the wake of problems associated with waste Tank 101-SY which burped large volumes of hydrogen gas. Once the hydrogen phenomenon in 101-SY was understood, other tanks were studied to determine if they exhibited similar characteristics or had similar chemistry which could produce hydrogen.

"Because of our concern over the potential for hydrogen to exist in those tanks, we imposed constraints on work activities around the tanks to avoid the potential for sparks that could ignite any hydrogen that might exist. These monitors will give us the technical data we need to decide if these expensive restrictions need to remain or if we can remove the tanks from the 'watch list' and allow normal operations to resume around the tanks," said Johnson.

Instruments are now in place at all of the "watch list" tanks. Workers are installing the necessary equipment to connect the instruments to the tanks. In those tanks with active ventilation systems, such as the double-shell tanks, the instrumentation is installed in the ventilation exhaust.

For those tanks which do not require ventilation systems, probes are installed into the air space in the tanks. The hydrogen monitors draw vapors through the probes and pass them through the analytical instruments which are calibrated to recognize large hydrogen discharges. If discharges exceed a pre-set limit, automatic valves capture a vapor sample which can be taken to a laboratory for more detailed analysis.

The monitoring systems are being installed at a cost of \$5.3 million.

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