CUSHMAN NO. 1 HYDROELECTRIC POWER PLANT, CUSHMAN SUBSTATION
3713 North 19th Street
Tacoma
Pierce County
Washington

HAER WA-26-G
HAER WA-26-G

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
PACIFIC WEST REGIONAL OFFICE
National Park Service
U.S. Department of the Interior
333 Bush Street
San Francisco, CA 94104

HISTORIC AMERICAN ENGINEERING RECORD

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HAER No. WA-26-G

Location:	3713 North 19th Street, Tacoma, Pierce County, Washington USGS Topographic Quad: Tacoma North Township 21 North, Range 2 East, Section 36
GPS Coordinates:	Latitude: 47° 16'000 N, Longitude: 122° 29'206 W This coordinate represents the center of the Cushman Substation building. Obtained October 17, 2012, using Google Earth (© 2012). The coordinate's datum is North American Datum 1983.
Present Owner:	City of Tacoma, Department of Public Utilities, Light Division (doing business as Tacoma Power)
Present Use:	Hydroelectric Power Production
Significance:	Cushman No. 1 Hydroelectric Power Plant Substation represents a significant achievement in power production for the City of Tacoma. Constructed in response to unprecedented increases in power demands in the city, the Cushman No. 1 Development led to further industrial and commercial expansion. The Cushman Substation, located in a residential neighborhood of Tacoma, was the only urban building constructed for the Cushman Hydroelectric Project and is a visual representation of the importance of public energy facilities to growth in the region.
Date:	Constructed 1923–1925
Builder:	Tacoma City Light
Report prepared by:	Natalie K. Perrin, M.S., and Heather Lee Miller, Ph.D. Historical Research Associates, Inc. 1904 Third Avenue, Suite 240 Seattle, WA, 98101 and John Stamets, Photographer 493 14th Avenue East Seattle, WA 98112
Submittal Date:	July 17, 2014

I. PROJECT DESCRIPTION

The City of Tacoma, Department of Public Utilities, Light Division (doing business as Tacoma Power) owns and operates the Cushman Hydroelectric Project (the Project). The Project is operated under a 50-year Federal Energy Regulatory Commission (FERC) license (FERC Project No. 460), which was granted on July 15, 2010, following over 20 years of negotiations with federal, state, local, and tribal entities. The Cushman Hydroelectric Project comprises two historic districts listed in the National Register of Historic Places (NRHP) in 1988, specifically the Cushman No. 1 Hydroelectric Plant Historic District and the Cushman No. 2 Hydroelectric Plant Historic District. At the time of this writing, the two districts are being combined into one historic district known as the Cushman Hydroelectric Project Historic District; the district, as revised, encompasses the Cushman Nos. 1 and 2 Developments and a segment of the Potlatch (Cushman) Transmission Line.

The Cushman Hydroelectric Project plays an integral role in the City of Tacoma's infrastructure and economic development. The Cushman No. 1 Hydroelectric Power Plant or, more accurately, the Cushman No. 1 Development, includes buildings and structures from the initial building campaign of the Project, 1923–1925. The Cushman No. 1 Development impounds Lake Cushman, and includes the Cushman No. 1 dam and valve house (HAER No. WA-26-B), the Cushman No. 1 powerhouse (HAER No. WA-26-C), the inclined tram and tram house (HAER No. WA-26-D), the water conveyance system (HAER No. WA-26-E), and the Potlatch (Cushman) transmission line (HAER No. WA-26-F). The original spillway (HAER No. WA-26-A) was removed and replaced with a modern spillway in 1991. One additional resource is historically related to the Cushman No. 1 Development, the Cushman Substation (HAER No. WA-26-G), located in Tacoma, Washington. Additionally, resources of the Cushman No. 2 Development (HAER No. WA-192), completed in 1930, are integrally tied to the Cushman No. 1 Development via shared resources such as the Potlatch transmission line and, historically, the Cushman Substation.

As part of FERC relicensing, Article 414 requires a floating surface collector (FSC) and net transition structure (NTS) be installed at the Cushman No. 1 Development, to facilitate downstream fish passage. Construction of the FSC and NTS is considered an undertaking under Section 106 of the National Historic Preservation Act of 1966 (as amended), and constituted an unavoidable adverse effect on a historic property. To minimize the adverse effect, Tacoma Power consulted with an architectural historian during project design phases; combined the Cushman Nos. 1 and 2 Hydroelectric Power Plant historic districts into one Cushman Hydroelectric Project historic district via a NRHP nomination update; and completed this Historic American Engineering Record (HAER) documentation to addend the 1989 recordation of the Cushman No. 1 spillway. As such, the Cushman Substation is hereby recorded in accordance with HAER Level II documentation.

