

# Dam repairs could take many years

Steven Mayer, Bakersfield Californian, 12-7-10

It's been nearly five years since the U.S Army Corps of Engineers became concerned about water seeping through the auxiliary dam at Isabella Lake -- not to mention the possibility of an earthquake splitting apart the dam.

But it will take another five or six years, maybe longer, before designs to make the earthen structures safer will be completed, a Corps spokesman said Monday.

The Army Corps will hold two public meetings next week to discuss efforts it is considering taking -- yes, considering, not necessarily taking -- to reduce long-term risks to the lake's two earthen dams.

The first meeting will be held 6 p.m. to 8 p.m. Dec. 14 at the Kern Valley Senior Center in Lake Isabella. The second is scheduled from 6 p.m. to 8 p.m. the following day at the Kern County Board of Supervisors chambers in Bakersfield.

The Corps of Engineers -- which completed construction of the main and auxiliary dams in 1953, five years after Congress appropriated the funds -- "will present the status of investigations on the Isabella Lake Dams' deficiencies" and will discuss preliminary plans to protect the two structures, according to a release from the Army Corps.

But don't expect a lot of new, hard information, said Corps spokesman Tyler Stalker.

"It's an opportunity to meet project staff and get a good understanding of what we are doing and why it's necessary," Stalker said.

Stalker couldn't provide specifics about what methods engineers may ultimately use to reduce the risk of failure of the dam -- and especially to buttress against seismic risks associated with the Kern Canyon Fault, an ancient earthquake fault that snakes directly beneath the the auxiliary dam.

Once thought to be inactive, the fault is now believed to be capable of generating a 7.5 magnitude earthquake, large enough to rupture the auxiliary dam. However, the last earthquake on the 88-mile-long fault happened roughly 3,300 years ago, Army Corps engineers have said, and no one knows whether the fault will ever move again -- or if it does, whether it'll take another 3,300 years.

Ronn S. Rose, a geologist and dam safety program manager for the Army Corps, said last year that reinforcing the earthen embankment through the use of various design additions can solve the problem.

But first, the job was to identify and quantify all possible problems, including the seismic issues and the water seepage that was detected in 2006.

Many dams, even recently constructed dams, are located on active faults, Rose said.

So designing a dam to survive an earthquake beneath the dam itself is entirely within the capabilities of modern engineering.

Unfortunately, when Isabella was built in the early 1950s, the Kern Canyon Fault was believed to be inactive. But exploratory trenches dug across the fault miles apart have shown evidence that a strong temblor occurred along the fault roughly around the 13th or 14th century B.C.

Engineers for the Isabella Dam project have said solutions could include the installation of filters or drains, foundation improvement and possibly replacement of portions of the embankment.

But Stalker said he doesn't expect the information to be that definitive at next week's meetings.

Meanwhile, for safety reasons, the level in the lake is supposed to be kept no higher than about 20 feet below the maximum, or approximately 63 percent of capacity.

With low to moderate precipitation levels over the past several years, that has not been a problem. As of Sunday, the lake stood at 158,474 acre feet, or 28 percent of capacity.

Reservoir levels have exceeded 360,000 acre feet -- the proposed maximum -- only two years in the past 10 and only 20 times in the past 50 years.