United Engineering Company Shipyard,
Electrical Services and Switching Station
(United Engineering Company Shipyard,
Power Substation No. 125)
(Building No. 10)
2900 Main Street
Alameda
Alameda County
California

HAER No. CA-295-G

HAER
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1-ALAM,
4G-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
San Francisco, California

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HISTORIC AMERICAN ENGINEERING RECORD

UNITED ENGINEERING COMPANY SHIPYARD, ELECTRICAL SERVICES & SWITCHING STATION
(United Engineering Company Shipyard, Power Substation No. 125)
(Building No. 10)

HAER No. CA-295-G

Location: 2900 Main Street
Alameda
Alameda County
California

U.S.G.S. 7.5 minute Oakland West, Calif. quadrangle.
Universal Transverse Mercator Coordinates: 10.562590.4184\2540

Present Owners:

074-0891-003	074-0905-001-04
City of Alameda	Alameda Gateway Ltd.
City Hall	2900 Main Street
Alameda, CA 94501	Alameda, CA 94501

Present Occupant: Unoccupied

Present Use: Power Substation

Significance: The electrical services and switching station is a contributing structure in the United Engineering Company Shipyard historic district that has been determined eligible for the National Register of Historic Places. The United Engineering Company Shipyard, established in 1941 to build and repair ships for the U.S. Navy, is the last surviving of several large World War II shipyards in Alameda. United Engineering built 21 tugboats and repaired hundreds of ships during the war. The facility was one of the largest employers in Alameda and played an important economic and social role in the city. As the entry point for electric power, this building served an essential function in the operation of heavy machinery at the shipyard.

PART I. HISTORICAL INFORMATION

A. Physical History

1. **Date of erection**: the switching station was built in 1945.

2. **Engineer:** the Electrical Services and Switching Station was designed by Austin Willmott Earl, consulting engineer. Little is known about Earl except that he graduated from the University of California in 1906 and that in 1937 he resided in San Francisco and conducted a consulting business in civil engineering at 55 New Montgomery Street, San Francisco.

3. **Original and subsequent owners, occupants, and uses:** the switching station was built while United Engineering owned the shipyard. In 1946, Matson Navigation purchased the yards, including the switching station. In 1948, Todd Shipyards Corporation leased the property and in 1959, they bought it. Finally, the current owner, Alameda Gateway, bought the property in 1983.

   The electrical services and switching station was built to accommodate the electrical equipment (such as breakers, meters, and switches) needed to provide power to buildings and equipment throughout the shipyard. The electrical services and switching station is now called the power substation, building no. 125, but its function remains the same.[1]

4. **Builder, contractor, suppliers:** unknown

5. **Original plans and construction:** in January of 1945, consulting engineer Austin Willmott Earl created plans for the electrical services and switching station for the United Engineering Company. The switching station was part of a major construction campaign the company undertook in order to have adequate facilities to build boats for the U.S. Navy.

   The building was constructed as a one-story reinforced concrete and concrete block structure with a rectangular plan and a reinforced-concrete gabled roof. It cost $5,521.00. In 1946, it was labeled building no. 49a. In 1948, it was labeled "primary substation" on Sanborn Company maps. In 1970, the Alameda County Recorder labeled it building no. 33.

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1 Austin Willmott Earl, Consulting Engineer, *Electrical Services & Switching Station, Station Building.* (San Francisco, CA: United Engineering Co. Ltd., Alameda Shipyard, Ship Repair Facilities, 20 January 1945) drawing 504.

B. Historical Context

In 1941, United Engineering purchased an existing rail maintenance and repair yard and converted the facility to a shipyard. Shortly thereafter, the company secured contracts from the United States Navy to build tugboats for the war effort and later to repair larger ships. The property continued in use exclusively as a shipyard until 1984. Since that time, it has been used primarily as a shipyard and for other marine and industrial purposes.

PART II. ARCHITECTURAL INFORMATION

A. General Statement

1. **Architectural character:** the switching station is utilitarian in appearance.

2. **Condition of fabric:** the switching station has not been altered, still houses original equipment, and appears to be in good condition.

B. Description of Exterior

1. **Overall dimensions:** the switching station is a small one-story building with a rectangular-shaped plan. The building measures 37 feet 2¼ inches across the east and west sides and 21 feet across the north and south ends. The building has a total area of 780.5 square feet.[2]

2. **Foundation:** the building sits on a reinforced concrete slab with a rock fill base.