II. HISTORIC CONTEXT

In 1893, the City of Tacoma bought Charles Wright's Tacoma Light and Water Company, thereby becoming one of the first cities in the Pacific Northwest to own and operate a municipal electrical system.[1] Known for political Progressivism, the Pacific Northwest was at the vanguard of the reform movement to control utilities' cost and quality by placing them under public ownership. In the mid-nineteenth century, most American cities awarded franchises to private utility companies, but reformers in the Progressive Party targeted the system's potential for graft, favoritism, and corruption. They maintained that a publicly owned utility would not only eliminate unsavory collusion among private businessmen and public officials but also promote more efficient management.[2] Unlike older cities in the American East and Midwest, Tacoma was able to move quickly toward a more democratic utility system.

After the 1893 purchase, the former Tacoma Light and Water Company became part of the City of Tacoma's Light Department, a division of the city formed to provide municipal lighting and power. The division was operating under the name Tacoma City Light by 1915, a name it would maintain until 1989, after which the organization continued doing business under the name Tacoma Power.

By the turn of the twentieth century, growing consumer demand had overtaxed the direct current system, and the city had to purchase additional power from private companies in the region. In 1909, Tacoma voters authorized construction of a hydroelectric generating facility on the Nisqually River. Attempts to develop a power plant on the North Fork of the Skokomish River at Lake Cushman actually began in 1912, when Seattle citizens approved a related bond issue. The City of Seattle issued condemnation notices to property owners, but abandoned the project in 1914.[3]

By 1917, Tacoma was experiencing a population explosion and needed a new source of electric power to meet the increasing demands of domestic labor-saving devices and power-dependent industries. Public Utilities commissioner Ira S. Davisson and Tacoma City Light reselected the Lake Cushman site for a new hydroelectric complex. The city applied for water rights and reservoir permits in 1919, and began condemnation proceedings the same year for the needed land.

In 1922, Davisson hired Jay L. Stannard from San Francisco to serve as chief engineer for the Cushman project. While some of the interviewees for the position wanted as much as $35,000 a year, Stannard offered his services at the bargain rate of $7,500. He explained, "it's just what I wanted to do. . . . I made a thorough investigation of the Cushman project in 1917 with the idea of doing it for Seattle and have always wanted to develop the project."[4] Jay Stannard was born to Gilbert and Esther Stannard in New York in 1866. By 1880, the family had relocated to Shell

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[1] Malloy and Ott, *The Tacoma Public Utilities Story*, 13.

[2] Wiebe, *The Search for Order*, 166–72.

[3] Neumann et al., *Cultural Resource Management Plan* A3-9.

[4] Malloy and Ott, *Tacoma Public Utilities Story*, 84.

Rock, Iowa, in a westward trend that Stannard would continue all the way to Washington. By 1900, Stannard and his wife Carrie, whom he married in 1899, were lodging in Everett, Washington. Stannard worked with the Great Northern Railway as early as 1902, when he led a survey from Columbia Falls to Tobacco Plains in Flathead, Montana.[5] Stannard also spent time in Oregon, where he was employed by the City of Baker as consulting engineer for a municipal hydroelectric project.[6] An August 1917 edition of Electrical Review noted, "J. L. Stannard, Portland, Oregon, is consulting engineer in connection with the proposed hydroelectric plant for the City of Seattle. He has made plans and estimates covering all phases of the contemplated project."[7] By the time Cushman was proposed for Tacoma, Stannard's career as a civil engineer appears to have been well established.

The contract for construction of the first Cushman dam (built near Hoodsport) was let to Guthrie & Company of Portland, Oregon, in spring 1924. (Guthrie & Company would also later be awarded the contract for construction of the Cushman No. 1 powerhouse under a separate bid.) Work on the tunnel shafts began first, on May 1, 1924, and peaked in 1925. After a two-year construction period, Lake Cushman began rising to fill the valley. The Cushman Powerhouse No. 1 was constructed concurrent with the dam, beginning in spring 1925 and completed in March the following year. Located 700 feet downstream of the dam, the building housed the water turbines and generators, as well as the exciter switchboard and control room.

