

HISTORIC AMERICAN ENGINEERING RECORD

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HAER
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Columbia Basin Project, Grand Coulee
Powerplant Complex
Grand Coulee
Grant County
Washington

HAER No. WA-139-B

Jet Lowe, HAER Photographer, May 1996

- WA-139-B-1 View of Left Powerhouse, looking east. The multi-story building to the right contains the main control room for the powerplant complex.
- WA-139-B-2 View of Left Powerhouse, looking northeast.
- WA-139-B-3 View of Left Powerhouse showing tailrace; directly across the river is Third Powerhouse (see below).
- WA-139-B-4 Interior of Left Powerhouse showing generator room, looking east.
- WA-139-B-5 Interior of Left Powerhouse showing generator Nos. 1-4. This view is from the catwalk at the level of the overhead crane, looking west.
- WA-139-B-6 Interior of Left Powerhouse showing the Whiting (Company's) "Tiger" crane with a capacity of 350 tons, looking west. Note the terrazzo floor below depicting a Francis turbine.
- WA-139-B-7 Interior of Left Powerhouse; detail of the terrazzo floor depicting a Francis turbine, looking east.
- WA-139-B-8 Interior of Left Powerhouse; detail of the terrazzo floor depicting a Francis turbine, looking east.
- WA-139-B-9 Interior of visitor's room at Left Powerhouse, containing terrazzo floor depicting a turbine-generator unit.
- WA-139-B-10 Interior hallway at 1250 Gallery, Block 11, which leads from Left Powerhouse to Pump-Generating Plant, looking southwest.
- WA-139-B-11 Interior hallway, at 1250 Gallery, showing entrance into Pump-Generating Plant from Left Powerhouse, looking southwest.

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- WA-139-B-12 View of Right Powerhouse (to the left) and Third Powerhouse, looking west.
- WA-139-B-13 Interior of Right Powerhouse, generator room, looking east. The unit in the foreground is turbine-generator No. 11.
- WA-139-B-14 Interior of Right Powerhouse, generator room, looking east.
- WA-139-B-15 Interior of Right Powerhouse, looking east, showing turbine-generator unit No. 11, which is undergoing repair. This generator is identical to the other eight units located in the Right Powerhouse: Westinghouse AC generator, 108,000 kva, 13,800 volts, 4,200 amps, 3 phase, 60 cycle, 1220 exciter amps, 250 exciter volts.
- WA-139-B-16 Interior of Right Powerhouse, showing control panel for generator No. 10, looking southeast.
- WA-139-B-17 Interior of Right Powerhouse, showing control panel for generator No. 10, looking southwest.
- WA-139-B-18 Interior of Right Powerhouse, looking northeast, showing shaft from Francis turbine (below) extending to the generator (above). This is unit G-11, a Francis turbine that is identical to the others in the Right Powerhouse: manufactured in 1950 by the Newport News Shipbuilding and Drydock Company, Newport News, Virginia; 165,000 horsepower, 330 ft. head, 120 rpm.
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- WA-139-B-21 View of Third Powerhouse, looking east.
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ADDENDUM TO:
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COMPLEX
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Washington

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Photographs no. HAER WA-139-B-1 through HAER WA-139-B-27 were previously transmitted to the Library of Congress.

The originals of the historic construction drawings seen in HAER WA-139-B-141 through HAER WA-139-B-160 are held at the Grand Coulee Power Office, Grand Coulee Dam, Washington. Those prints are 8x10" enlargements from 4x5" negatives.

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Clayton B. Fraser, photographer, November 2004

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WA-139-B-35	Interior view of Right Powerhouse generator bay floor. Generators are rated at 125 megawatts. View to west.
WA-139-B-36	Interior of Left Powerhouse main generator bay floor. Generator in foreground is rated at 125 megawatts. View to east.
WA-139-B-37	Interior view of Right Powerhouse generator bay floor. View to west.
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WA-139-B-87	Interior view of Right Powerhouse control panel gallery. View to west.
WA-139-B-88	Interior view of Right Powerhouse gallery behind shaft view area. Gallery leads to air lock door, which separates powerhouses and spillway. Piping is for cool water and fire suppression. View to west.
WA-139-B-89	Interior view of Right Powerhouse draft tube gallery. View to west.
WA-139-B-90	Interior view of Right Powerhouse draft tube access door on Generator Unit No. G-15. View to south.

