

October 28, 1987

Docket Nos. 50-387/388

Mr. Robert D. Bush  
Executive Director  
Advisory Council on  
Historic Preservation  
The Old Post Office Building  
110 Pennsylvania Ave, N.W.  
Room No. 809  
Washington, DC 20004

Dear Mr. Bush:

SUBJECT: DETERMINATION OF EFFECT OF OPERATION AND MAINTENANCE ACTIVITIES ON  
ARCHEOLOGICAL SITES (TAC NO. 65022)  
SUSQUEHANNA STEAM ELECTRIC STATION

By a letter dated August 9, 1985, the NRC staff requested the Pennsylvania Power and Light Company (the PP&L) to submit information, pursuant to 36 CFR 800, regarding the effects of the Susquehanna Steam Electric Station (SSES) operation on the archeological sites found within the boundary of the SSES plant site. The requested information was needed to evaluate the effects of the SSES operations on the archeological sites SES-3, SES-6, SES-8, and SES-11 as required by the provisions of 36 CFR 800.

Based on our evaluation of the information provided by the PP&L we have determined that, in accordance with the provision of 36 CFR 800, a "finding of no adverse effect" is appropriate for the operation and maintenance of the sites SES-3, SES-6, SES-8, and SES-11. Our determination is based on the information provided by the PP&L in its March 20, 1987 submittal, which included: (1) an appropriate description of the archeological understanding and maps; (2) a description of the archeological sites; (3) efforts used to identify the archeological sites; (4) a statement of how and why the criteria of adverse effects were found inappropriate; and (5) views of the State Historic Preservation Office.

We have enclosed the above information supporting our conclusions for your review.

Sincerely,

/s/

Walter R. Butler, Director  
Project Directorate I-2  
Division of Reactor Projects I/II

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PDR ADOCK 05000387  
P PDR

Enclosure: As stated

cc: Licensee  
Service List

DISTRIBUTION  
Docket File  
NRC PDR/LPDR  
PDI-2 Reading  
WButler

MO'Brien  
MThadani/DFischer  
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MThadani  
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WButler  
10/28/87

WB



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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

October 28, 1987

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Advisory Council on  
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Based on our evaluation of the information provided by the PP&L we have determined that, in accordance with the provision of 36 CFR 800, a "finding of no adverse effect" is appropriate for the operation and maintenance of the sites SES-3, SES-6, SES-8, and SES-11. Our determination is based on the information provided by the PP&L in its March 20, 1987 submittal, which included: (1) an appropriate description of the archeological understanding and maps; (2) a description of the archeological sites; (3) efforts used to identify the archeological sites; (4) a statement of how and why the criteria of adverse effects were found inappropriate; and (5) views of the State Historic Preservation Office.

We have enclosed the above information supporting our conclusions for your review.

Sincerely,

A handwritten signature in cursive script that reads "Walter R. Butler".

Walter R. Butler, Director  
Project Directorate I-2  
Division of Reactor Projects I/II

Enclosure: As stated

cc: Licensee  
Service List

Mr. Harold W. Keiser  
Pennsylvania Power & Light Company

Susquehanna Steam Electric Station  
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U.S. Nuclear Regulatory Commission  
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Services Project Manager  
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Harrisburg, Pennsylvania 17120

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Harrisburg, Pennsylvania 17108-1266

ARCHEOLOGICAL INVESTIGATIONS AT THE SUSQUEHANNA STEAM ELECTRIC STATION:  
THE SUSQUEHANNA SES FLOODPLAIN - STATEMENT OF EFFECT

I. INTRODUCTION

The cultural resource remains of four Indian archeological sites are located on the property which contains The Pennsylvania Power and Light Company's Susquehanna Steam Electric Station Units 1 and 2. The four archeological sites were determined eligible for inclusion in the National Register of Historic Places on February 10, 1983. The U.S. Nuclear Regulatory Commission as lead licensing agency for this facility, as part of the Operating License, Appendix B, Environmental Protection Plan, required an effect determination in consultation with the State Historic Preservation Office. A "no adverse effect" determination for the four sites has been made. This determination and the various informational elements utilized in developing this determination are presented in the following sections.

II. DESCRIPTION OF ARCHEOLOGICAL SITES AND THEIR SIGNIFICANCE

A. Site SES - 3 (36LU15)

Physical Appearance

Site SES-3 is located on the Susquehanna SES floodplain adjacent to the Susquehanna River at an approximate elevation of 158.5 meters (520 feet) above mean sea level (AMSL). Only isolated portions of the original tract remain undisturbed. This area had been previously stripped of two to three feet of topsoil used for fill during plant construction. It had also been farmed prior to PP&L purchasing the property.

Gravel farm roads are located adjacent to this site. These roads have some usage by PP&L or consultant staffs. There is minimal public travel on these roads since it is separate from the Riverland Recreational Area. See Figure V.a.1, Ref 1.

This site is also listed as 36LU15 by the Commonwealth of Pennsylvania Historical and Museums Commission Bureau for Historic Preservation (BHP).

Significance of Resource

Previous work at this location identified two Late Archaic sites that were quite extensive indicating that Site SES-3 may have been a site of major prehistoric occupation. Only isolated portions of the original tract remain undisturbed. The site was considered to be only potentially significant since primary archeological evidence has been largely destroyed or displaced. A testing program revealed that artifact concentrations do not extend below the plow zone so that preservation of major features is improbable (Ref. 1).