To distribute the power of the water, 44 miles of transmission lines were constructed to carry the full load capacity of the Cushman No. 1 powerhouse. The first 5 miles carried the line to the future site of the Cushman No. 2 powerhouse (completed in 1930). The remaining 39 miles carried the power into Tacoma, crossing the Skokomish Flats, the two relatively benign water crossings at North Bay and Henderson Bay, and the daunting Tacoma Narrows crossing, a particularly treacherous and windy water corridor almost a mile wide. When the transmission line across the Narrows was completed in 1925, the approximately 6,244-foot-long span was the longest aerial electrical span in the world, with pairs of 315-foot-tall steel towers supporting cables that carried Cushman power across the Narrows to the city.[8] The line continued into Tacoma via North 21st Street, terminating at the Cushman Substation.

Original blueprints of the Cushman Substation, dated December 3, 1924, and on file with Tacoma Power, reference Structural Engineer J. Verne Gongwer, Superintendent of Electrical Construction A. F. Darland, and, of course, Chief Engineer Jay Stannard. Additionally, James Parker is thought to have prepared the plan and perspective drawings, though it is unknown to what extent he was involved in the design phase.[9]

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[5] "Surveying and Speculation Continues in Flathead," *The Inter Lake*, January 3, 1902, Great Northern Railway, Kalispell Division, http://www.gnry.net/lookingback/lbi1900s.html#1902.

[6] "News Notes," *Journal of Electricity, Power and Gas* 33 (December 26, 1914): 589.

[7] "Personal and Biographical," *Electrical Review* 71, no. 6 (1917): 250.

[8] Malloy and Ott, *Tacoma Public Utilities Story*, 88.

[9] "Bid for Cushman Substation to be Called this Week," *Tacoma Sunday Ledger*, December 7, 1924, E-8.

Verne Gongwer, an engineer from Michigan, would later be known as the "hero" of the Cushman Substation. Using his "engineer's know-how," he designed the building without the aid of degree in architecture. He is even credited for concocting "a shortcut for spiffing up the substation," specifically the Greek Revival entry and buffed concrete finish. Gongwer is also credited with the design of the Tacoma Narrows crossing of the transmission line.[10]

Alvin F. Darland served as the superintendent of electrical construction for the entire Cushman Hydroelectric Project. "Reared and educated in Tacoma," Darland graduated from Stadium High School and, in 1914, the University of Washington. He began his electrical career at the Todd Drydock & Construction Corporation, working on the electrical installations of the yard as well as the US cruisers built there. He joined the Tacoma Light Department around 1916, and began work on the Cushman Project in April 1923. He is credited with the "splendid electrical layouts of the Cushman (No. 1) power house, substation and transmission lines."[11]

Bidding for the contract to construct the Cushman Substation was closed in December 1924. Sixteen contractors submitted twenty proposals, with cost estimates ranging from $166,470.80 up to $241,656.05. The lowest bid was received of Dougan & Chrisman of Seattle, and included construction of the substation building, the tunnels, footings for the exterior switchyard equipment and the steel structures to support the heavy bus connectors. The firm was officially awarded the contract for the Cushman Substation in January 1925 , and began work on the building shortly thereafter.[12]

Founded by James Madison Dougan in 1908, Dougan & Chrisman had offices in both Seattle and Portland, Oregon. In Portland the firm was known for construction of the Elks and Masonic temples, the Benson Hotel, and the US National Bank Building, among others. In Seattle, the firm constructed the Virginia Mason Hospital, the Garfield School, and several state university buildings.[13]

Concrete for the foundations of the Cushman Substation was poured in March of 1925, with deep excavations required to allow for the huge generators the building would house.[14] The roof of the substation was poured in August.[15] By October, the distinctive metal windows were being installed, and much of the heavy electrical equipment had been installed in the adjoining switchyard.[16] In January 1926, "a giant 80-ton condenser" was the first piece of machinery tested

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[10] Bart Ripp, "A Very Juicy Past: Cushman Sub-Station Is an Elegant Reminder of Tacoma Public Utilities' Century of Providing Power," *Tacoma Daily Ledger*, November 29, 1993, 3. See also *Tacoma Daily Ledger*, February 28, 1926. Cushman Substation Edition, 11.

