

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
REGISTRATION FORM

1. Name of Property

historic name: Warrior Ridge Dam and Hydroelectric Plant

other name/site number: N/A

2. Location

street & number: 2 mi. south of Petersburg, along Conrail main line

not for publication: N/A

city/town: Porter and Logan Townships

vicinity: N/A

state: PA county: Huntingdon code: 061

zip code: 16669

3. Classification

Ownership of Property: Private

Category of Property: District

Number of Resources within Property:

Contributing	Noncontributing	
5	_____	buildings
_____	_____	sites
3	_____	structures
_____	_____	objects
8	0	Total

Number of contributing resources previously listed in the National Register: 0

Name of related multiple property listing: Industrial Resources of
Huntingdon County

7. Description

Architectural Classification:

Other

Other Description: hydroelectric dam, company housing

Materials: foundation concrete roof N/A
walls concrete other
wood

Describe present and historic physical appearance. X See continuation sheet.

8. Statement of Significance

Certifying official has considered the significance of this property in relation to other properties: locally.

Applicable National Register Criteria: A C

Criteria Considerations (Exceptions) :

Areas of Significance: 160 Industry
110 Engineering

Period(s) of Significance: 1905-1939

Significant Dates : 1905 1907

Years of Alterations: 1985

Significant Person(s): N/A

Cultural Affiliation: N/A

Architect/Builder: E Ambursen Hydraulic Construction Co.
Cushman, William H.

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above. X See continuation sheet.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section number 7 Warrior Ridge Dam and Hydro Plant Page #2

DESCRIPTION OF APPEARANCE:

This complex on the Frankstown Branch of the Juniata River, between Petersburg and Huntingdon, includes the Warrior Ridge Dam and partially demolished power generating plant, and a community to the northeast of the plant consisting of four houses, and a former church. The setting for this operation is the gap between two ridges of the Allegheny Mountains.

The facility consists of a main dam, power plant and auxiliary dam. The main dam was constructed between 1905-07 and is located south of the power plant. It is a 400-foot long, 27-foot high, hollow dam of reinforced concrete with one-foot high plank flash boards which extends between the power plant on the north side of the river and the steep slope of Warrior Ridge on the south. The auxiliary dam was constructed in 1907 and is located north of the power plant. It is a 110-foot, 27 foot high dam of the same design and materials as the main dam and extends north from the power plant.

The power plant was also constructed between 1906-07. The powerplant was constructed of reinforced concrete and measured 30 x 205 foot with a steam plant and two wings. The steam plant measured 30 x 78 feet with a wing on both the east and west. The east wing measured 78 x 45 feet and housed the boilers, the west wing measured 78 x 26 feet and covered the transformers and the high tension equipment. Both the wings and the equipment have been removed. The plant contained both hydraulic and steam facilities, a peculiarity of hydroelectric plants found in Pennsylvania. The Agnes Flood of 1972 destroyed its turbines and other equipment.

A major portion of the power plant was demolished in 1978, but the original arrangement of buildings and operations is apparent from what remains. The steam plant once stood on the northeast corner of the remaining powerplant, the concrete foundation is still visible, it measured 30 x 78 feet. The western wall of the power plant with seven arched chambers in its base remains: five of the chambers house turbines; two contain exciters. Portions of the walls and the concrete foundations of the steam plant remain. The railroad was carried on concrete trestles to supply coal to the steam plant. The trestles are

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section number 7

Warrior Ridge Dam and Hydro Plant Page #3

now planked for vehicle access. The substation on the northeast end of the dam is in use and within the district.

An operators' village consisting of four houses was constructed by the company for their employees in 1907. Three frame bungalows, measuring 25 x 30 feet, have first stories of German siding and second stories of wood shingles, with asphalt shingle roofs and reinforced concrete foundations. One two-story, four-bay double house has German siding, an asphalt roof, and a concrete foundation. The houses have been privately owned since 1952. The bungalows are no longer identical in every detail, but their original character is still apparent. All are very well maintained.

