

MILL CREEK 2 AND 3 HYDROELECTRIC SYSTEMS,
MILL CREEK 2 EXCITERS

HAER No. CA-2272-H

Mill Creek
Yucaipa vicinity
San Bernardino County
California

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

FIELD RECORDS

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of Interior
1111 Jackson Street
Oakland, California 94607

HISTORIC AMERICAN ENGINEERING RECORD

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Location: The Mill Creek 2 Exciter (MC 2 Exciter) is located within the Mill Creek 2 and 3 Powerhouse (MC 2 and 3 Powerhouse) along the west interior wall near the southwest corner. The MC 2 and 3 Powerhouse is located just southeast of California State Route 38 (SR 38), immediately west and downhill from the associated penstocks. It is on USGS topographic map Yucaipa (Section 13; T.1S., R.1W.).

Significance: The MC 2 Exciter is a small generator that was used to provide the D.C. current to energize the electromagnets within the larger A.C. generators for Mill Creek 2. Originally, there were two generators that served MC 2 both were put into service in November 1899, however today only one remains in its original location. Mill Creek 2 and 3 are some of the earliest examples of a high-head hydroelectric system within the United States and are early examples of the first commercial three-phase alternating current stations in California. Three-phase alternating later became the industry standard.

Description: The remaining MC 2 Exciter is located along the west interior wall of the MC 2 and 3 Powerhouse near the southwest corner. The exciters were created by General Electric, and are MP 4-pole 30-kilowatt 125-volt continuous-current generators. Each was driven by a 24 inch Pelton Water Wheel Co. wheel.⁶³ The exciter to the south has a water wheel, with patent dates that range from 1887 to 1893. They have steel pipe barriers.

History: When the MC 2 Powerhouse was originally constructed in November, 1899, there were two generating units and the MC 2 Exciters provided the D.C. current used to energize the electromagnets within the original A.C. generators for MC 2. In March 1903, MC 3 was completed and the two existing generators were taken out and moved to the Lytle Creek power station. Following their removal, the current generator for MC 2 (Unit #1) was installed on August 3, 1904.⁶⁴ Neither of the MC 2 Exciters are currently used. Please see the Historic Context section in the general Historic American Engineering Record for the Mill Creek 2 and 3 Hydroelectric Systems (HAER No. CA-2272) for additional information.

Sources:

Fowler, Frederick Hall. *Hydroelectric Power Systems of California and Their Extensions into Oregon and Nevada, Water-Supply Paper 493*. Washington, D.C.: Government Printing Office, 1923.

⁶³ Frederick Hall Fowler, *Hydroelectric Power Systems of California and Their Extensions into Oregon and Nevada, Water-Supply Paper 493*, Washington, D. C.: Government Printing Office, 1923, 605.

⁶⁴ "Redlands Electric Light & Power Co., Edition Electric Co. of Los Angeles, Mill Creek Power houses," *National Register of Historic Places Inventory – Nomination Form*, April 30, 1985, item number 7, 9.

White, David R. M. "Cultural Resource Management Plan for the Southern California Edison Company Mill Creek Hydroelectric Project (FERC Project No. 1934) San Bernardino County, California," June 1993.

