ARROWROCK DAM, RESIDENCE
(Building No. 106)
Boise River, 22 miles upstream east of Boise
Twin Springs vicinity
Boise County
Idaho

HAER ID-27-D
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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
PACIFIC WEST REGIONAL OFFICE
National Park Service
U.S. Department of the Interior
1111 Jackson Street, Suite 700
Oakland, CA 94607

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Location: Boise River, 22 miles upstream east of Boise
Twin Springs Vicinity
Boise County
Idaho

UTM: 11:586940:4827130
Quad: Arrowrock Dam, Idaho, 1:24,000

Dates of Construction: 1963

Builder: United States Bureau of Reclamation

Project Engineer: United States Bureau of Reclamation

Present Owner: United States Bureau of Reclamation

Present Use: Arrowrock Dam Tender's Residence

Significance: Arrowrock Dam is a key component of the Boise Project, an irrigation project designed by the United States Reclamation Service (USRS) to irrigate roughly 390,000 acres in the Boise and Payette Valleys in southwestern Idaho. This Project helped to make the Boise and Payette Valleys the most agriculturally productive region in Idaho. In large measure this was due to Arrowrock Dam on the Boise River, a dam that created a reservoir of more than 272,200 acre-feet of water for irrigation. Arrowrock Dam was the highest dam in the world when it was completed in 1915, measuring 350.5 feet high from bedrock. Experimental elements of its gravity-arch design would be applied to later dams that were even higher. It was only one of two Reclamation dams built with sand cement for the concrete. It was the first USRS dam built whose design required Ensign valves for its outlets to release water. Ensign valves were an important step in the rapid evolution of water regulating valves triggered by construction of ever higher dams at the beginning of the twentieth century.

Description: Located just above Arrowrock Dam on the left downstream abutment is the damtender's residence. This 24 foot by 54 foot building is oriented on

a northwest-southeast axis sandwiched between the rocky cliff and a concrete retaining wall with staircase above the dam. This residence is known as Building No. 106 and was constructed in 1963 to replace the first residence built in 1916 at this location.[1] Building No. 106 is a ranch-style single story residence with basement. The residence has a gable roof covered in composite shingles and a concrete chimney pierces the roof at its ridge. The residence is clad in aluminum siding and is supported upon a concrete foundation. Its original windows and doors have been replaced. Unlike other traditional Reclamation residences this building has an office built in the residence. Therefore it has two sets of doors, one set for the damtender and one set for the office.

The front elevation, which faces northeast, has three sets of aluminum windows and two wood doors. Concrete steps and metal railings lead to both entrances. One door is situated at the southeast end of the elevation and the other is located at the northwest end. Both doors are different with the door at the southeast end having three small, rectangular lights in a stepped pattern while the northeast end has just a single pane. The rectangular aluminum windows are sliders on the north and south ends with a picture window in the middle between the two doors. The concrete foundation has two rectangular metal windows that are two lights each on this elevation to bring light into the basement.

The residence's rear elevation, which faces southwest, is similar to that of the front elevation. However, this elevation has more windows and the two entrance doors are farther apart. Again, concrete steps and metal railings lead to both entrances. The door to the office is located at the northwest end of the elevation and between it and the residence door there are three rectangular aluminum sliders. These entrances have original matching single light wood doors. Two more rectangular aluminum sliders are to the right of the residence entrance at the southeast end of the wall. Just like the front elevation the foundation has two rectangular metal windows that are two lights on this elevation.

The building's northwest gable end elevation has only one rectangular aluminum slider window near the left corner and a vent near the peak of the roof. The concrete foundation has one rectangular two light metal window below the slider window on this elevation. The southeast gable end is similar to the northwest gable end, but it has two rectangular aluminum slider windows, same vent location, but has a double set of two light metal windows in the concrete foundation.

[1] Reclamation, *Boise Project Buildings and Quarters Inventory* (2012), Building No. 106 February 24, 1970.

Facing the rear elevation of Building No. 106 is a cellar. This 8 foot by 8 foot 6 inch cellar was built around the same time as the dam for the damtender. It is a poured concrete structure that has been set into the canyon wall. The cellar's facade is crumbling in places. The interior is accessed by a wood five panel door.

History: Many of Reclamation's project works, especially dams were built in remote areas far away from any civilization or city. Prior to the late 1960s roads were poor and transportation inadequate for commuting in these areas. Additionally, there were not technological advances we have today so personnel such as those at Arrowrock Dam had to be there onsite in case something happened 24 hours a day. One of the key people at Arrowrock Dam was the damtender, who tended to the daily operation and maintenance of the dam. Therefore, personnel who worked at these facilities had to reside at them so housing was built by Reclamation for those employees. Arrowrock Dam had several residences either built after the dam was constructed or were reused housing in the construction camp. By 1941 a Reclamation map shows five residences at the dam site - one residence at the crest of the dam and four downstream – two on the south side and two on the north side. Those on the north side were old buildings left over from the construction camp. In 1949 there were three families living in residences at the dam site.[2] In 1963 the original damtenders residence (Building No. 6) at Arrowrock was replaced. Building No. 6 which had been built in 1916 was razed. While the new residence was under construction at this location the head damtender and his family lived in Building No. 14 below the dam. The new damtender's residence was a modest-sized rectangular dwelling with an office. It had a gable roof and rested on a concrete foundation. Three years later the residence received a new septic tank and a bedroom in the basement.[3]

Sources: U.S. Department of the Interior, Bureau of Reclamation. 2012. *Boise Project Buildings and Quarters Inventory*.

U.S. Department of the Interior, Bureau of Reclamation. *Boise Project, Idaho, Annual History*. Various dates. Available at Reclamation's Pacific Northwest Regional Office, Boise.

Historian(s): A rough draft of the historical narrative was done by Denis Gardner of Hess, Roise and Company in Minneapolis, Minnesota in 2002. Kelsey J.

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[2] Reclamation, *Boise Project, Idaho, Annual History, 1940,* 39; Reclamation, *Boise Project, Idaho, Annual History, 1941,* 40.
[3] Reclamation, *Boise Project, Idaho, Annual History, 1963,* 68-70; Reclamation, *Boise, Project, Idaho, Annual History, 1966,* 78.

Doncaster of Reclamation completed, revised, edited and finalized the document in 2013.

Project Information: By the late 1990s, many of the Ensign valves at Arrowrock Dam were no longer functioning as reliably due to wear from long use. Reclamation decided to replace 10 of the original valves with new clam shell-type gates and retire the other 10 Ensign valves from service. Since Arrowrock Dam has been determined eligible for the National Register of Historic Places, this Historic American Engineering Record documentation was undertaken to mitigate the adverse effects of valve replacement and other alterations. Large format photography of this residence was done by Clayton B. Fraser of Fraserdesign in Loveland, Colorado in June 1999.