

RECLAMATION

Managing Water in the West

U.S. Department of the Interior
Bureau of Reclamation

Putting a Stop to Stop-Logs

[music]

Bert: I'm happy the new spillway is in place. It's a long needed type of structure here. There's a lot of maintenance.

[music]

Jerry: The Minidoka construction project is a huge undertaking that we've been doing over the last four years. During it, one of the big improvements is actually the removal of the stop-logs for the very last time.

[music]

Jerry: The stop logs were put there in 1909, so it's been over a hundred years we've been using this technology.

Brandt: The wooden stop-logs is a very traditional way of controlling the elevation of a river or reservoir, and it was very popular in the early years of Reclamation and the United States.

[music]

Jerry: They actually are a series of logs that are stacked horizontally that allows us to control the reservoir elevation. It works! It holds the water back. But they would leak really bad, and besides, how difficult it was to manage those... the physical labor. So all these stop logs would be manually changed, by hand. How many you had down in there, or how many you took out.

[music]

Think of 1909. What did we have available? There wasn't a lot of electricity. There wasn't machinery that was real adaptable for out there, because this is over 2,000 linear feet, along the riverbed. So what they had was manpower. Men were available.

Bert: Well it was very painful at times. There's a lot of labor involved, a lot of planning through the seasons, and just continuous maintenance. Actually, there were four of us. We always kept four on a crew, because of the heavy labor and back breaking type job.

[man grunting]

Jerry: So people would have to walk out onto the boardwalk to be able to lower down the logs or pull them up. It would take two people, two men, with hooks to lift these really heavy boards. Because when they've been in the river and the lake, all these years, they get waterlogged. They're heavy, they're stuck, and so you'd have to pull them out. It'd be a lot of work. Besides, you're on a board that the way the wind would splash water on it. So it could be slippery, and in the wintertime it was an icy, treachery mess. Tremendously difficult working conditions.

[music]

Bert: It's when you have to regulate the water flows through the dam that it becomes a problem, especially in the flood conditions.

Brandt: Well, under high water conditions it's difficult to remove stop-logs because you have the hydrostatic pressure of the water. So the deeper water is, the more pressure... force it exerts against the stop-logs, resisting someone pulling out those stop-logs.

Bert: During '97, we had a lot of water. It was just a big battle that we took on day after day until we got every single bay opened up.

[machine sounds]

Brandt: We're also removing the concrete spillway piers. These piers hold up the stop-logs. And those will be reused and recycled in a way. So we're happy that we are able to find a win/win situation. We are recycling the steel rebar, and we're using the concrete blocks for fish habitat in the reservoir. Once the original stop-log structure has been demolished, the reservoir can now be controlled by the south-gated spillway, a series of 12 very large radial gates.

Jerry: So the big radial gates, they're a little over 20 feet wide and a little over 15 feet high. That's what we'll use to be able to operate the reservoir. When we need to move water easily, we can do it mechanically. And we no longer have the same potential for hurting people. We had a lot of back injuries with the old system. So it's a benefit to labor. It's a benefit to safety. It's a benefit to the whole system as we operate the river.

[music]