HISTORIC AMERICAN ENGINEERING RECORD
HOOVER DAM, SOUTHERN CALIFORNIA EDISON 138-KV SWITCHYARD
HAER NO. NV-27-B

Location: U.S. Highway 93
Vicinity of Boulder City
Clark County
Nevada

USGS Hoover Dam, Nevada-Arizona 7.5 Minute Provisional 1997
UTM Coordinates: 11.0703496.3988247

Date of Construction: 1936

Engineer: Southern Sierras Power Company/California Electric Power Corporation
Builder: Southern Sierras Power Company/California Electric Power Corporation

Present Owner: Western Area Power Administration
Present Occupant: Not Applicable
Present Use: Switchyard

Significance: The Southern California Edison 138-kV Switchyard was the second of six major federal switchyards built at Hoover Dam. The switchyard was built to replace the Southern Sierras Power Company substation that had provided electricity for construction of the dam. The new switchyard would reverse the direction of service, sending Hoover Dam power to San Bernadino, California. The switchyard was an integral part of the Hoover Dam electrical generation and transmission complex.

Report Prepared by: Associated Cultural Resource Experts (ACRE)
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Date: April 2004
Statement of Significance:
The Southern California Edison 138-kV Switchyard was the second of six major federal switchyards built at Hoover Dam. The switchyard was built to replace the Southern Sierras Power Company substation that had provided electricity for construction of the dam. The new switchyard would reverse the direction of service, sending Hoover Dam power to San Bernadino, California. The switchyard was an integral part of the Hoover Dam electrical generation and transmission complex.

Description:
The Southern California Edison (SCE) 138-kV Switchyard is a facility 110' x 95'3" that was built to the north of the City of Los Angeles Switchyard. The SCE 138-kV Switchyard was constructed into a southwest-facing rock slope, resulting in a need for reinforced concrete retaining walls or foundation walls on all four sides. A drainage ditch and culvert are to the west and southwest of the switchyard. The switchyard deck has a relatively small steel bus system supported by 12 steel towers, a single transfer switch, and a single set of disconnect switches, oil circuit breakers, and lightning arresters.

An oil and relay control house is in a lower level of the southwest corner of the switchyard area, so that the roof of the building forms part of the switchyard equipment deck. The reinforced concrete oil house is 43'9" long, 38' wide, and 10'5" high at the southern, down-slope façade. The building has subtle Moderne Style wall and lighting features. The interior included an oil storage room, a transformer vault, a battery room, a relay room, a storeroom, a toilet, and two other small rooms.

History:
Construction of this switchyard was begun by the Southern Sierras Power Company in 1936, but by the time the switchyard was completed, Southern Sierras Power Company had been absorbed into the California Electric Power Corporation, a holding company. The switchyard was known as the CEP Switchyard from 1937 to 1963. California Electric Power Corporation became part of the Southern California Edison Company on January 1, 1964, and thereafter the switchyard was known as the SCE 138-kV Switchyard.

Excavation for the switchyard began in March 1936 and was completed in April 1936. Pouring of concrete footings for towers and bus works began in April 1936, as did pouring of the walls of the oil and relay house. The switchyard was mostly completed by the end of July 1936, except for installation of the electrical equipment. Construction of Transformer Circuit No. 2 between generating Unit A-8 and the switchyard, including a horizontal rim tower and six lattice-steel towers, was also completed in 1936. Installation and testing of switchyard equipment was completed before August 1937, when Unit A-8 came on-line to provide current to the switchyard.

This switchyard provided power to customers in southern Nevada and southern California at 138-kV, which was a well-tried transmission voltage at that time. Evidence has not been found that any electrical equipment in the Southern Sierras/CEP/SCE switchyard was unique or designed
Specifically for this facility. The bus structures were designed by Bureau of Reclamation engineers in Denver and fabricated by the American Bridge Company in Pittsburgh, Pennsylvania.

Very little change has occurred to the switchyard, other than removal of the incoming transformer circuit and outgoing transmission line, which occurred as a result of the completion of Mead Substation in the 1970s. A compressed air and water system was constructed in the 1950s between the Southern Sierras Switchyard and the Nevada State Switchyard to the north.

