

BIG CREEK HYDROELECTRIC SYSTEM, COTTAGE 115
54347 Cedar Street
Big Creek
Fresno County
California

HAER CA-167-I
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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

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

HISTORIC AMERICAN ENGINEERING RECORD

BIG CREEK HYDROELECTRIC SYSTEM, COTTAGE 115

HAER No. CA-167-I

LOCATION: North side of Cedar Drive, about 175' west of the intersection of Cedar Drive and Huntington Lake Road
54347 Cedar Street, Big Creek, Fresno County, California
Township 8 South, Range 25 East, Mount Diablo Base Meridian

STRUCTURAL TYPE: Wood-frame residential bungalow

DATE OF CONSTRUCTION: Circa 1923

DESIGNER: Southern California Edison Construction Department (architect unknown)

BUILDER: Southern California Edison Construction Department

PRESENT OWNER: Southern California Edison, Northern Hydro Division

PRESENT USE: Vacant

SIGNIFICANCE: Cottage 115 is part of a group of residences constructed for Southern California Edison employees prior to 1929. It is part of the Big Creek Town Site Historic District, itself a part of the historic Big Creek Hydroelectric System.

The Big Creek system was the premiere example of the transition from the construction of isolated power plants serving local markets to the construction of large systems integrated with distant energy markets via high-voltage transmission. The Big Creek system is also significant in the history of the Los Angeles region. Conceived as a means of powering both residential development and electric railways, power from Southern California Edison's Big Creek plants was instrumental in the rise of suburban development in the region.

The system is closely associated with railroad, energy, and development magnate Henry Huntington; with Edison executives and power pioneers A.C. Balch, William Kerckhoff, and George C. Ward; visionary California hydroelectric engineer John Eastwood; and longtime Big Creek manager David Redinger.

Cottage 115 is associated with the early development of the Big Creek townsite, which is one of the few company towns still operating in California.

PROJECT

INFORMATION: Research was sponsored by Southern California Edison Corporation. This report was written by Daniel Shoup of Archaeological/Historical Consultants (Oakland, California) with contributions by Suzanne Baker. HAER photography was produced by David De Vries and Marissa Roche of Mesa Technical (Berkeley, California) between September 2009 and January 2010. Administrative and research support was provided by Don Dukleth of Southern California Edison, Northern Hydro Division (Big Creek, California), and Thomas T. Taylor of Southern California Edison, Corporate Environment, Health, and Safety (Rosemead, California).

Many publications and technical reports offer more detail on the Big Creek system. Former Big Creek superintendent David Redinger's *The Story of Big Creek* remains a key reference work. Other important works include a historic study and significance evaluation of the system, and a study of Big Creek town in the period 1929-1947, both by Laurence H. Shoup.¹

HAER reports for the Big Creek System prepared to date include:

- Operator Cottage, Big Creek # 8 (HAER CA-167-A)
- Big Creek #3 penstock standpipes (HAER CA-167-B)
- Operator Cottage 105, Big Creek Town (HAER CA-167-C)
- Operator House Garage, Big Creek Town (HAER CA-167-D)
- Big Creek Powerhouse 1 (HAER CA-167-E)
- Big Creek Powerhouse 2/2A (HAER CA-167-F)
- Big Creek Powerhouse 8 (HAER CA-167-G)
- Big Creek Powerhouse 3 (HAER CA-167-H)
- Operator Cottage 115, Big Creek Town (HAER CA-167-I)

¹ David Redinger, *The Story of Big Creek* (Los Angeles: Angelus Press, 1949); Laurence H. Shoup, *The Hardest Working Water in the World: A History and Significance Evaluation of the Big Creek Hydroelectric System*, Report prepared for Southern California Edison Company, Rosemead, CA, 1987; Laurence H. Shoup, *Life at Big Creek Town 1929-1947: Historic Context Statement and National Register of Historic Places Significance Evaluation*, Southern California Edison Company, Rosemead, California, 1997.

