

Oroville crisis drives harder look at aging US dams

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In this Feb. 9, 2017 file photo, water flows through a break in the wall of the Oroville Dam spillway in Oroville, Calif. One year after the closest thing to disaster at a major U.S. dam in a generation, federal dam regulators say they are looking hard at how they overlooked the built-in weaknesses of old dams like California's Oroville Dam for decades, and expect dam managers around the country to study their old dams and organizations equally hard. (AP Photo/Rich Pedroncelli, file)

One year after the worst structural failures at a major U.S. dam in a generation, federal regulators who oversee California's half-century-old, towering Oroville Dam say they are looking hard at how they overlooked its built-in weaknesses for decades.

The Federal Energy Regulatory Commission is telling owners of the 1,700 other hydroelectric dams it regulates nationally that it expects them to look equally hard at their own organizations and aging dams, in the wake of the sudden collapse of much of first one, then both spillways last February at the 770-foot-tall (235-meter-tall) Oroville Dam, the nation's tallest.

Given that the average dam in the United States is in its 50s, like Oroville, it's critical that owners and monitors of America's 90,580 dams act on a main lesson of the near-disaster, dam officials nationally say: Is the way a dam was built in the Cold War-era or earlier good enough to protect lives in 2018 and beyond?

The crisis in California, a state that had been recognized nationally for its dam-safety program, "makes very clear that just because a project has operated successfully for a long period of time, does not guarantee that it will continue to do so," the federal dam regulators wrote late last month in an unusual, blunt open letter to U.S. dam operators.

"We are focusing on how to improve our program to identify and prevent incidents, regardless of magnitude, that could result from similar dam safety and organizational factors that contributed to the Oroville incident," regulators wrote. "We expect our regulated dam owners to have similar internal discussions."

Last Feb. 12, residents across parts of three counties in the Sierra Nevada foothills fled their homes. Authorities warned the chain reaction of structural failures at the Oroville Dam complex could send a wall of

water gushing through their nearby Gold Rush-era towns within the hour.



This Oct. 19, 2017 file photo shows repair work on the damaged main spillway of the Oroville Dam in Oroville, Calif. One year after the closest thing to disaster at a major U.S. dam in a generation, federal dam regulators say they are looking hard at how they overlooked the built-in weaknesses of old dams like California's Oroville Dam for decades, and expect dam managers around the country to study their old dams and organizations equally hard. (AP Photo/Rich Pedroncelli, file)

Despite evacuation orders for nearly 200,000 people, however, the feared uncontrolled release of massive amounts of Oroville's reservoir did not happen. California's repair bills for the near-disaster have neared \$1 billion. Residents downstream have filed more than \$1 billion more in claims.

Last month, two national dam-safety organizations focused the blame on the dam's overseers. California's Department of Water Resources, which owns Oroville; regulators; and consultants had focused on satisfying routine regulatory requirements for the dam—which anchors a water system that supplies more than half of California's people—but never took stock of whether the dam complex was built well enough in the 1960s to stand up over time, their independent probe concluded.

Oroville shows "we got a little complacent with what we were doing" as an industry, "and now need to re-examine and identify some of the more subtle and latent problems," John France, a Colorado-based dams expert who led the probe, says now.

California's Department of Water Resources declined to make an official available to comment for this article, but said in an email it is implementing changes called for by France's team.

The 19,000 residents of Oroville, the town that would have been first in the path of water from the reservoir, watch the year-round repairs at the dam in the hills behind them, uneasy still.

"I'm not sure how much we trust DWR, but that's out of our hands," said Julie Jackson, owner of a downtown Oroville flower store.



This Feb. 11, 2017, file aerial photo released by the California Department of Water Resources shows the damaged spillway with eroded hillside in Oroville, Calif. One year after the closest thing to disaster at a major U.S. dam in a generation, federal dam regulators say they are looking hard at how they overlooked the built-in weaknesses of old dams like California's Oroville Dam for decades, and expect dam managers around the country to study their old dams and organizations equally hard. (William Croyle/California Department of Water Resources via AP, File)

"It was pretty devastating," Jackson said of the fear that overrode tens of thousands of people stuck on evacuation-clogged roads as they tried to save families from what authorities said could be imminent disaster.

"All our family members and friends we knew were in the path."

For Lori Spragens, executive director of the national Association of State Dam Safety Officials, the Oroville spillway collapses were the biggest structural failures at a major U.S. dam of her career.

The last comparable one was the U.S. Bureau of Reclamation's Teton Dam in Idaho, which broke apart in 1976, killing 11 people. Teton was less than half the height of Oroville, at 305 feet (93 meters). Other U.S. dam failures since the 1970s involved dams that were just fractions of Oroville's size, but killed multiple people.

Oroville Dam, by contrast, is the height of a 70-story skyscraper. Its size, and the deep, snaking canyon that opened below it took France's breath away when he drove to the foot of the dam after the spillways' collapse.

"I can't report exactly what I said without expletives," the dam-safety expert said of his reaction. "It's an enormous structure. The erosion was massive."



In this Feb. 15, 2017 file photo, water gushes down the Oroville Dam's main spillway in Oroville, Calif. One year after the closest thing to disaster at a major U.S. dam in a generation, federal dam regulators say they are looking hard at how they overlooked the built-in weaknesses of old dams like California's Oroville Dam for decades, and expect dam managers around the country to study their old dams and organizations equally hard. (AP Photo/Marcio Jose Sanchez, file)

Dam safety officials, regulators and watchdog groups call Oroville a wake-up call. Most say it's being heard.

"Absolutely it's changed things," said Kevin Colburn, a national director of American Whitewater, which works on policy issues affecting rivers nationally.

"If I lived downstream of a dam, I'd be glad Oroville happened," Colburn said.

The Federal Energy Regulatory Commission, which oversees Oroville and the nation's other hydroelectric dams, said it's too early to detail whether the post-Oroville reviews it ordered nationally have led to changes at other dams, and declined to make a dam regulator available for interview.

For some dam owners, however, Oroville's immense size might make them think lessons there don't apply to ordinary dams, said Jonathan Garton, president of the Association of State Dam Safety Officials and a dam regulator for Iowa.

So might the fact that no one died, Garton said.

"Definitely from a dam-safety community perspective, it was a wake-up call," he said. But "in terms of owners saying, 'Gosh, that scares me,' I haven't seen that."

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