[11] "Cushman Power Project Edition," *Tacoma Daily Ledger*, February 28, 1926, 11.

[12] "City Power Substation Bids Open," *Tacoma Daily Ledger*, December 30, 1924, 1.

[13] Ila L. Wakley, "James Madison Dougan," S. J. Clarke Publishing Company, *The USGenWeb Project*, accessed March 17, 2014, http://usgenweb.org/. http://files.usgwarchives.net/or/multnomah/bios/dougan444gbs.txt.

[14] "Pouring Concrete for New Substation," *Tacoma Daily Ledger*, March 9, 1925, 3.

[15] "Work Being Speeded on Big City Substation," *Tacoma Daily Ledger*, August 16, 1925, A-4.

[16] "Getting Ready to Receive Cushman Current," *Tacoma Daily Ledger*, October 11, 1925, A-11.

at the substation, the success of which marked that the building and associated transmission lines and operating equipment were "practically ready to receive power from the Skokomish River."[17]

Designed to handle the power from both the Cushman No. 1 and the planned Cushman No. 2 powerhouses, the substation was constructed in the heart of one of Tacoma's residential districts. As such, "every effort was made to effect a design that was not only permanent and efficient in operation, but was also a beautiful piece of architecture and would harmonize with the surroundings."[18] Contemporary newspapers remarked on the Cushman Substation as not only "a model of electrical engineering, but its distinctive design will be in keeping with the residential section in which it will be constructed."[19] Cost of construction of the building was estimated at $150,000, with additional costs of operating and electrical equipment "representing a valuation of more than $550,000 when completed… The cost of the plant unit by unit as a whole is said to be far below the cost of other hydro-electric plants and will enable Tacoma to maintain its place in the industrial world as the home of the nation's cheapest electrical power."[20]

The three-story reinforced concrete building was constructed with

> an architectural treatment worthy of any building in the heart of the City. The cornice, pilasters, mouldings, etc. were all formed and poured monolithic with the main building. The surface treatment of the outside of the building, as well as all other exposed concrete on the block which the building occupies, is what is known as a "rubbed finish." This consists of rubbing the concrete surfaces, after being stripped, with a rough carborundum stone until all film, fins and unevenness disappears, and then painting with a neat cement grout and rubbing in with a fine carborundum stone until only enough material is left on the surface to fill all of the voids and produce a smooth sandstone-like appearance. This finish harmonizes very well with the aluminum finish used on the towers, transformers, switches, and other equipment in the outdoor portion of the substation.[21]

As constructed, "one of the most interesting" features of the Cushman Substation "was the placing of thousands of feet of conduit in the floor slabs, walls and columns of the building." High-voltage wiring from exterior bussing equipment entered the substation via basement tunnels. Concrete barriers separated and insulated the high-voltage busses, while lower-voltage circuits were distributed via iron conduits cast into the concrete structure of the building.[22]

By March 1926, there was sufficient water in the Lake Cushman reservoir to begin producing power.[23] The 44-mile-long Potlatch Transmission Line, extending from the Cushman No. 1

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[17] "Test of Machine's Success," *Tacoma Daily Ledger,* January 1, 1926, A-1.

[18] Ira S. Davisson and Llewellyn Evans, "Cushman Power Project," *1924–1925 Information Book of the Light Department, City of Tacoma, Washington,* 73, Washington State Archives, Puget Sound Region Branch, Tacoma Municipal Government Collection, Tacoma Public utilities Division, Reports and Publications, PS611-81A-86.

[19] "Bids for Cushman Substation to Be Called This Week," *Tacoma Sunday Ledger,* December 7, 1925, E-8.

[20] "Bids for Cushman Substation to Be Called This Week,"E-8.

[21] Davisson and Evans, "Cushman Power Project," 73.

[22] Davisson and Evans, "Cushman Power Project," 73.

[23] Malloy and Ott, *Tacoma Public Utilities Story,* 88; Overland, *Early Settlement,* 40.

powerhouse to the Cushman Substation in Tacoma, was first energized on March 23, 1926.[24] At the formal dedication held in May, "the current from the dam was turned on in Washington, D.C., by President Calvin Coolidge using a key made by Lincoln High School students, which included gold from a Northern Pacific Railroad souvenir spike."[25] The Cushman system has provided power for the city of Tacoma ever since.