Sources:

This documentation of features of Hoover Dam and associated structures was accomplished by Associated Cultural Resource Experts (ACRE). ACRE completed documentation of 21 features in October 2002. Documentation on four linear features was extended and an additional 3 features were newly documented in February 2004. Both phases of documentation were conducted as part of the historical/engineering recordation of Hoover Dam—prepared for the Department of Energy, Western Area Power Administration; Bureau of Reclamation; and Federal Highway Administration—that includes a narrative for the Addendum to Hoover Dam and individual documentation of 25 features located at the Hoover Dam facility, photo documentation, and documentation of existing historic photographs and site plans. The recordation conforms to the standards of the Historic American Engineering Record, U.S. Department of the Interior. Other reports in the HAER collection completed for these projects are a narrative for the Addendum to Hoover Dam (NV-27) and 24 short forms for individual structures: Hoover Dam, Los Angeles Switchyard (NV-27-A); Hoover Dam, Southern Sierras/CEP/Southern California Edison 138-kV Switchyard (NV-27-B); Hoover Dam, Metropolitan Water District Switchyard (NV-27-C); Hoover Dam, State of Nevada Switchyard (NV-27-D); Hoover Dam, Southern California Edison 230-kV Switchyard (NV-27-E); Hoover Dam, Arizona-Nevada Switchyard (NV-27-F); Hoover Dam, Static Towers and Lines (NV-27-G); Hoover Dam, Los Angeles Relay Control Building (NV-27-H); Hoover Dam, Switchyard Fire House (NV-27-I); Hoover Dam, Promontory Water Tank (NV-27-J); Hoover Dam, Control Cable Hoist House (NV-27-K); Hoover Dam, Transformer Circuits 1-15 (NV-27-L); Hoover Dam, Los Angeles BPL Lines 1-3 (NV-27-M); Hoover Dam, Southern California Edison North and South Lines (NV-27-N); Hoover Dam, Hoover-Basic Magnesium North and South Lines (NV-27-O); Hoover Dam, Metropolitan Water District Line 1 (NV-27-P); Hoover Dam, United States Construction Railroad (NV-27-Q); Hoover Dam, U.S. Highway 93 Nevada Segment (NV-27-R); Hoover Dam, Lower Portal Access Road (NV-27-S); Hoover Dam, Kingman Switchyard (NV-27-T); Hoover Dam, U.S. Highway 93 Arizona Segment (NV-27-U); Hoover Dam, Explosives Magazines (NV-27-V); Hoover Dam, Nevada Downstream Waste Tailings (NV-27-W); and Hoover Dam, Nevada Spoils Tunnel (NV-27-X); Hoover Dam, Henderson-Mead Transmission Line 2 (NV-27-Y).

Project Information:

This documentation was prepared for three federal agencies: U.S. Department of Transportation, Federal Highway Administration (FHWA), Central Federal Lands Highway Division, Lakewood, CO; U.S. Department of Energy, Western Area Power Administration (Western), Desert Southwest Customer Support Region, Phoenix, AZ; and U.S. Department of Interior, Bureau of Reclamation (Reclamation), Lower Colorado Region, Boulder City, NV.

This documentation records certain transportation and electrical features associated with Hoover Dam before planned removal or alteration of some structures. FHWA plans to construct a bridge over the Black Canyon of the Colorado River about 1,500’ downstream from Hoover Dam. The Hoover Dam Bypass Project would include realignment of U.S. Highway 93 on the Nevada and Arizona sides of Black Canyon. The project would include demolition, relocation, or substantial visual impact to a segment of U.S. Highway 93 on the Nevada approach to Hoover Dam, a segment of a former alignment of U.S. Highway 93 in Arizona, electrical transformer circuits in Arizona and Nevada, two electrical switchyards, a segment of the grade of the U.S. Construction
Railroad, a stone gate structure for a dam construction and operations road, and six historic transmission lines. This documentation also records certain structures not directly affected by FHWA’s Hoover Dam Bypass Project. Electrical transmission facilities at Hoover Dam are administered by Western, but these facilities are within a federal reservation administered by Reclamation. Documentation of electrical structures is intended to partially fulfill responsibilities of Western and Reclamation under Section 110 of the National Historic Preservation Act (As amended). Some electrical structures addressed by Western and Reclamation would be directly affected by FHWA’s Hoover Dam Bypass Project, and all structures addressed by Western and Reclamation are functionally related and geographically near structures addressed by FHWA.

Project Manager and historian for the recordation was Kurt P. Schweigert of Associated Cultural Resource Experts. The photographers were Deborah Dobson-Brown and Douglas M. Edwards of Associated Cultural Resource Experts. This documentation was prepared on the basis of research conducted at Reclamation archives in Denver, CO, and Boulder City, NV; Western archives and files in Denver and Phoenix, AZ; the National Archives and Records Administration in Denver; libraries of the University of Nevada-Las Vegas; and the Western History Collection of the Denver Public Library. This documentation includes information contained in survey reports for the Hoover Dam Bypass Project Environmental Impact Statement, an evaluation of the Western switchyards at Hoover Dam, an evaluation of the Hoover Dam construction railroads, a National Register nomination for Hoover Dam, and other documents.