The company also constructed a church in the 1910s. This 15 x 18-foot, one-story frame building, with a concrete foundation and floor and an asphalt roof, is presently used to treat water for the company houses.

The repairs to the plant by the American Hydro Power Company since 1985 included work to the intake doors and the turbine rooms. Five new generators were added and a new transformer has been installed.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section number 8

Warrior Ridge Dam and Hydro Plant Page #2

SIGNIFICANCE:

This resource is being nominated under Criteria A for its association with hydraulically powered resources and C as an important engineering structure in Huntingdon County. It is significant as a prototype of dam design and as a fine example of a intact complex of industry (company) and associated community designed by a company for the purpose of operating and maintaining an industrial facility important in Huntingdon County.

This dam and power plant located in a gap of Warrior Ridge Mountain was constructed in 1905-07 for the Juniata Hydro-Electric Company of Philadelphia, during a period of intense development of electric power facilities in the country. William H. Cushman, chief engineer for Juniata Hydro-Electric, designed the power house and hydraulic installation, and A.G. Wood the auxiliary coal-fired steam plant. The General Electric Company designed the electrical installation; the Ambursen Hydraulic Construction Company was responsible for design and construction of the dam. As one of the earliest examples of a covered version of a buttressed hollow-core dam, patented by Ambursen in 1904, the facility at Warrior Ridge was the focus of widespread attention in the engineering press. The plant, which had a total capacity of 8000 horsepower, contracted to distribute power to Huntingdon and its surrounding communities, and to Altoona and Tyrone as well. Local newspapers reported the Huntingdon Gas and Electric Company's switch to AC power in order to utilize electricity from the new dam, and a rash of electric street car lines, most of which expired on the drawing board, were proposed in response to this new source of power.

Ambursens' design relied on the strength of the structure, in this case reinforced concrete, rather than the mass of the structure to hold the water. The downstream shell protected the structure from erosion as well as offering a convenient passage for inspection. This design offered a cheaper and more efficient way to construct a dam in a remote area by reducing the quantity of material (concrete) that needed to be imported.

The tiny community of Warrior Ridge was created so that power plant employees could live near their work in this rather inaccessible location. The 1910 census enumerated a

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section number 8 Warrior Ridge Dam and Hydro Plant Page #3

superintendent, an operator, and two "stationary firemen" in residence, with two powerhouse laborers boarding a short distance away. A number of railroaders occupied a small settlement on the other side of the tracks, and eventually a railroad flag stop was established at Warrior Ridge and a small passenger station built, outside the district to the north. Free electricity was provided to the power company houses, and spring water from a system developed by the company. The small frame building now used to treat water for the company houses was built about 1910-15 as a community church.

The entire complex was acquired in 1911 by the Pennsylvania Hydro Electric Company, when Juniata Hydro was unable to satisfy its mortgages. In 1927, the power plant and dwellings were purchased by the Pennsylvania Electric Company (Penelec), which operated both the hydro and steam generating facilities until 1952. At that time, the steam plant was closed and the company houses sold to individual owners, while Penelec retained only the hydroelectric facility.

Although electricity was produced on a small scale at isolated and scattered locations throughout the county, this operation represents the first and only large scale production in the county at this time. This permitted large scale change in industrial production to the areas served by the power company.

9. Major Bibliographical References

See continuation sheet.

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67) has been requested.
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey # _____
- recorded by Historic American Engineering Record # PA 061.026

Primary Location of Additional Data:

- State historic preservation office
- Other state agency
- Federal agency
- Local government
- University
- Other -- Specify Repository: Huntingdon Co. Historical Society

10. Geographical Data

Acreage of Property: 8 acres

UTM References: Zone Easting Northing Zone Easting Northing

A	17	751095	4491818	B	17	751375	4491670
C	17	751360	4491605	D	17	751035	4491530

___ See continuation sheet.

Verbal Boundary Description: See continuation sheet.

Boundary Justification: See continuation sheet.