DESCRIPTION AND DIMENSIONS

Overview

Cottage 115 represents one of several classes of cottage built in Big Creek during the system's period of significance (1911-1929).² It was designed and built by the Construction Department of the Southern California Edison Company. Cottage 115 seems to have been a Class "A" cottage, a larger type that was assigned to more senior employees and their families. No original drawing is available for "A" Class cottages. However, View CA-167-I-14 shows the design of contemporaneous "B" class cottages, and illustrates construction techniques and materials that were used in both classes of structure. Views CA-167-I-1 through CA-167-I-9 show the exterior of the house, while Views CA-167-I-10 through CA-167-I-13 show the interior. Measurements given here represent distances between the centerline of posts and do not account for the thickness of walls.

Cottage 115 is a two-story residential building in the Craftsman bungalow style, which was popular in California during the Big Creek period of significance (1911-1929). The house is of stud-wall, wood-frame construction atop a perimeter concrete foundation. The house faces south and is constructed into a hillside with a slope of approximately 30 percent. As a result the main floor of the house at the front elevation sits approximately six feet above ground level atop a partial basement. The building measures 38' long on its north-south axis and 24' wide at the main body of the building (the rear addition is 27' wide).

The roof of the cottage has side eaves with exposed rafters that project past the line of the walls. The front and rear gables also project and have center and side eave brackets with pyramidal bosses. Originally another pair of brackets may have been located at the midpoint of the gable, as on the cottage of similar type shown in a 1920s archival photo. Gabled dormers are located on both sides of the roof (although these may be later additions). A belt course circles the house at the main floor level. The exterior walls of the cottage are covered with asbestos shingles over the original wood siding. The original siding was probably wood shingle.

The front façade has a projecting front entrance porch with a shed roof supported by four posts. The porch is 12'-6" wide and 5'-6" deep. It is accessed from the east (or the right-hand side as one faces the building). The porch and stairs have a simple balustrade with unadorned square posts. Double-hung 6-over-6 wood sash windows are located in the south façade at each end of the porch. Between them is a paneled entrance door with a fixed upper window, set asymmetrically to the façade but centrally to the porch. Above the shed roof, another double-hung 6-over-6 wood sash window opens into the attic.

On each side of the house, three windows are set at the main floor level in wood sash. On the west side, a double-hung 6-over-6 window opens into the living room, a small casement window opens inward above the kitchen sink, and a two-paned sliding window opens into the main space of the kitchen. On the east side of the house, three double-hung 6-over-6 windows open into the

² For a National Register significance assessment of Big Creek town and the Big Creek system, see Shoup, *Hardest Working Water*.

living room, bathroom, and bedroom. On the upper floor, the dormer windows are double-hung with one light in each window. A panel door at ground level on the west side of the building provides access to the basement (View CA-167-I-6).

The cottage has a rear (north) addition at the first floor level, built after the period of significance. The addition, 10' long and 27' wide, appears to be the enclosure of a previously open rear porch, and is accessed by a panel door on the western side of the room. A hipped roof on the western side indicates where the western part of the addition extends past the original building line. A band of windows stretches the length of the north façade, with three sliding and four fixed horizontally aligned 6-light windows. Below the gable on the north façade a double-hung 6-over-6 wood sash window opens into the attic.

First Floor

The entrance door opens into a main living room that spans the width of the house, 24' wide and 14' deep. To the right along the north wall a door leads into a built-in closet measuring 4' by 4' that projects into the room. A door to the left along the north wall opens into the kitchen. Shelves are built into the wall on either side of the window on the west (left) side of the room.

The kitchen runs along the west (left-hand) side of the house and measures 12' wide and 14' deep. A sink, countertop, and wooden cabinets run along the west wall. The cabinets appear to date from the 1960s. A door on the east wall of the kitchen leads into Bedroom 1, which measures 12' wide and 10' deep. Set into the south wall of the bedroom are a closet, measuring 4' by 4', and a bathroom, measuring 8' by 8'.

The rear addition to the house contains a second bedroom and a mudroom with stair access to the attic floor. Bedroom 2 is reached through a door in the north wall of Bedroom 1 and measures 12' wide and 10' deep. A closet 3' deep is set into the western side of the bedroom. The mudroom, 12' wide and 10' deep, has a rear exit door on the west wall and a staircase that accesses the attic floor.

The staircase has a plain railing and leads to an undecorated doorframe next to a double-hung 6-over-6 window with a plain sill (View CA-167-I-13). The portion of the original rear wall enclosed within the addition retains vertical wood shingles. Originally, this type of siding was probably used on the whole exterior of the house.