From its inception in 1893, Tacoma's public utility had sold power for commercial purposes in order to reduce the cost of residential power and light. The move to promote industrial expansion within the city directly influenced municipal power development. Following the opening of Cushman No. 1 and the Cushman Substation in 1926, several large industrial enterprises located plants in Tacoma. A consequent population boom and the availability of inexpensive electricity also encouraged consumers to purchase electric stoves, refrigerators, washing machines, and smaller appliances. In fact, demand was so great that by 1927, a year after Cushman No. 1 came online, the City Light department was promoting a second dam on the Skokomish River with the dire prediction that, without increased electrical output, Tacoma would "face a power shortage within three years."[26]

In spring 1929, Tacoma City Light began construction of the second power plant on the Skokomish River, 2 miles downstream from the first. With the water discharged from Cushman No. 1, Cushman No. 2 utilized the remaining 480-foot elevation drop to the Hood Canal, a 240-foot-high arch dam, and a 13,000-foot-long tunnel to provide additional power for the city. Construction of Cushman No. 2 began none too soon: extreme drought in fall 1929 forced the city to rely in part on supplemental power supplied by the U.S.S. Lexington, which remained anchored in Tacoma harbor from December 18, 1929, through January 16, 1930.[27]

The combined Cushman Nos. 1 and 2 systems were poised to bring a total of 140,000 horsepower to Tacoma—50,000 from Cushman No. 1 and 90,000 from Cushman No. 2. As one report noted, "it is hard for the mind to grasp the significance of 50,000 horsepower of electrical energy. Picture an army of 1,000,000 men engaged in physical labor. Their combined effort would about equal this horsepower."[28]

In 1930, a journalist reported that "work on Cushman No. 2 project is being carried on seven days a week and 24 hours a day, as the power is urgently needed to supply the market at

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[24] Malloy and Ott, *Tacoma Public Utilities Story*, 88.

[25] Office of Historic Preservation, Community Development Department, "Cushman Power Project, Cushman Substation," Survey-Inventory Form, Community Cultural Resource Survey, Reference No. 31650, April 1981, 2, on file at DAHP.

[26] City of Tacoma, Department of Public Utilities, Light Division, *1926–27 Information Book* (n.p.: n.p., 1927), 18, Tacoma Public Utilities History Collection, Accession PS-20091012-02, Box 7116, Tacoma Public Utilities Archival Collection, Washington State Archives, Puget Sound Regional Branch (hereafter WSA-PSRB).

[27] "Report to December 31, 1929," *Report and Information Book of the Light Division, Department of Public Utilities, City of Tacoma, Washington*, 16, Tacoma Public Utilities History Collection, Accession PS-20091012-02, Box 7116, Tacoma Public Utilities Archival Collection, WSA-PSRB.

[28] "Cushman Project Visualized," [ca. 1925], Tacoma Public Utilities History Collection, Accession PS-20091012-02, Box 7116, Tacoma Public Utilities Archival Collection, WSA-PSRB.

Tacoma."[29] The new Cushman No. 2 dam, a 240-foot, constant-radius, high-arch dam, rose to create Lake Kokanee.[30] The Cushman No. 2 powerhouse, which is located on the Skokomish Reservation, overlooking the Olympic Highway, was constructed by J. E. Bonnel and Son of Tacoma. The city's grand design for the Cushman No. 2 powerhouse exudes the sense of pride and progress felt by Tacoma City Light. The building draws upon neoclassical influences in civic architecture to express the significance of the facility to the functioning of the city.

On August 22, 1939, John D. Ross, chief administrator of Bonneville Power (and former head of Seattle City Light), addressed Congress on the status of Bonneville Dam (1934) and the newly proposed Grand Coulee Dam for which he sought federal funding. He said, "the enterprises the Pacific Northwest needs most for industrial development are those requiring large quantities of cheap electrical energy of which the region will soon have abundance." In a feature article, the *Seattle Post-Intelligencer* listed thirteen key regional units that provided power and light. Among them was "Tacoma City Light (public monopoly—at present America's lowest power rates)."[31]

By 1947, the City of Tacoma, Department of Public Utilities, Light Division, had begun construction on the Pearl Street Substation in Tacoma; in 1949, the transmission line was rerouted from the Cushman Substation to the Pearl Substation.[32] Blueprints for the "Pearl Street Switching Station Control House" are dated June 7, 1949, approved by engineer A. W. Francis. Although the transmission line continues on to the Cushman Substation, the historic alignment and terminus of the line have been altered. The Cushman Substation now acts as a storage building, and all original interior equipment has been removed. The switchyard, located on the Cushman Substation property, is still active, although it contains only modern equipment.