11. Form Prepared By

Name/Title: Deborah L. Suciu - Historic Preservation Specialist

Organization: PHMC - BHP

Date: September 1989

Street & Number: Box 1026 State Museum

Telephone: (717) 783-5796

City or Town: Harrisburg

State: PA ZIP: 17108-1026

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section number 9 Warrior Ridge Dam and Hydro Plant Page #2

SOURCES:

"Description of the Wonderful Hydro-Electric Plant, Warrior Ridge," Semi-Weekly News (Huntingdon, Pa., February 14, 1907), p. 1. [Reprint of article from The Engineering Record (see below)]

Hay, Duncan E. interview summer 1989.

Huntingdon County Deeds and Plans. Recorder's Office, Huntingdon County Courthouse.

Huntingdon County, Pennsylvania: An Inventory of Historic Engineering and Industrial Sites, Historic American Building Survey/Historic American Engineering Record, National Park Service(unpublished, 1988).

"Hydro-Electric Developments at Huntingdon, Pa." Electrical World (Dec. 22, 1906), pp. 1191-94.

"Juniata Water & Water-Power Company," Electrical World (Jan. 20, 1910), pp. 157-59.

McMullin, Polly. "'White Elephant' Power Station To Go Back on Line" (The Daily News, Huntingdon, Pa., March 22, 1985), pp. 1, 7.

Petersburg and Shavers Creek Valley (Huntingdon: Petersburg Bicentennial Committee, 1976), pp. 30, 32. [Photos of original plant and RR station]

Ross, George. Resident of a company house and son of construction engineer when plant was built. Interview, 23 August 1988.

Schuyler, James Dix. Reservoirs for Irrigation, Water-Power and Domestic Water-Supply (New York: John Wiley & Sons, 1909), pp. 465-78.

Shedd, Nancy S. HAER consultant 1988; President Huntingdon County Historical Society: interviews 1988-89

The Monitor (Huntingdon, Pa., February 22, 1907), p. 1.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section number 9 Warrior Ridge Dam and Hydro Plant Page #3

"The Warrior Ridge Hydro-Electric Plant at Huntingdon, Pa." The Engineering Record 54 (22 December 1906): 678-81.

[Photographs of the dam and power plant construction are in the collection of the Smithsonian Institution.]

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section number 10

Warrior Ridge Dam and Hydro Plant Page #2

VERBAL BOUNDARY DESCRIPTION:

The boundary begins at a point approximately 300 feet southwest of the intersection of the Penn Central Right-of-Way with the southeastern edge of township road T492. The boundary follows the southern and southwestern edge of the road, and extending in the same line of the road beyond the road terminus, northwest for about 800 feet to a point where the boundary turns south and slightly west for 1000 feet, crossing the Juniata River to a point 75 feet southwest of the southwest corner of the dam. From that point the boundary turns east for 200 feet then returns north and slightly east for 400 feet to a small island at the southeast corner of the south end of the power plant, where the boundary heads east for 50 feet then northeast for 100 feet to a point on the northeast river bank just east of the southwest corner of the east end of the power plant. The boundary turns southwest and continues along the river bank for about 700 feet. At that point the boundary turns north for 200 feet, then northwest for 150 feet ending at the point of origin.

BOUNDARY JUSTIFICATION:

The boundary includes all the visually identified standing buildings and structures and the above ground remains of the demolished portion of the powerplant. Four company houses, a church now used for water treatment, the northern and southern sections of the dam and the remains of the powerhouse lie within the district. The bank of the Juniata River is used as a boundary where possible as is the edge of the unpaved township road.