Second (Attic) Floor

The rear stairway ends in a small porch that opens onto the attic. The attic has two rooms, each 12'-6" wide and 12'-6" deep. The sloping line of the roof shapes the attic space, which is punctuated by the dormers. Built-in, 5' wide, storage cupboards line the east and west walls.

PRESENT CONDITION AND USE

Cottage 115 was used as a single-family residence from its construction in the early 1920s until the 1990s. It was unoccupied in early 2010. The exterior of the house, especially the front and side facades, appears much as it did on initial construction in the early 1920s. Though the asymmetrical location of the front door appears haphazard, it may have been typical of Class A

cottages. Given the placement of the concrete steps up from Cedar Drive, it seems likely that the side alignment of the porch steps is also original. It is unclear whether the attic dormers are original. Likewise, the plain balustrade may have been replaced at some point after the 1920s.

The interior of the house was apparently remodeled in the 1960s and is currently in fair to poor condition. The front room has linoleum floors and a false brick half-wall covering a portion of the western window, presumably as the backdrop to a stove or heater located on the floor, where there is a burn mark (CA-167-I-10).

The kitchen retains its original layout, although materials and hardware suggest that the cabinets and sink may have been replaced in the 1960s. The floor is in poor condition and the walls are in fair condition. The large window looking onto the condition also likely dates from the 1960s.

Bedroom 1 has linoleum floors in poor condition. Windows are original. A baseboard radiator has been added to the eastern wall of the room. The door leading to Bedroom 2, in the rear addition, was presumably added at the time the rear addition was built. Bedroom 2 is constructed in wallboard with linoleum floors. Partitions inside the closet appear to have been built in the 1960s or later.

The stairway that accesses the attic has a plain railing and leads to an undecorated doorframe next to a double-hung 6-over-6 window with a plain sill (CA-167-I-13). The portion of the original rear wall enclosed within the rear porch retains vertical wood siding, which may have originally been used on the whole upper portion of the house. These details further suggest that this was the original rear wall of the house and that the staircase and porch were on the outside of the original building.

The attic rooms have plywood floors that appear to have been installed since the 1990s. Walls are in fair to poor condition with some apparent water damage on the ceiling of the front room. Windows appear to be original. It is unclear whether the built-in closets are of original construction.

HISTORY

Cottage 115, along with several other older cottages in the eastern part of Big Creek town, was constructed in the early 1920s and is associated with the great expansion of the Big Creek hydroelectric system between 1920 and 1929.

The Big Creek system was the brainchild of visionary engineer John Eastwood (1857-1924), who first identified the Big Creek and San Joaquin River systems as an ideal location for a series of storage reservoirs and power plants.³ In 1901, Eastwood was hired by Allan C. Balch and William G. Kerckhoff of Pacific Light and Power to survey the region and plan a network of powerhouses.⁴ Controlled by Henry Huntington, Pacific Light and Power was created to generate electricity for his interconnected system of Los Angeles street railroads and real estate

³ Shoup, *Hardest Working Water*, 55-59; Charles A. Whitney, "John Eastwood: Unsung Genius of the Drawing Board," *Montana: The Magazine of Western History*, Summer 1969, 38, 41.

⁴ Shoup, *Hardest Working Water*, 83.

developments. It was not until 1910, however, that growth in demand in the Los Angeles region justified construction of the Big Creek system.

The town of Big Creek (called Cascada until 1926) was established in late 1911 as a construction camp for the Stone and Webster Construction Company, which built Powerhouses 1 and 2 for the Pacific Light and Power Corporation. Completed in late 1913, these two powerhouses had four generating units producing 80,000 horsepower, using some of the highest heads in the country. At 240 miles long, the power lines connecting Big Creek with Los Angeles were among the world's longest, and set a new record for using 150kV in commercial transmission. *Electrical World* recognized the feats achieved in the construction of the system as "one of the most advanced contributions of the engineer to the welfare of civilization."⁵

