EM Recovery NEWS FLASH

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Idaho Site Advances Recovery Act Cleanup after Inventing Effective Treatment

IDAHO FALLS, Idaho – For the first time in history, workers at the Idaho site achieved success in the initial cleanup of potentially dangerous sodium in a decommissioned nuclear reactor using an innovative treatment process. The American Recovery and Reinvestment Act invested $70 million in the project, which employs 130 workers.

DOE officials cheered the outcome and praised the team that designed and implemented the innovative sodium treatment for which the DOE has filed a provisional patent application.

"We're proud of our team for creating a unique solution to safely rid the Experimental Breeder Reactor-II of this highly reactive sodium before we demolish it," DOE Idaho Cleanup Project Assistant Manager Jim Cooper said. "Our workers achieved this unprecedented accomplishment through hard work and ingenuity and without any previous research available."

When the sodium-cooled reactor's operations ended in 1994, engineers used a wet carbon dioxide gas to treat residual sodium. A bicarbonate crust similar to baking soda formed over the sodium, creating what's known as passivated sodium.

Top: A panorama shows the floor of the Experimental Breeder Reactor-II at the Idaho site.

Bottom: Decontamination and decommissioning workers enter a tent surrounding the heat exchanger in the Experimental Breeder Reactor-II facility.

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Since sodium reacts violently with air and water, the team tasked with demolishing the reactor needed to first create a process to safely treat and remove the elemental sodium after cutting through the crust.

With the help of technology development funds provided by Environmental Management's Office of Deactivation & Demolition and Facility Engineering, the project developed a citric acid solution that reacts calmly with the sodium, preventing harm to workers. The team consisting of workers from CH2M-WG Idaho and several subcontractors also designed equipment to move the 1,200 gallons of solution through the reactor and monitor progress.

The Idaho site will continue the sodium cleanup this summer. After the sodium and associated pipes, tanks, and other components are removed, workers will demolish the 58,439-square-foot reactor and associated structure. To prepare for demolition, workers removed 300,000 pounds of lead from the reactor in 2010.

The project is scheduled for completion in June 2012.

The reactor was used from 1963 to 1994 to convert non-fissionable uranium into fissionable plutonium, thereby "breeding" its own fuel.