Juniata River





Township Road 492

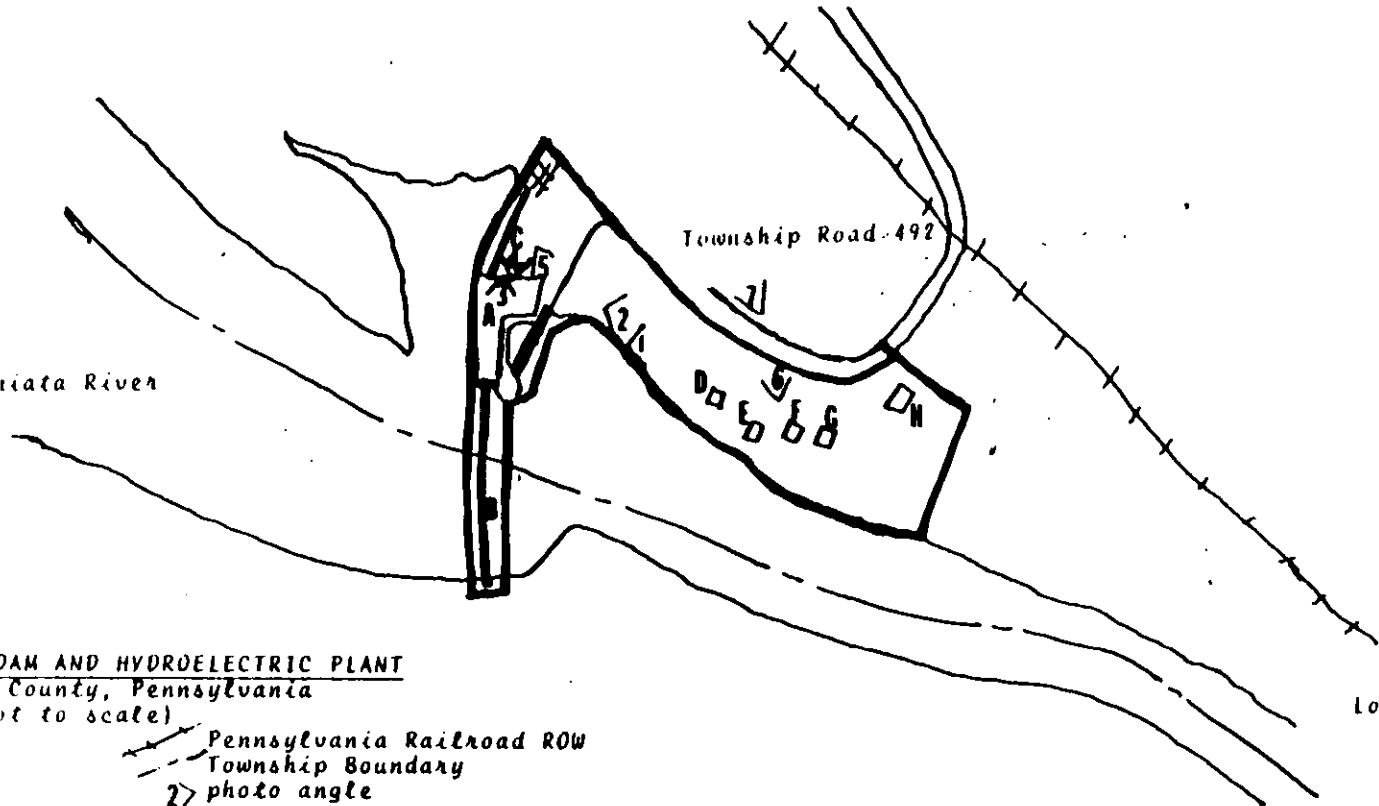
Logan Township

Porter Township

WARRIOR RIDGE DAM AND HYDROELECTRIC PLANT
Huntingdon County, Pennsylvania
(not to scale)

- A power plant
- B main dam
- C auxiliary dam
- D, E, F, G company houses
- H church/water treatment

-  Pennsylvania Railroad ROW
-  Township Boundary
-  photo angle
-  substation



United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Warrior Ridge Dam and Hydroelectric Plant

