



Last Monday's somber skies mirrored the mood of some at FFTF and in the community as liquid sodium was drained from the first of FFTF's three secondary cooling loops.

## FFTF's final chapter begins

*Karin Nickola, Fluor Hanford*

A message to Fast Flux Test Facility staff members from Fluor Hanford's Bruce Klos, acting project director for the FFTF closure project, began with a succinct statement on Monday, April 7: "At approximately 8:40 this morning, draining of sodium from the first of the FFTF secondary loops was initiated."

Thus, in the same highly professional manner that FFTF personnel have operated the reactor and maintained it in a standby mode for 10 years, they ushered the Fast Flux Test Facility into a new and final decommissioning phase that could be finished in as little as six years.

"The staff at FFTF is *extraordinary*. They have not lost their edge," said Klos. "Despite years of uncertainty, they have continued to perform with exceptionally high standards. This was evidenced in the flawless manner in which the loop-one sodium drain was carried out."

Efforts by supporters to stall the decommissioning, in the hope of eventually restarting the reactor, were halted by decisions of federal courts. The draining of sodium is considered by many to be the point of no return in the decommissioning process.

During full-scale operation of the reactor from 1982 to 1992, three cooling loops kept liquid sodium in the re-

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## FFTF's final chapter begins, cont.

actor core at about 1,000 degrees Fahrenheit. In standby mode, with fuel assemblies removed, the loops were used to maintain the liquid sodium at about 400 degrees (sodium solidifies at 208 degrees Fahrenheit).

Each of the three cooling loops has a primary and a secondary side. The primary side passes through the reactor core and transfers heat to the secondary side via a large heat exchanger.

Draining of the liquid sodium starts with the secondary side of each cooling loop. As the secondary loops are drained, immersion heaters in the reactor vessel will help keep the liquid sodium at the desired temperature until it's time to drain the primary systems. Two sodium-filled fuel-storage vessels will also be drained after the fuel is transferred to dry cask storage.

Draining sodium from the secondary side of the cooling loops is a fairly straightforward process. After appropriate initial conditions are established — primarily temperatures and pressures — it's a matter of opening loop and dump-heat-exchanger drain valves to permit gravity flow to an in-plant drain tank.

Nearly 17,000 gallons of liquid sodium flowed into the drain tank on April 7. The following day, the drained sodium was pressure-transferred to the Sodium Storage Facility, where it will be allowed to cool and solidify. The sodium is expected to remain "frozen" for several years. Eventually, it will be converted to sodium hydroxide for use in pre-treating the Hanford high-level tank waste before vitrification in the Waste Treatment Plant.

Several sodium-cooled reactors have already been decontaminated and decommissioned in the United States and Europe. Shared information provides a framework from which FFTF staff members can optimize plans. Whatever the chosen path, however, FFTF decommissioning must follow a process outlined in Sections 7 and 8 of the Tri-Party Agreement — which means adhering to the *DOE and EPA Policy on Decommissioning of Department of Energy Facilities Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*.

## Turning the corner

About 225 people are working at FFTF. Many of them helped the facility achieve world-record fuel performance and earn operational and engineering awards in the years that it operated. Today, these people are challenged with adjusting to a new and different mindset. But they are accomplishing it with pride and their usual high standards.

Perhaps there are new world records to be set in decommissioning the reactor. In any case, the employees know they have a job to do, and they will do it with gusto. ■



**Fluor Hanford spokesman Bruce Klos responds to questions from reporters at an afternoon news conference on April 7, the day sodium draining began. Local interest in the process — considered by many to be the end of efforts to restart the reactor — remained high.**