

Arrowrock Dam: A Guided Tour

[music]

Michael: Hi. My name is Michael Anselme, and I'd like to invite you on a virtual tour of Arrowrock Dam which is now 100 years old.

[music]

After its completion in 1915, Arrowrock Dam was the largest dam in the world. A project of this magnitude takes a lot of construction workers, and they used to fill this valley. There was a town of over 1,000 people right below us which is now under this reservoir.

[music]

The dam is approximately 350 feet tall, 1,100 feet long along the crest, and holds back 272,000 acre-feet of water. As you can see behind me over to my right, the spillway is for emergency flood control. It can release large amounts of water if necessary for unexpected flood events coming down the Boise River Basin. Let's head up to the top of the dam.

I'm very excited to show you the dam. It's a century old, and it's stood as a sentinel, providing irrigation water to the residence of the Boise River Valley.

We're now driving along the dam's crest, which had to be raised from its original height 5 feet in the 1930s. The original light poles were just dismantled and placed in the new positions on top of the dam crest. They are from the original dam.

[music]

Now we've arrived at the original Arrowrock office, and I'd like to take you inside to meet the damtender.

[music]

Hi Tony!

Tony: Hi Mike!

Michael: So here we are at Arrowrock Dam's office, and I'd like to introduce you to the damtender, Anthony Simpson. Tony, we're giving a virtual tour of Arrowrock Dam, and I'd like you to talk about some of the maintenance activities you do up here at Arrowrock Dam.

Tony: Hi. Welcome to Arrowrock. I'm Anthony. I'm the resident dam tender and onsite resident. Part of my duties here at Arrowrock Dam is to provide safe weekly and monthly inspections of the interior and exterior so we can make sure this is a safe-operating dam. I also control the water release. So I release water from upstream and down to the Boise River system.

I am onsite 24/7. I live here onsite in a government house with my dog, Keva.

[music]

Michael: Next up, I'd like to take you through the dam, but before we go down there I'd like to point out the log shoot. It's a testament to the Boise Basin logging industry when this dam was built.

[music]

Now I'd like to take you down 100 stairs on the exterior of the dam.

[music]

Now on the inside, 100 more stairs!

[music]

Just be careful because these are all different-sized and stuff, and they're all nice and wet.

[dripping]

The amount of seepage indicates that we're well below reservoir elevation. All concrete arch dams leak a little bit, and we measure the leakage, or the amount of water seeping through the dam, at stations like this weir right here. This measures how much water is actually seeping through, and we're able to make a determination of whether that's normal or abnormal.

Now I'm at the actual Ensign Valve Gallery or Upper Ensign Valve Operating Gallery. These are also known as needle valves, and the needle valves, or Ensign Valves, are the original outlets for the dam. They allow water from the reservoir side out through to the tailwater side. The Ensign Valves are normally under the reservoir and are hard to see, but here's a picture of what they looked like when they were first installed. Although the upper Ensign Valves still operate, the lower 10 Ensign Valves were replaced recently with a valve called a Clamshell Gate. The Clamshell Gates bring much less damage to the penstock liners than the Ensign Valves and therefore are much more reliable. Clamshell gates function by having a charged penstock and opening and closing at a percentage like an actual clamshell.

[water rushing]

Now we've arrived at the Upper Ensign Valve Operating Gallery, and this is where we actually make the movements for the Ensign Valves, whether they're open or closed. And those valves are located on the upstream face of the dam inside the reservoir. But these are the control mechanisms which allow me to open or close the valve itself.

[music]

Because a dam of this magnitude is made up of many concrete pours, we end up with seams. And the seams are a point where we like to monitor movement. So we have a very physical feature here that allows us to see whether this dam, from one seam to the other, has actually moved.

And here's our spiral staircase in the center of the dam which is much more enjoyable to go down than to come up.

[music]

Now I'd like to take you down the last stairwell to the bottom of the dam. This is called our Sluice Gate Gallery. This is a very long and steep staircase, so as we go down it gets more and more steep.

[music]

And here is Arrowrock Dam's largest stalactite.

[music]

Here we are at the bottom of the dam, or what's known as the Sluice Gate Gallery. The Sluice Gates were a gate that was raised or lowered to release water from the reservoir. And these are no longer operational because we're trying to prevent large releases of silt in the Boise River System below the dam.

It's kind of a privilege and an honor to be serving around this area and having the privilege to come through this dam and just feel the presence of the past come together in this modern time a century later.

Well that concludes the interior portion of the Arrowrock Dam tour. I'd like to talk a little bit about the more modern facility which was recently added, and that's the Boise Project Board of Control's powerplant which takes its actual water supply from behind Arrowrock Reservoir through several penstocks and down to this plant here.

[music]

Thank you for joining me for this tour of Arrowrock Dam. This sentinel has stood on the Boise River, serving our community for a century.

[music]