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WA-139-B-95	Transformer deck behind Third Powerhouse. Power comes off the transformers at 525,000 volts. View to south.
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WA-139-B-97	Transformer deck behind Third Powerhouse. Three transformers in center of photo take power off of Westinghouse Generator Unit No. G-20. View to west.
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WA-139-B-99	Step-up transformer for Generator Unit No. G-19. Electricity is booted at 525,000 volts. View to northwest.
WA-139-B-100	Draft tube deck, crane and tailrace balcony for Third Powerhouse. View to north.
WA-139-B-101	Draft tube gantry crane for Third Powerhouse. Note the tailrace observation balcony used in the public tour of the Third Powerhouse. View to north.
WA-139-B-102	Interior view of main generator bay floor of Third Powerhouse (from top of 2000-ton gantry crane). View to south.
WA-139-B-103	275-ton bridge crane inside Third Powerhouse. View to south.
WA-139-B-104	275-ton bridge crane inside Third Powerhouse. View to north.
WA-139-B-105	2000-ton gantry crane inside Third Powerhouse. View to north.
WA-139-B-106	Operator's shack, ladder and one of the four legs on 2000-ton gantry crane inside Third Powerhouse. View to north.
WA-139-B-107	Hydraulic cylinders on 2000-ton gantry crane inside Third Powerhouse. View to east.
WA-139-B-108	Interior of operator's shack on 2000-ton gantry crane inside Third Powerhouse. View to north.
WA-139-B-109	Stairwell and air intake on the main generator bay floor in Third Powerhouse. View to southwest.
WA-139-B-110	Detail of concrete ribbing on interior wall of Third Powerhouse. M = main floor; el. 1012 = elevation 1012 feet above sea level. View to east.

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WA-139-B-113	Interior view of Third Powerhouse, showing station service control panels for electrical power. View to north.
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WA-139-B-121	Interior view of Third Powerhouse, showing hydraulic pumps and oil pressure tanks for General Electric 805mw generator. This is part of the hydraulic servo-motor system that controls flow through the turbine. View to northeast.
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WA-139-B-123	Interior view of Third Powerhouse, showing shaft on 805mw generator. The shaft connects the turbine runner (below) with the rotor (above). This shaft is eleven feet in diameter. View to northeast.
WA-139-B-124	Interior view of Third Powerhouse, showing servo-motors and air induction pipes within shaft view area on 805mw generator. View to south.

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- WA-139-B-125 Interior view of Third Powerhouse, showing two of four air storage tanks on second floor. Air tanks and compressors (next floor down) are used to push water below the turbines when a generator is condensing (also known as spinning reserve). View to north.
- WA-139-B-126 Interior view of second floor (penstock access level) of Third Powerhouse. View to north.
- WA-139-B-127 Interior view of Third Powerhouse, showing door leading into penstock on 600mw Westinghouse Generator Unit No. G-20. Water flow through the penstock is as great as 250,000 gallons per second. View to east.
- WA-139-B-128 Interior view of third floor of Third Powerhouse, showing inside of penstock for General Electric 805mw generator. Penstock is 40 feet in diameter. View to southwest.
- WA-139-B-129 Interior view of third floor of Third Powerhouse, showing turbine runner (left) and wicket gates (right) for General Electric 805mw generator. Unit is undergoing cavitation repairs. View to west.
- WA-139-B-130 Interior view of first floor of Third Powerhouse, draft tube level. View to south.
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- WA-139-B-137 Interior view of Forebay Dam, showing spiral stairway that connects different levels or galleries. Block 119 at 1290 elevation. View to west.
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- WA-139-B-139 Interior view of 1290 Gallery of Forebay Dam. View to south.
- WA-139-B-140 Interior view of Forebay Dam, showing coaster gate hoist. View to north.