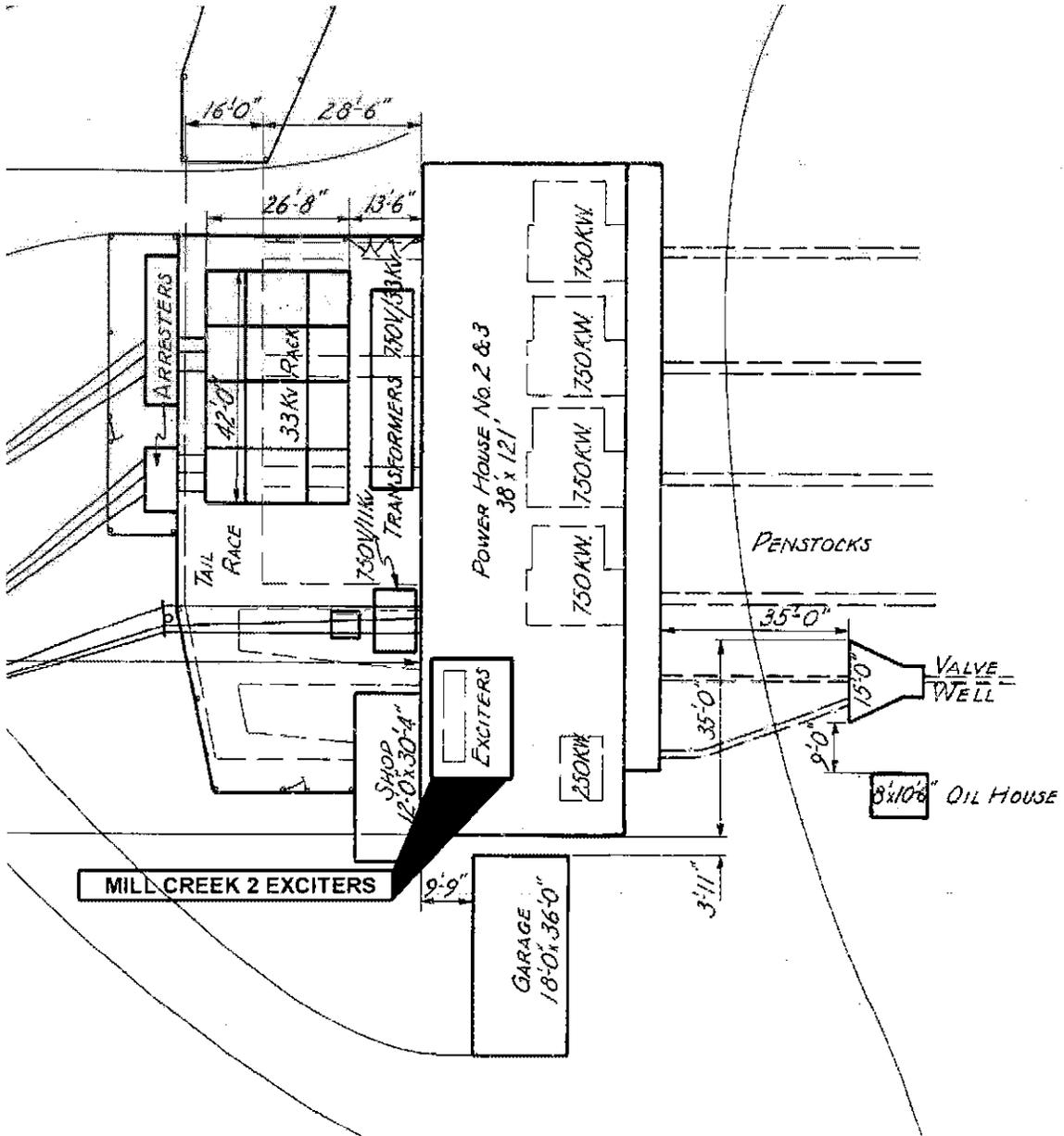
Low, George P. "The Generating, Transmission and Distribution Systems of The Edison Electric Company of Los Angeles, Cal.," *The Journal of Electricity, Power and Gas*. vol. XIII, no. 1. January, 1903.

"Means Much to Redlands: Big Light and Power Deal Closed," *Los Angeles Times*. May 25, 1901, 8.

"Redlands Electric Light & Power Co., Edition Electric Co. of Los Angeles, Mill Creek Powerhouses," *National Register of Historic Places Inventory – Nomination Form*, April 30, 1985, item number 7, 10.

Historian: Christeen Taniguchi, Senior Architectural Historian, and Nicole Collum, Galvin Preservation Associates, 1611 S. Pacific Coast Highway, #104, Redondo Beach, CA 90277, 2008-2009.

Project Information: MC 2 has not operated since 1992 when it was damaged during floods. It was not, however, decommissioned. The Southern California Edison Company, in conjunction with the San Bernardino National Forest, the agency that owns the property, proposes to formally decommission the facility. This process will include filling the sandbox and forebay with slurry, and removing the metal features. Although MC 3 is still in operation, it is also being recorded as part of this project because of the system's close association with MC 2.



Mill Creek 2 Exciters Site Plan. (Plan Courtesy of Southern California Edison)