The outbreak of World War I in 1914 affected both the American credit markets and power consumption, delaying expansion plans for Big Creek.⁶ In the meantime, however, Pacific Light and Power (PLP) merged with Southern California Edison (SCE) in 1917, fulfilling Henry Huntington's dreams of consolidating southern California utilities under his control. The two systems complemented each other: PLP had extensive street railroad interests but relatively limited residential service, and the Big Creek plants provided more electricity than it could use. Edison, on the other hand, had a rapidly expanding residential business and was facing a looming shortfall of generation capacity.⁷

The great expansion of the Big Creek system began in 1920 with the construction of Powerhouse 8. Powerhouses 1 and 2 were expanded between 1921 and 1925, and Powerhouse 3 was built in 1923. The later 1920s saw the addition of more storage capacity to the system through the construction of Florence Lake, the Mono-Bear Conduit, and the expansion of Shaver Lake. The latter project provided water to feed Powerhouse 2A, which was completed in 1928. When construction wound down in 1929, the system had set world records for voltage used in transmission, tunnel size and length, dam length, and size of hydraulic equipment. The system used half a million horsepower to generate over 400,000 kilowatts of electricity.⁸

The expansion of the Big Creek system led to a rapid expansion of both population and development in the early 1920s. By 1923 the town was divided into two distinct areas: a company town on 50 acres near the powerhouse and an upper, private town on the other side of the incline railway. Though the land was owned by the US Forest Service, Southern California Edison was issued a special use permit for construction of the company part of town.⁹ Cottage 115, probably built in 1923 or 1924, was one of the cottages built in the lower, company-operated part of town and represents part of the massive expansion of housing in the area during this period.

⁵ "The 150,000-Volt Big Creek Development," *Electrical World*, January 3, 1914, 33.

⁶ Shoup, *Hardest Working Water*, 153.

⁷ "Merger of California Hydroelectric System," *Electrical World*, December 9, 1916, 1134.

⁸ Shoup, *Hardest Working Water*, 163.

⁹ Shoup, *Hardest Working Water*, 262.

Big Creek and the surrounding construction camps had only around 500 residents in 1920, but population increased to 1,400 in 1923 and was over 5000 by the middle of the decade.¹⁰ The school population doubled from 80 students in 1922 to 150 students in late 1923.¹¹ As long time Big Creek superintendent David Redinger recalled:

Uptown Big Creek was enjoying a boom during the '20s, such as it never knew before or has known since. Our five-thousand to fifty-two hundred men, spread over thirty-two camps, kept three barber shops and six dentists busy...Reardon's movie theater provided good films and current news reels. Busiest of all was Murphy's Art Shop. If he didn't have what you wanted, he would order it - whether it was a penny article or a grand piano.¹²

The town main street also included a hardware store, bakery, butcher shop, laundry, dry goods store, real estate office, a restaurant, a general store, and a women's clothing store.

Company cottages such as Cottage 115 were seen as desirable by many employees, since they were subsidized by Southern California Edison. At most times, demand for company cottages outstripped supply, and cottages were assigned based on seniority and the number of children in a family. Cottage 115, as one of the larger class of company cottages in Big Creek town, was therefore probably assigned to a senior employee who was married with children.

The end of major construction work at Big Creek coincided with the Wall Street crash of 1929. By the end of 1929 the Big Creek Division had only 190 employees, and the onset of the depression led to cutbacks in staffing and hours in the following years. A serious fire destroyed much of the business district in 1930, and many of these businesses were not rebuilt.¹³ Though the population of Big Creek increased somewhat after the 1940s, it has never again reached the level of the 1920s.

SOURCES OF INFORMATION

Research Sites

Archival research for this report was conducted in the following locations:

- Bancroft Library, University of California, Berkeley, California
- University of California Northern Regional Library Facility, Richmond Field Station, Richmond, California
- Southern California Edison Collection, Huntington Library, San Marino, California
- Plant Accounting Department, Southern California Edison Company, Rosemead, California

¹⁰ Fourteenth Census of the United States, Cascada Precinct, Fresno County, California, 1920, on file, University of California at Berkeley; *Edison Facts*, October 1923, 14; Redinger, 117.

¹¹ Shoup, *Hardest Working Water*, 265.

¹² Redinger, 117.

¹³ Shoup, *Hardest Working Water*, 301.

