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N Reactor Placed In Interim Safe Storage

Largest Hanford Reactor Cocooning Project Now Complete

RICHLAND, WASH. – The U.S. Department of Energy’s (DOE’s) River Corridor contractor, Washington Closure Hanford, has completed placing N Reactor in interim safe storage, a process also known as “cocooning.”

N Reactor was the last of nine plutonium production reactors to be shut down at DOE’s Hanford Site in southeastern Washington state. It was Hanford’s longest-running reactor, operating from 1963 to 1987.

“In the 1960’s, N Reactor represented the future of energy in America. The reactor was successful in both its defense and civilian duties for more than two decades,” said David Huizenga, Senior Advisor for the DOE Office of Environmental Management. “Now, the cocooned N Reactor stands as a symbol of what we can achieve with large-scale cleanup at Hanford. Congratulations to each and every worker for their significant role in N Reactor and Hanford cleanup,” he said.

N Reactor was unique in that it served a dual purpose; it produced plutonium for America’s defense program and steam for electricity. At its peak, the 860-megawatt reactor generated enough electricity for about 650,000 homes. N Reactor was also Hanford’s only reactor that re-circulated water for cooling before returning it to the Columbia River. The closed-loop system contributed less overall contamination to the river.

“Completing the cocooning process is the culmination of years of detailed planning and safe, disciplined operations by workers dedicated to protecting one another, the environment and the river,” said Carol Johnson, Washington Closure Hanford president. “It’s a giant step toward meeting DOE’s 2015 vision of cleaning up the River Corridor, its largest cleanup closure project.”

Hanford's cocooned reactors are scheduled to remain in interim safe storage for up to 75 years to allow DOE, regulators and other stakeholders to determine the final disposal method and to allow the structures' high radiation levels to decay to safer levels.

The reactor building was 85,450 square feet and included three below-grade floor areas (47 feet deep), and four floors above grade level – the highest point is 80 feet tall. The cocooning process also involved isolating the Heat Exchange Facility, an adjacent structure that contained the steam generators for producing electricity.

During the \$65 million cocooning project, the reactor building was demolished down to its concrete shield walls surrounding the reactor core. All equipment was removed and all loose contamination within the facility was stabilized. Temperature and moisture sensors were then installed for remote monitoring, the roof was constructed and all openings were sealed.

Construction of N Reactor began in 1959. On September 26, 1963, President John F. Kennedy dedicated N Reactor and presided over the groundbreaking for the Hanford Generating Plant during a ceremony open to the public.

After the Chernobyl accident in 1986, N Reactor was shut down for routine maintenance, refueling, and safety upgrades because of perceived similarities to the Soviet reactor. Although the upgrades were completed, the reactor never operated again. It was decommissioned when the Cold War ended in 1989, marking the beginning of the cleanup era at Hanford.

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