

Faraday Dam and Powerhouse

By George Kramer

The Faraday Powerhouse, located in Estacada on the Clackamas River, produces hydroelectricity to serve the greater Portland area and is the oldest such facility on the river. Originally called Cazadero, the project is owned and operated by Portland General Electric (PGE). Construction began in 1904 by the Oregon Water & Power Company (OWP). The plant was completed in 1907, after OWP became part of Portland Railway Light and Power in 1906. The company became PGE in 1930.

Faraday was designed to hold five generators in anticipation of future power needs. Only three generation units were installed initially. Water was diverted on the main channel of the Clackamas by the Cazadero Dam, a log-crib structure (replaced in 1966) built 1.5 miles upstream from the powerhouse to Faraday Lake, a mile-long reservoir. It then drops almost 180 feet through a series of eight-foot-diameter (with some larger) steel penstocks to the powerhouse, where it spins the turbines before returning to the main river channel. The powerhouse, 40 feet wide by 200 feet long, was built of brick and is now covered with stucco. The original arched windows include pivoting half-round panels that enable ventilation.

The Faraday Dam and Powerhouse was the second large hydroelectric plant constructed in the Portland region, creating what the *Oregonian* judged to be "Plenty of Power" to meet the city's demand. The million-dollar plant was dedicated on February 27, 1907, with Portland Mayor Harry Lane presiding. To announce the official completion of the project, power from the dam was sent to downtown Portland to illuminate a large sign atop the Oregonian building. The sign, made of incandescent lamps, spelled out "Cazadero's Greetings to Portland."

The hydroelectric development of the Clackamas River allowed for the expansion of Portland-area industry, providing needed power for manufacturing and lighting. Much of the new power supported the area's growing system of electric-powered trains and trolleys.

Early on Sunday, June 21, 1908, Faraday's Unit 1 malfunctioned and began to spin at excessive speed. It quickly flew apart, destroying the other two generators. "The generators were literally torn to pieces," one account reported, "parts of machines being scattered all over the powerhouse." An electrical fire destroyed the roof and much of the other equipment, severely damaging the building. The *Morning Oregonian* reported that the "Cazadero Plant is a Complete Wreck."

PGE rushed Faraday back into service, shifting equipment from other plants in a makeshift effort until replacements could be installed. The plant was generating power within a month. Three replacement generators were installed by November 1908, and by 1910 Faraday was expanded to the full five units of its original design.

Before World War II, PGE completed two additional hydropower plants on the Clackamas, at River Mill and Oak Grove. Demand for electrical power had increased, as expanded use of electrical lighting and new electric-powered appliances developed in both the residential and commercial markets. In 1956, the Faraday Powerhouse was again expanded to add a sixth generation unit (Unit 6) outside the original powerhouse, fed by a 14-foot diameter penstock. Unit 6 increased the output of the Faraday Powerhouse to its present-day 46 megawatts, enough power for about 16,000 homes.

Sources

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