- Northern Hydro Division Headquarters, Southern California Edison Company, Big Creek, California

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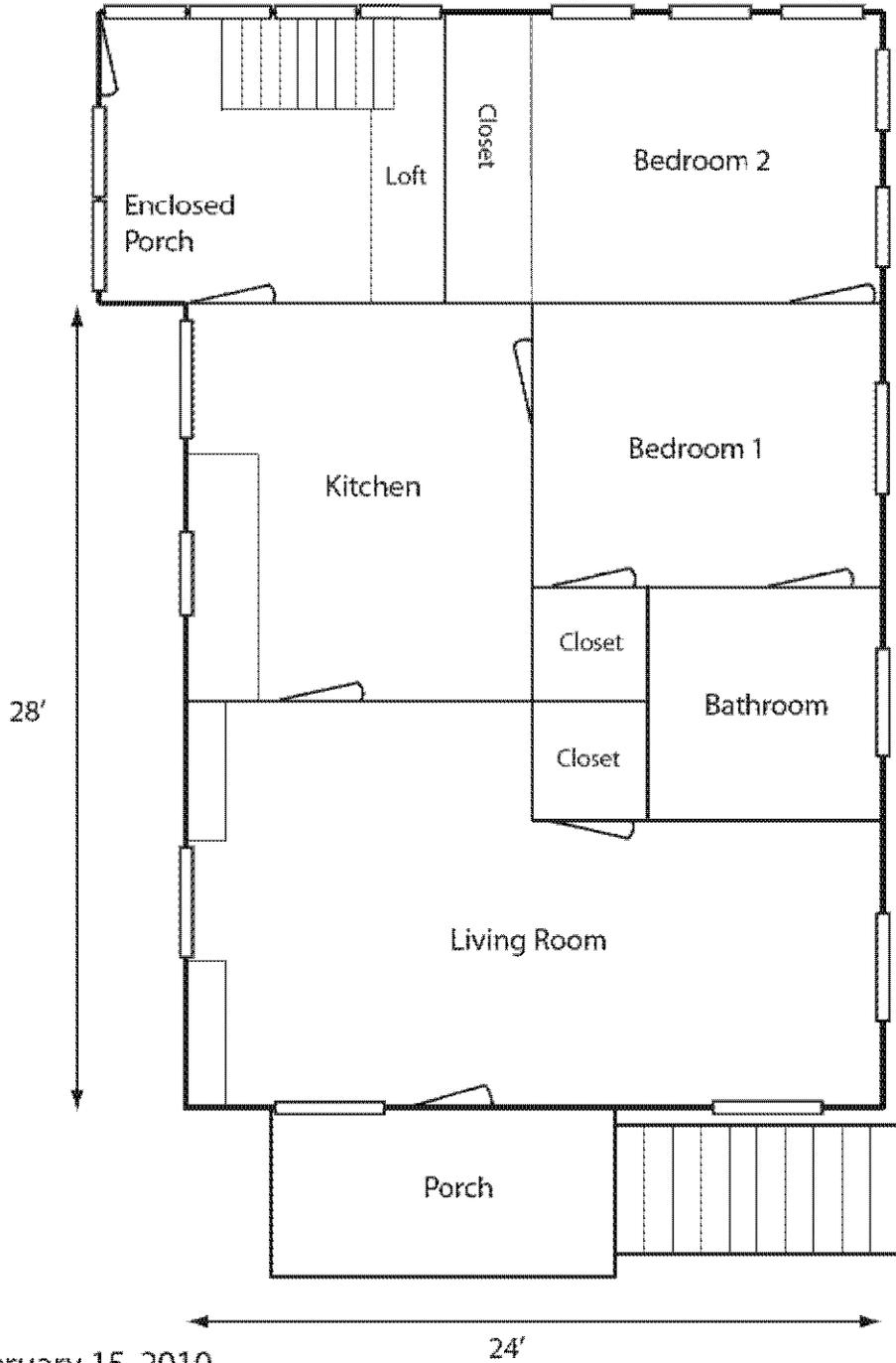
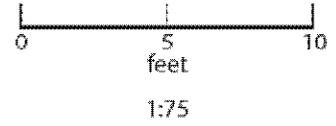
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Big Creek Cottage 115
HAER CA-167-I
First Floor Plan



February 15, 2010
D. Shoup

Big Creek Cottage 115
HAER CA-167-I
Second Floor Plan

February 15, 2010
D. Shoup

