ARROWROCK DAM, WAREHOUSE
(Building No. 104)
Boise River, 22 miles upstream east of Boise
Twin Springs vicinity
Boise County
Idaho

HAER ID-27-C
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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
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UTM: 11:586608:4827315
Quad: Arrowrock Dam, Idaho, 1:24,000

Dates of Construction: 1916

Builder: United States Reclamation Service (USRS)

Project Engineer: A.P. Davis

Present Owner: United States Bureau of Reclamation

Present Use: Arrowrock Dam Warehouse

Significance: Arrowrock Dam is a key component of the Boise Project, an irrigation project designed by the 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. This warehouse is needed to house all of the maintenance supplies and parts for daily operation and maintenance of Arrowrock Dam.

Description: Below Arrowrock Dam on the left downstream bank is a corrugated metal warehouse for maintenance of Arrowrock Dam. It is located approximately 875 feet from the dam and is situated on a slightly northwest-southeast axis. This 3,200 square foot building is a rectangle of wood frame construction that is clad in corrugated metal resting upon a concrete foundation surrounded by dirt.[1] Its gabled corrugated metal roof has exposed rafter tips with a ventilator piercing the roof's ridge. On the southwest elevation there are three horizontal windows, a pedestrian door, and a large sliding door. The windows are fixed-sashes formed of eight lights painted white. The pedestrian wood panel door has a single pane window at top and is located near the right end. The wood-frame sliding garage door is sheathed in corrugated metal and is located off-center to the left end of the building. The southeast (rear) elevation has three vertical windows. Two double-hung one-over-one windows are on the ground-floor. Above them in the center of the gabled end is a fixed-sash window made of eight lights. The northeast elevation has four windows. Three of them are fixed-sash horizontal windows made of eight lights equally spaced apart, while on the far left side is a six-over-six double-hung window. The building's northwest (front) elevation has two windows and a large roll up vehicle door. The roll up garage door is made of wood panels and replaced a sliding metal door that was the same as the others in the building.[2] Both windows are fixed-sashes formed of eight lights painted white. The window to the left of the roll up door is of horizontal orientation while the window in the center of the gabled end is vertical.[3] A small light fixture is situated near the roof's peak at both front and rear elevations of the building. Various ladders and tools for maintenance at the dam are attached to or lie against the buildings elevations. A pipe storage rack is at the rear elevation.

History: Building No. 104 was built for $2,000 in 1916 for the daily operation and maintenance of Arrowrock Dam. It was known as Warehouse No. 1 up to 1959, but today it is known as Building No. 104. This warehouse houses all of the needed materials and supplies for the dam.[4] In 1961 a new concrete foundation was poured at one end of Building No. 104. A wall was then moved outward, thus providing more space inside the warehouse. At that time a section of the warehouse's roof was also repaired where a truck had damaged it.[5] Today it is still used as a warehouse for operation and maintenance of the dam as built.

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[1] Reclamation. *Boise Project Buildings and Quarters Inventory* (2012), Building No. 104 March 5, 1959.
[2] Ibid., 2.
[3] A site visit by Kelsey Doncaster on April 5, 2012 discovered that these original windows had all been replaced by vinyl sliders except those inside the gabled end since the photographs were taken in 1999.
[4] Reclamation. *Boise Project Buildings and Quarters Inventory* (2012), Building No. 104 March 5, 1959.
[5] Reclamation, *Boise Project, Idaho, Annual History, 1961, 58*.

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. 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 building was done by Clayton B. Fraser of Fraserdesign in Loveland, Colorado in June 1999.