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- WA-139-B-141 Photographic copy of construction drawing, Bureau of Reclamation, 14 October 1937. "Grand Coulee Power Plant: Left Power House -- Plan - Floor El. 930.0 to 934.0."
- WA-139-B-142 Photographic copy of construction drawing, Bureau of Reclamation, 14 October 1937. "Grand Coulee Power Plant: Equipment Arrangement at El. 938.0."
- WA-139-B-143 Photographic copy of construction drawing, Bureau of Reclamation, 14 October 1937. "Grand Coulee Power Plant: Left Power House -- Plan - Floor El. 949.0 to 951.0."
- WA-139-B-144 Photographic copy of construction drawing, Bureau of Reclamation, 14 October 1937. "Grand Coulee Power Plant: Equipment Arrangement at El. 951.0."
- WA-139-B-145 Photographic copy of construction drawing, Bureau of Reclamation, 14 October 1937. "Grand Coulee Power Plant: Left Power House -- Plan - Floor El. 968.0."
- WA-139-B-146 Photographic copy of construction drawing, Bureau of Reclamation, 14 October 1937. "Grand Coulee Power Plant: Equipment Arrangement at El. 968.0."
- WA-139-B-147 Photographic copy of construction drawing, Bureau of Reclamation, 14 October 1937. "Grand Coulee Power Plant: Left Power House -- Plan - Floor El. 979.0."
- WA-139-B-148 Photographic copy of construction drawing, Bureau of Reclamation, 14 October 1937. "Grand Coulee Power Plant: Equipment Arrangement at El. 979.0."
- WA-139-B-149 Photographic copy of construction drawing, Bureau of Reclamation, 14 October 1937. "Grand Coulee Power Plant: Equipment Arrangement at El. 991.0."
- WA-139-B-150 Photographic copy of construction drawing, Bureau of Reclamation, 16 August 1939. "Grand Coulee Power Plant: Left Power House -- General Arrangement - Plan at El. 1072.50."
- WA-139-B-151 Photographic copy of construction drawing, Bureau of Reclamation, 6 June 1939. "Grand Coulee Power Plant: Left Power House -- General Arrangement - Typical Section thru Main Unit."
- WA-139-B-152 Photographic copy of construction drawing, Bureau of Reclamation, 1942. "Grand Coulee Power Plant: Structural Steel - Roof Truss T-3 and T-4 Details."
- WA-139-B-153 Photographic copy of construction drawing, Bureau of Reclamation, 24 January 1940. "Grand Coulee Power Plant: Units L1, L2 and L3 -- Turbines and Auxiliaries - Procedure for Erecting and Embedding Turbine Units."

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- WA-139-B-154 Photographic copy of construction drawing, Bureau of Reclamation, 12 August 1941. "Grand Coulee Power Plant: Service Bay LS -- Unloading Platform - El. 1012.50 - Terrazzo Floor - Design No. 1."
- WA-139-B-155 Photographic copy of construction drawing, Bureau of Reclamation, 1 November 1976. "Grand Coulee Dam: Forebay Dam and Third Power Plant -- Elevations and Sections."
- WA-139-B-156 Photographic copy of construction drawing, Bureau of Reclamation, 1 October 1971. "Grand Coulee Third Power Plant: General Arrangement -- Longitudinal Sections thru Galleries."
- WA-139-B-157 Photographic copy of construction drawing, Bureau of Reclamation, 26 May 1969. "Grand Coulee Third Power Plant: Third Power Plant & Forebay Dam -- Perspective."
- WA-139-B-158 Photographic copy of construction drawing, Bureau of Reclamation, 19 September 1969. "Grand Coulee Third Power Plant: Architectural Transverse Section -- Power Plant, Mid Station & Dam."
- WA-139-B-159 Photographic copy of construction drawing, Bureau of Reclamation, 14 August 1969. "Grand Coulee Third Power Plant: Unit Bays 19 and 21 -- General Arrangement - Transverse Sections."
- WA-139-B-160 Photographic copy of construction drawing, Bureau of Reclamation, 19 September 1969. "Grand Coulee Third Power Plant, Architectural: Special Concrete Finishes -- Observation Balcony - Elevation and Section."