CUSHMAN NO. 2 HYDROELECTRIC POWER PLANT, WATER CONVEYANCE SYSTEM
Spanning the North Fork Skokomish River
Hoodsport vicinity
Mason County
Washington

HAER WA-192-B
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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

FIELD RECORDS

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240-0001

HISTORIC AMERICAN ENGINEERING RECORD

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HAER No. WA-192-B

Location:	Spanning the North Fork Skokomish River, Mason County, Washington USGS Quad – Hoodsport, Washington (Northern Section) USGS Quad – Skokomish Valley, Washington (Southern Section)	
UTM Coordinates:	Tunnel:	5249284N to 5246640N 484842E 487555E
	Surge Tank:	5246640N 487555E
	Penstocks:	SE, 5246272N 487867E NW, 5246416N 487591E
Legal Description:	Tunnel:	T22N, R4W, S116, S26, S27
	Surge Tank:	T22N, R4W, S27
	Penstocks:	T22N, R4W, S26, S27
Construction Date:	1930	
Engineer/Architect:	Tacoma City Light	
Builder:	Tacoma City Light	
Present Owner:	City of Tacoma	
Historic Use:	Hydroelectric power production	
Present Use:	Hydroelectric power production	
Significance:	Cushman Hydroelectric Plant No. 2 is significant as an example of state-of-the-art high-head hydroelectric technology from the late 1920s and early 1930s. It is associated with Tacoma's burgeoning industrial and commercial growth, and with projected demands for electric power beyond the capacity of Cushman No. 1 Power Plant, built in 1926. Additionally, Cushman Plant No. 2 includes an architecturally significant powerhouse, designed on a monumental scale in the Neoclassical style. In 1988, Cushman No. 1 and No. 2 Hydroelectric Power Plant Historic Districts were listed in the National Register of Historic Places.	
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Physical Description

The main intake, which dates to 1930, consists of a short 30-foot-deep channel, a 17 x 17" Broome self-closing type headgate, and a 30-inch bypass fill valve. The gate is operated by a mechanical hoist, which is housed in the intake gatehouse. The intake is equipped with trash racks. The intake gatehouse is a small, rectangular, Neoclassical, cast-in-place, concrete building located on the intake platform. The roof has a small parapet and cornice (Figures 27 and 28). Original window openings are infilled with plywood to prevent vandalism. The building was painted for the first time in 2009, when other alterations included replacing and upgrading interior controls, rehabilitating the headgate, and removing and replacing a slot in the roof to facilitate the headgate's repair.

Water passes through the intake to the circular outlet tunnel that measures 13,000 feet long and 17 feet in diameter. The steel reinforced tunnel has a 15-inch-thick concrete lining (Figure 26, Figure 27). The outlet tunnel terminates at the Larner differential-type surge tank that regulates the pressure in the long conduit. The tank measures 65 feet in diameter and 94 feet high, and its internal riser measures 14 feet in diameter (Figure 33, Figure 34). The water flows from the surge tank through a three-branch manifold into the 1,350-foot, steel-lined penstocks, which convey it down a steep hill into the powerhouse. There the water enters the turbine casings under a head of 440 feet (Figure 25).

The flow of water from the surge tank into the penstocks is regulated in the valve house, located at the top of the hill, at the mouths of the penstocks. The Neoclassical-style valve house is a 52 x 21.5', rectangular, cast-in-place, unpainted concrete structure with a modest parapeted roof. Trusses and a metal gable roof were installed over the original flat roof sometime before 1984, and the original windows have been infilled with concrete block to deter vandalism. The building houses three butterfly valves, one for each of the penstocks. Vent stacks rise from the tops of the penstocks to accommodate overflow (Figure 35, Figure 36).

Originally, there were two penstocks, two turbines, and related equipment and structures. The third set began operating in 1953. The third penstock, located at the north side, is welded, while the original two are riveted (Figure 30, Figure 31, Figure 32).