New spillway increases Folsom Dam flood protection

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Floods in 1986 and 1997, as well as a levee break in 2004, costing lives and billions in damage, contributed to Gov. Arnold Schwarzenegger declaring a state of emergency due to the threat of major flooding in northern California and San Joaquin Valley in 2006, and current work on Folsom Dam is helping alleviate that threat.

The construction of an auxiliary spillway at the Folsom Dam will provide the Sacramento region a greater level of flood protection than it has now. More specifically, it will provide a 200-year level of protection, meaning a one-in-200 chance for flooding in any given year.

Friday morning, 25 state and federal workers and even a few spectators gathered at the Folsom Dam for a presentation and tour of the ongoing work known as the Folsom Dam Joint Federal Project (JFP).

The JFP is a cooperative effort between the Central Valley Flood Protection Board (CVFPB), Sacramento Area Flood Control Agency (SAFCA), Department of Water Resources (DWR), the U.S. Army Corps of Engineers and the U.S. Bureau of Reclamation.

The $962 million project involves the construction of an auxiliary spillway consisting of a control structure, spillway chute, stilling basin and approaching channel. Beth Salyers, lead project manager on JFP for the U.S. Army Corps of Engineers, said the new control structure will operate in conjunction with existing spillway gates on Folsom Dam to manage flood flows from the Folsom Reservoir.

“The solicitation on the original modifications to the dam had been canceled in January 2006 due to funding issues. At the same time, the Bureau of Reclamation recognized that there were some dam safety issues, such as to prevent overtopping, that needed to be addressed,” said David L. Neff, the technical lead on the JFP for phase three from the U.S. Army Corps of Engineers. “That served as the impetus to combine the two single-purpose projects into one.”

Salyers said the JFP consisted of five phases. The first two phases included extensive excavation at the site, which was recently completed by the U.S. Bureau of Reclamation. Phase three is the construction of the control structure, and phase four is construction of the chute and stilling basin. Phase five involves construction of the approach channel. The project is currently in phase three.

The new control structure will be similar to the current dam, but built with the gates built 50 feet lower than the existing gates.

“What this means is that now we don’t have to wait for the reservoir to fill up in order to release water. Water can be released sooner to provide more efficient use of the storage space and, consequently, free up capacity in the reservoir,” Neff said.

During the tour, Mark Curney, chief of project integration for the U.S. Bureau of Reclamation , pointed out other construction and modifications being done on the main dam, which include gate and pier modifications.

Curney said the parties involved have done their best to ensure that construction does not interfere too much, if at all, with current public access or current operations (such as bike trails and jogging trails). For example, in the event of an emergency, all the scaffolding present can be taken down within six hours. Salyers added that since the dam itself is a secure site, public access should not be too much of an issue regardless.

The new auxiliary spillway will require 3.5 million cubic yards of soil excavation, 350,000 cubic yards of concrete and 26 million pounds of steel. But more importantly, it will be able to safely pass 312,000 cubic feet of water per second into the river, which according to Salyers, can be likened to 312,000 basketballs rushing past you per second.

At the moment, construction of phase three is expected to take 45 months and constructions schedules for the other phases are still in the works.

While the process will take a lot of time and money, according to Neff and Salyers, by working together as opposed to separately, the agencies will be able to complete the project faster and more cost-effectively, saving about three or four years and as much as half a billion dollars.