3. **Walls:** the walls are 1 foot thick and are made of board-formed reinforced concrete beams and concrete block infill. The exterior surface is covered with rough cast stucco.

4. **Structural system, framing:** reinforced concrete columns and beams are the main structural members. Each column is reinforced with four 1 inch diameter rods, which run vertically in the column corners. The spaces between the columns are filled with concrete block.

   Section drawings show the floor slab is reinforced with 7/8 inch diameter rods running the width of the building just under the surface and three 5/8 inch

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2 Ibid.

diameter rods along the bottom. The ceiling slab is reinforced longitudinally with 7/8 and ¾ inch bars and vertically with ½ inch bars.[3]

5. **Openings:**

   a. **Doorways and doors:** the building has only one doorway, and it is located on the north end of the building. It has a pair of wooden plank doors, which are probably original to the building. "PRI SW SUBSTATION" is painted on the doors.

   b. **Windows:** the east and west sides of the building have three bays of windows symmetrically placed. The openings are filled with glass brick and have pre-cast concrete sills.

6. **Roof:**

   a. **Shape, covering:** the building has a gabled roof with only a slight pitch. It was originally covered with a "Built Up Roofing Type 4ACS". The roof covering isn't visible. In the center of the roof there is a large raised steel ventilator, which cools the equipment located inside the building. A sign directing visitors to the North Sails Company sits on the roof.

   b. **Cornice,** eaves: the building has overhanging eaves of reinforced concrete.

   c. **Dormers, cupolas, towers, vents:** there is a large, steel, raised vent in center of the roof. It is rectangular and has louvered vents on the sides.

C. **Description of Interior**

1. **First floor plan:** is composed of a single rectangular room that houses breakers and switches.

2. **Flooring:** the floors are reinforced concrete covered with cement.

3. **Wall and ceiling finish:** the interior walls are composed of exposed reinforced concrete beams with concrete block infill.

4. **Windows:** the openings are fitted with glass bricks and have concrete sills.

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3 Ibid.

5. **Hardware:** the hardware appears to be original and is of standard manufactured design.

6. **Mechanical equipment:**

   a. **Heating, air conditioning, ventilation**: there are no heating or air conditioning systems, and ventilation is passive through a vent in the roof.

   b. **Lighting:** the building was wired for electricity at the time of its construction and was built to house switches and breakers. The building has what appear to be the original incandescent lighting fixtures and globes.

   c. **Plumbing:** the switching station does not have plumbing.

   d. **Electrical equipment:** as the switching station for much of the shipyards, the building housed a large amount of electrical equipment. In the center of the building there is a bank of controls composed of 7 panels of General Electric switches, meters, and dials. The switches are labeled with the areas of the shipyard they control for example, "Pier 2," "Dry Dock 3," and "Pier 5." One panel is labeled as the incoming line from Alameda Light and Power. In the southeast corner of the room, there is a "General Electric Manual Trip Device." Along the west wall, there are three tiers of Gould switches. North of these there is the "Main Switch." On the exterior of the building there are electrical conduits on the south and west sides.

D. Site

1. **General setting and orientation:** the electrical services and switching station is located east of the Inspection and Repair Shops building and north of the warehouse. The building is completely surrounded by asphalt.

PART III. SOURCES OF INFORMATION

A. Original Architectural Drawings, Maps and Plans

Alameda Gateway. *Existing Site Plan.* 30 January 1984.

Earl, Austin Willmott, Consulting Engineer. *Electrical Services & Switching Station, Station Building.* San Francisco, CA: United Engineering Co. Ltd., Alameda Shipyard, Ship Repair Facilities, 20 January 1945.

Kennedy, Clyde C., Engineering Office of. "Area Plan and Interceptor Profile: Improvements to Sewer System for Properties Occupied by Todd Shipyards Corp., Alameda, Calif." Prepared for Matson – United Properties, Inc. 9 August 1951.

Sanborn Map Company. *Insurance Maps of Alameda, California*, p. 93. New York: 1948.

B. Bibliography

United Engineering Company Ltd. Memo to Chief of the Bureau of Yards and Docks. "Reproduction Costs and Market Value to Third Parties of 'Civil Works'", with Estimated Schedule of "Civil Works" Facilities. 8 February 1946.

