

Eureka No. 40, Powerhouse
Berwind-White Coal Mining Company
West side of PA 160, 1.5 miles SW of Elton
Scalp Level Vicinity
Cambria County
Pennsylvania

HAER No. PA-184-C

HAER
PA,
11-SEA,
1-C-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DISCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD

EUREKA NO. 40, POWERHOUSE

HAER
PA
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HAER No. PA-184-C

Location: West side of PA 160, 1.5 miles SW of Elton, Scalp Level Vicinity, Cambria County, Pennsylvania

USGS Quad: Geistown, Pennsylvania (1:24000)
UTM: 17 E.683620 N.4457800

Date of Construction: 1905

Builder: Berwind-White Coal Mining Company

Present Owner: American Steel Service Company

Present Use: Metal Stamping Industry

Significance: The Powerhouse was the first major direct-current generating plant built by Berwind-White. It generated DC power for No. 40 as well as for Eureka Mine Nos. 30, 31, 32, 35, and 37.

Project Information: In February 1987, the Historic American Engineering Record (HAER) and the Historic American Buildings Survey (HABS) began a multi-year historical and architectural documentation project in southwestern Pennsylvania. Carried out in conjunction with America's Industrial Heritage Project (AIHP), HAER undertook a comprehensive inventory of Blair and Cambria counties as the first step in identifying the region's surviving historic engineering works and industrial resources.

The results of this project have been published in Blair County and Cambria County, Pennsylvania: An Inventory of Historic Engineering and Industrial Sites (1990), edited by Gray Fitzsimons and produced by HABS/HAER for the National Park Service.

Compiler: Nancy Shedd and Ken Heineman, Historians
Gray Fitzsimons and Kenneth Rose, Editors

History:

Berwind-White began work on a powerhouse at its Eureka No. 40 mine in 1905 and completed it the following year. The plant generated DC power for No. 40 as well as for Eureka Mine Nos. 30, 31, 32, 35, and 37. The building is divided into two sections each of which contains a gable roof and monitor. Half of the plant housed the boilers, and the other half contained the steam engines and generators. A crusher and a fan setting were attached to the south side of the building.

The crusher supplied broken coal to the boiler house for fuel. Built of brick, the crusher building measured 32' x 18'. Mine cars conveyed run-of-mine coal to the crusher over tracks leading from the tippel. An automatic hopper-fed Heyl & Patterson toothed-roll crusher, driven by a 10 HP Westinghouse motor, broke the delivered coal. A chain-and-bucket elevator raised the fuel to an 18" belt conveyor which carried it into the boiler house.

The boiler room measures 150' x 45' and was designed to accommodate four batteries of two 300-horsepower Stirling water-tube boilers. A double-grated furnace, equipped with a Roney stoker fired each boiler. When the plant began operation in 1906, only three batteries of boilers were installed. The belt conveyor from the crusher carried coal to a steel trough which passed over the top of each furnace. Twelve-inch diameter feed tubes directed coal from the trough to the furnace grates. The boilers drew water from a single Cochran water heater and purifier. Ashes from the boilers fell into pits beneath the boiler-house floor, and were then loaded into mine cars. The ashes were used for track ballast in the mines.

The engine room measures 150' x 55' and was equipped with two 550-volt DC, General Electric dynamos direct connected to Cooper-Corliss cross-condensing engines and a 500-kilowatt, 550-volt, 910-amp, Westinghouse dynamo driven by a 1000-horsepower Cooper-Corliss engine. To operate puncher machines and pumps in the mine, Berwind-White installed two Ingersoll-Sergeant compressors driven by the Cooper-Corliss engines.

The Eureka No. 40 powerhouse was the first major direct-current generating plant built by Berwind-White. The company's other stations, the *Engineering and Mining Journal* observed in 1904, were wooden "frame structures," having a "temporary look". Berwind-White probably modeled the new plant upon another large powerhouse of brick construction it had erected at Eureka No. 38 around 1904. This plant produced AC power, which was typical of most large power stations because direct current could not be economically transmitted more than two miles due to power loss. However, the new plant at No. 40 stood within one-and-a-half miles of the other mines, making it practical to produce direct current. This was an advantage because the company only used DC power for its underground operations and thus saved the expense of converting from alternating current.

By 1916, however, many of the company's mines extended more than three miles underground and it was becoming increasingly impractical to transmit DC power. As a result Berwind-White modified the plant at No. 40, producing three-phase AC power. Just two years later the company began constructing a large central power plant near Windber. Operated by the Windber Electric Company, a subsidiary of Berwind-White, the plant opened in 1920. It supplied AC power to the town and surrounding company mines. The individual power plants at the mines, including the one at Eureka No. 40, were probably closed at this time.

Sometime after 1927 a fan house was built on the south side of the old boiler room. The plant was not producing power at this time and it is not known what function the fan served. In 1929 the company subdivided the plant for use as a supply house and subsequently removed the building's clerestories. Currently the powerhouse is occupied by a small manufacturing concern.

Sources:

Affelder, William L. "The Central Power Plant." *Mines and Minerals*, 28 (March 1908), 363-4.
Lasankis, James. American Steel Service Company. Scalp Level, Pennsylvania. Interview, 14 July 1987.