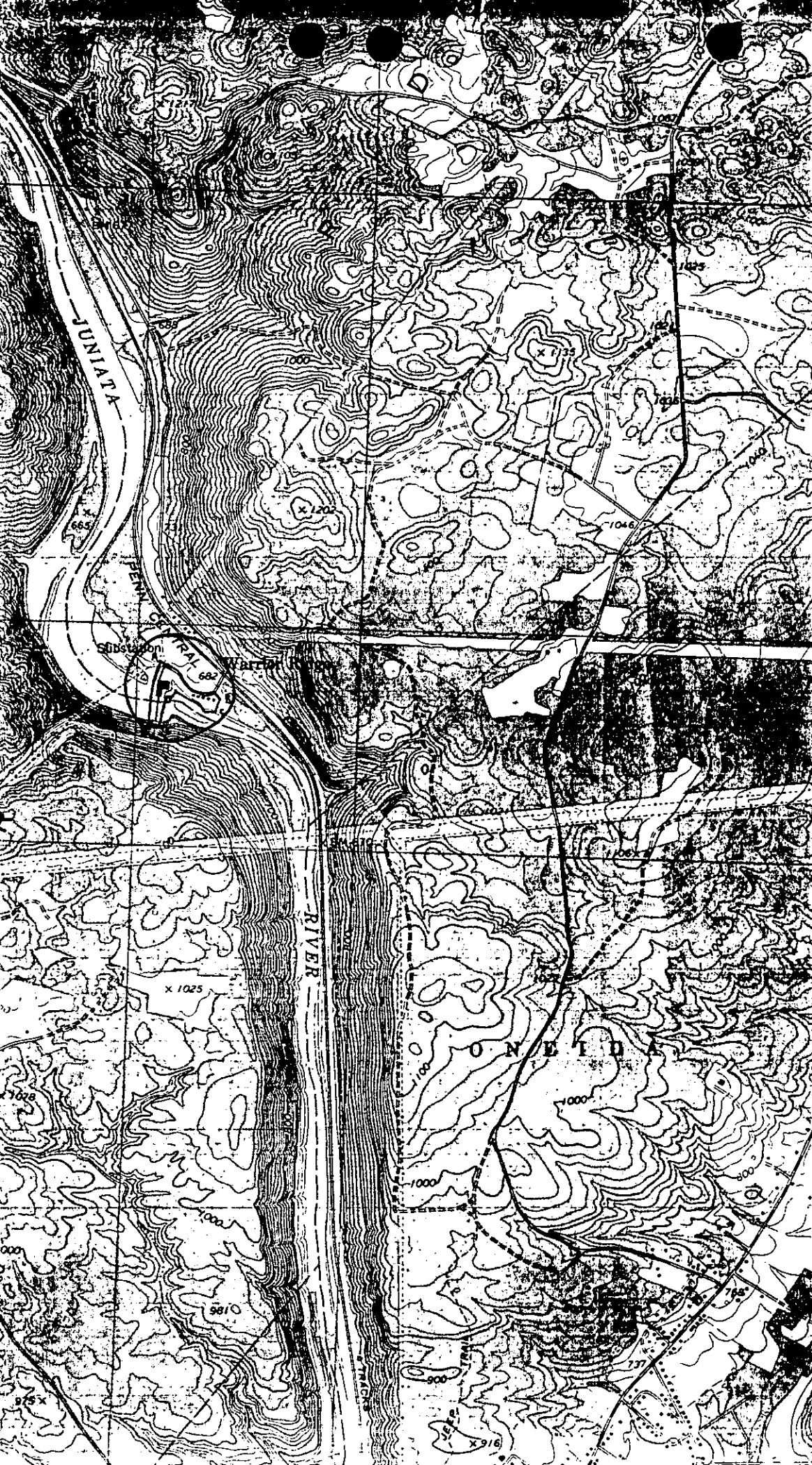
Section number 11 Page 1

This nomination contains material taken directly from the unpublished report prepared in 1988 for the Historical American Engineering Record (see Bibliographical References).

The author of that report, Nancy Shedd, is a major contributor to the text of this nomination, although not the preparer.

PRR BRIDGE OVER SHAVERS CREEK
HUNTINGDON CO.
ZONE 17 - ALEXANDRIA QUAD
749880 4494665

(DONATION)
3465' III SW



4494

4493

32°30'

WARRIOR RIDGE HYDROELECTRIC
HUNTINGDON CO.
ALEXANDRIA QUAD
ZONE 17

E 751095	N 4491810	A
751375	4491670	B
751360	4491685	C
751035	4491530	D

4491

4490

4489

3.5 MI. TO PA. 26