Alameda County Recorder. Exhibit B: Description of Buildings, Waterfront Improvements, Shipyard Utilities, Machinery and Equipment. 18 February 1970. RE: 2568, IM 80-82.

United States. Army Corps of Engineers – San Francisco District and California. State Historic Preservation Officer. Memorandum of Agreement Regarding the Oakland Harbor Navigation Improvements Project, Alameda County, California. Signed 31 January 2001 and 22 January 2001.

Widell, Cherilyn, State Historic Preservation Officer. Letter to Richard G. Thompson, Lieutenant Colonel, San Francisco District, Corps of Engineers, Regarding Oakland Harbor Ship Channel Deepening and Improvements, Alameda County [Determination of Eligibility Concurrence]. 9 June 1998.

Thompson, Richard G., Lieutenant Colonel, San Francisco District, Corps of Engineers. Letter to Cherilyn Widell, State Historic Preservation Officer, requesting Determination of Eligibility. 30 April 1998.

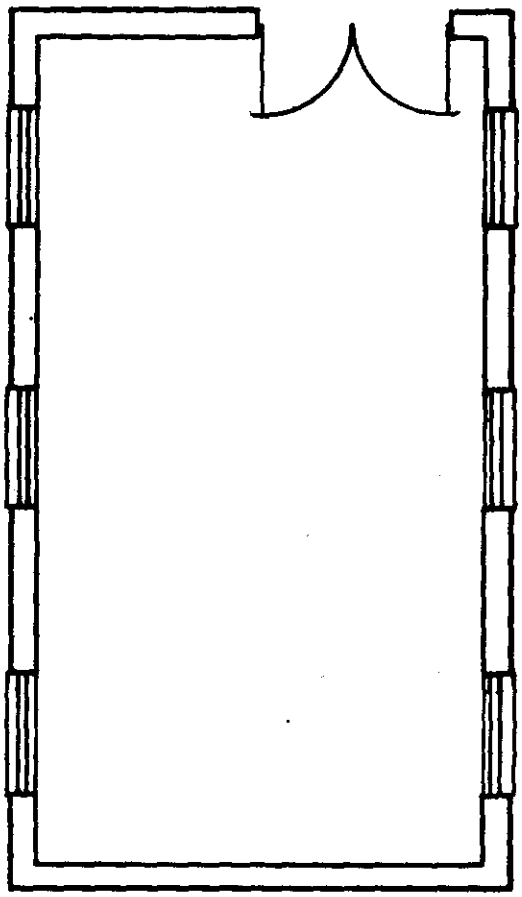
PART IV. PROJECT INFORMATION

This report was prepared for the U.S. Army Corps of Engineers and the Port of Oakland in accordance with a Memorandum of Agreement (MOA) between the U.S. Army Corps of Engineers, San Francisco District and the California State Historic Preservation Officer concerning the former United Engineering Company shipyard. The Port of

Oakland and the City of Alameda were concurring parties to the MOA. The MOA was created because of a proposal by the U.S. Army Corp of Engineers in partnership with the Port of Oakland to sponsor the Oakland Harbor Navigation Improvements Project. This project "would deepen Oakland Harbor channels and berth areas from –42 feet mean lower low water (MLLW) to –50 feet MLLW, with 2 feet overdredge allowance" and widen some portions of the channels. These actions, which would constitute an Undertaking under Section 106, would result in the demolition of several buildings and structures at the former United Engineering Company Shipyard. Because the shipyard had been determined eligible for the National Register of Historic Places, the Undertaking would have an adverse effect on the property. Under the MOA, the following HAER documentation has been prepared: a written historic and descriptive report on the shipyard as a whole, seventeen separate reports on individual buildings and structures in the shipyard, including this report, and photographic documentation.

This building will not be demolished by the federal undertaking.

This report was prepared by Jody Stock, architectural designer, and Michael R. Corbett, architectural historian. Corbett was a subcontractor to Basin Research Associates of San Leandro. Basin Research was under contract to g. borchard & associates.



BUILDING NO. 10: ELECTRICAL SERVICES AND SWITCHING STATION

NORTH

Prepared by Jody R. Stock
12/14/00

0 2 4 8 12 feet

*Plan is based on scaled drawing, Austin Willmott Earl, Consulting Engineer, *Electrical Services & Switching Station Building* (San Francisco, CA: United Engineering Co., Ltd., Alameda Shipyard, Ship Repair Facilities, 20 January 1945). The plan reflects current field conditions and is to scale.