Historically, the substation was an integral part of the Cushman Hydroelectric Project, acting as terminus for the transmission line and therefore an essential resource directly related to the production and transmission of hydroelectric power to the citizens of Tacoma. Though the building exhibits excellent integrity of location, design, setting, materials, workmanship, feeling, and association, rerouting of the Potlatch Transmission Line to the Pearl Street Substation in 1949 and the subsequent removal of all power-related equipment from the interior of the Cushman Substation have rendered the building functionally disconnected from the rest of the Cushman system. However, the building is an excellent example of neoclassical-revival architecture, and has seen few alterations (apart from interior removal of equipment). The basic form, massing, and scale of the building, both interior and exterior, are intact.

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[29] "Cushman Power Plant No. 2 for Tacoma," 538.

[30] Soderberg, "Cushman No. 1 Hydroelectric Power Plant," 8-1.

[31] Ross, "Plentiful Electricity Seen as Stimulant."

[32] The Pearl Street Substation is located at 2402 Pearl Street North in Tacoma. The substation comprises one building, an outdoor switchyard, and one historic-era tower identical to those found on North 21st Street. The single-story building with a drive-under basement fronts east on Pearl, with parklike landscaping separating the substation from the suburban mini-mall development located east of Pearl Street. The Pearl Street Substation has seen few exterior alterations since initial construction: the windows appear to be original, as does the stucco cladding. Though all doors appear to be modern, they are in original openings. The building retains good integrity of design, workmanship, feeling, association, setting, and location, and fair integrity of materials.

The Cushman Substation is the urban embodiment of the City of Tacoma's achievement in hydroelectric power production via development of the Cushman Hydroelectric Project. The substation housed the means for efficient and economical distribution of electricity, which enabled the region to grow and expand and, therefore, made the Cushman Substation one of the most important and influential buildings of its time. The monumental architectural style reflected this ideology, creating a visual statement as to the importance of the city's recently completed municipal hydroelectric system. The Cushman Substation is an excellent example of neoclassical revival style architecture, with which the City of Tacoma built the Cushman Hydroelectric Project facilities in the 1920s. The only urban building constructed concurrent with the Cushman Hydroelectric Project, the Cushman Substation is a visual representation of the importance of public energy facilities to regional growth. The monumental architectural style reflected the importance of efficient and economic distribution of energy, creating a visual statement as to the importance of the City's recently completed municipal hydroelectric system.

III. PHYSICAL DESCRIPTION

The Cushman Substation is located at 3713 North 19th Street in Tacoma, Washington. The substation building and outdoor switchyard maintain an entire city block, bordered to the south by North 19th Street, the west by North Adams Street, the north by North 21st Street, and the east by North Washington Street. The building occupies the southwest quadrant of the block, and fronts south on North 19th Street; park like landscaping highlights the main entrance. The switchyard occupies the northwest quadrant of the block. The eastern half is partially graveled, partially paved, and features concrete pad foundations for equipment no longer extant at the site.

The Cushman Substation building is rectangular in plan and three stories tall on basement. The building is constructed of board-formed poured concrete, including the foundation, walls, and exterior cladding. Seven bays wide by four bays deep, the building has a shallow-pitched gable roof with a concrete parapet. The roof also features a shed-roof penthouse in the northwest corner that denotes the location of the interior elevator shaft. Below the parapet, a projecting concrete cornice articulates the top of a full entablature, supported by engaged pilasters. Designed in the Tuscan order, the simplified Doric pilasters that define the second and third floors sit atop a pedestal (the first floor) comprising a raked dado and unadorned plinth.

The main entrance is centrally located on the south façade and is adorned with a monumental distyle temple front. Accessed via concrete stairs that define the stereobate, the pediment, tympanum, and Tuscan columns of the temple-front entryway are unadorned; the fully articulated entablature features the words "Cushman Substation" in the frieze. The tripartite doorway has a single-light wood door accentuated by engaged Tuscan Doric columns, and flanked by twelve-light sidelights of beveled glass with engaged pilasters at the corners. The doorway also features an entablature, with decorative dentils below the frieze. Original metal hardware on the door appears to be intact.

The west side is devoid of entrances; other entryways, found on the north and east elevations, are industrial and/or utilitarian. These include the large metal roll-up door on the east elevation, with an inset pedestrian door; the second-floor entrance on the west elevation, accessed via an

exterior metal stairway; the ground-floor pedestrian door on the east corner of the north elevation; and the metal roll-up door located in the center bay of the north elevation. With the exception of the main entryway door on the south elevation and the large metal roll-up door on the east elevation, all other doors appear to be modern.

The most predominant feature of the Cushman Substation is the metal-sash windows. Found on all stories on each side of the building, the window bays comprise three banks of 24-light windows separated by metal mullions, for a total of 12-light by 6-light window bays. Each bay includes two operable 8-light hoppers, one each in the outside bank. The only exception to this configuration is on the second floor of the east side, where a doorway (described above) has been added to one of the window bays.

Original cast-concrete light poles flank the stairway to the main entrance. The light poles are also located on the corners of the south elevation, as well as symmetrically arranged on the west elevation, for a total of seven poles currently extant. The light poles originally featured glass globes, though these have been replaced with plastic globes or, in some cases, are missing altogether.

The interior of the Cushman Substation maintains the original massing and form as originally constructed; however, all operating equipment has been removed, and the building is used primarily for storage. The south half of the building is one large open room, three stories tall, historically known as the Condenser Room. This main area once housed the machinery (condensers) necessary for the substation, and still features original details such as sconces with glass globes; gantry crane; engaged pilasters on both the exterior and interior walls; and the exposed, board-formed concrete beams and ceiling that support the roof structure. Some modern lighting has been installed on the ceiling beams. One original metal stair, with industrial “pipe-fitting” style handrails, accesses the second floor from the main room; a second stairwell was historically present, but has been removed.

The north half of the building is horizontally divided between the first, second, and third floors. Historically, the first floor served as the Feeder Switch Room, with a small bathroom and locker room in the northeast corner. The second floor was divided between the shop (west), the Condenser Switch Room (center), and the control room (east). The third served as a storeroom, as well as having smaller spaces in the northeast corner for the Battery Room, the “M. G. & Carrier Current Room,” and the Load Dispatchers Office (also the location of the second restroom in the facility). The roof is accessed via a metal stairway adjacent to the elevator shaft in the northwest corner. Again, all original equipment appears to have been removed and the building now stores modern equipment. There is some evidence that original slate panels in the control room are present behind modern equipment; however, all switches and other components are no longer extant.

The basement level is accessed via a concrete stairwell at both the east and west ends of the Condenser Room on the first floor. The basement, historically, held a series of feeders, transmitters, and bus reactors, provided access to the machinery in the Condenser Room, and served as a storage area. Four large oil tanks, two for circuit-breaker oil and two for transmission

oil, are still imbedded in the east wall of the basement. Three underground tunnels, two on the east and one on the north side of the building, provide access to the exterior switchyard.

With the exception of wholesale removal of interior equipment, alterations to the building itself have been fairly minor. For example, a door on the second floor of the east elevation was cut into a window; this change utilized the existing window space and, with the exception of the removal of some window panes, did not require removal of building fabric. Other alterations include the removal of light poles on the exterior of the building; analysis of historic photos indicates that the substation originally had eight light poles on the south side and five on both the east and west sides.

IV. CONSTRUCTION AND MAINTENANCE

Historically, the substation was an integral part of the Cushman Hydroelectric Project, acting as terminus for the transmission line and therefore an essential resource directly related to the production and transmission of hydroelectric power to the citizens of Tacoma. Though the building exhibits excellent integrity, rerouting of the Potlatch Transmission Line to the Pearl Street Substation in 1949 and the subsequent removal of all power-related equipment from the interior of the Cushman Substation have rendered the building functionally disconnected from the rest of the Cushman system. However, the building is an excellent example of Neoclassical-revival architecture, and has seen few alterations (apart from interior removal of equipment). The basic form, massing, and scale of the building, both interior and exterior, are intact.

The Cushman Substation now acts as a storage building, and all interior equipment has been removed; the switchyard, located on the Cushman Substation property, is still active.