B. Site SES-6 (36LU16)

**Physical Appearance**

Site SES-6 is located on the floodplain in an excavated drainage ditch which approximates a former naturally occurring drainage until it cuts the levee. The levee and the riverbank to the east are wooded and brushcovered. The top of the levee is at an elevation of approximately 154.8 m (508 feet) AMSL and is 1.5 m (4.9 feet) above the lowest area immediately west of the site area. The site is approximately 50 m (164 feet) west of the river at an elevation of approximately 4.6 m (15 feet) above the river. See Figure V.a.2, Ref 1.

**Significance of Resource**

During the initial survey, a small collection of surface artifacts was made, including small sherds and flakes from both the north and south side banks of the drain. In addition to this surface examination, several shovel scraping tests were placed on each bank revealing that the north bank, the higher of the two, contained buried artifacts. On the south bank artifacts and pieces of charcoal were present much closer to the surface than on the north bank. Because of the presence of a drainage ditch, it provided an opportunity to expose trench profiles. A test excavation unit was also placed on each bank. Test Unit A was placed on the south bank to expose a two meter wide profile in an east-west direction. Test Unit B was placed on the opposite bank with the two meter axis oriented in a north-south direction. This procedure, along with the stepping of the trench with increasing depth, permitted the excavation to reach greater depths with a reduced volume of soil excavated (Ref. 1).

Excavation of this site revealed diagnostic artifacts as well as several in situ archeological features occurring at a depth below the plow zone. This is probably a Middle Woodland site that provided evidence of occupation.

The site was discovered as a result of the profiles exposed by the drainage ditch that was cut through it. The erosion that was occurring along the cut was destroying the archeological evidence.

To mitigate the damage from the drainage ditch, PP&L has seeded with protective plantings to prevent further erosion.

C. Site SES-8 (36LU49)

**Physical Appearance**

Site SES-8 is located on the Susquehanna SES floodplain at an elevation of approximately 170 m (505 feet) AMSL. The site is

approximately 3 m (9.8 feet) west of the river. The diagnostic scatter was discovered at the edge of the field within 5 m (16 feet) of the treeline which delineates the levee and bank of the river.

The area surrounding this discovery point was intensively inspected for additional artifacts and a slightly higher concentration of material was observed approximately 20 m (65.6 feet) west of the wooded levee. At this point, there is a slight north-south trending linear rise which parallels the existing levee. See Figure V.a.3, Ref 1. Because there was a relatively extensive scatter of artifacts on the surface, a controlled surface collection was initiated. Results and orientation of these tests are summarized in Table V.a.7, (Ref.1).

#### Significance of Resource

Deep testing at this site disclosed the presence of cultural materials of the Transitional period at a depth of approximately 1.5m. This is a potentially critical site, as it may document a pivotal prehistoric period which is not very well understood by archeologists. Additionally, the deeply buried setting of the site suggests that materials may be well preserved and the site may be defined in terms of the alluvial history of the floodplain.

#### D. Site SES-11 (36LU51)

##### Physical Appearance

This site was discovered during the walkover survey of a cornfield on the right descending bank of the Susquehanna River. A light scatter of ceramic and lithic artifacts was observed both along the eastern edge of the cornfield and in an unplanted area between the corn and the treeline which corresponds to the natural levee bordering the river. The field in which these artifacts were observed is a nearly level area approximately 5 m (16 feet) above the river with an elevation of between 154.5 to 156 m (505 and 510 feet) AMSL. The surface area was intensively surveyed and the boundaries of the scatter were determined to be approximately 35 m east-west and 50 m north-south. The closest edge of the site is 20 m (66 feet) west of the river edge.

##### Significance of Resource

During this investigation a small surface collection of artifacts was made. Subsequent to the grab collection a controlled surface collection was taken. Six collection units were placed within the site area and the locations of these units and contents of the collections are summarized in Table V.a.12, Ref 1. The four artifactually sterile units suggested this site was a very tightly clustered center (approximately

15 x 15 m) with an associated cultural scatter produced by agricultural disturbance.

The total number of artifacts recovered was rather small, but materials from the test excavation reveal that in situ cultural materials do remain at the site. These appear to be limited to a relatively small area and do not appear to be associated with midden deposits. The presence of plain surface quartz tempered sherds, and the Late Woodland Madison point would argue for assignment of the site to at least a Late Woodland cultural affiliation (Ref. 1).

### III. DETERMINATION OF EFFECT

On March 27, 1981, PP&L submitted a report to NRC, entitled, "Archeological Investigations at the Susquehanna SES: The Susquehanna SES Floodplain," prepared by Commonwealth Associates, Inc. for PP&L (Ref. 1). The report identified three (SES-6, SES-8 and SES-11), as significant and one site (SES-3) as potentially significant with the sites being possibly eligible for the National Register of Historic Places. The NRC in turn submitted nomination forms to the keeper of the National Register of Historic Places.

On February 19, 1983, the Keeper determined that all four sites are eligible for inclusion in the National Register of Historic Places. PP&L has followed steps presented in 36CFR800.3 and 36CFR800.4 in consultation with the State Historic Preservation Officer to ascertain if the operation or maintenance of the Susquehanna SES will have either: 1) no effect; 2) no adverse effect; or 3) an adverse effect. These criteria have been applied to the site specific conditions to assess the effects of this undertaking on National Register eligible properties. A no adverse effect determination was made for all four sites by the Commonwealth of Pennsylvania Bureau for Historic Preservation on April 20, 1983, and reconfirmed on December 19, 1985.

#### A. Application of the Criteria of Adverse Effect

As a part of the determination of effect process, it is necessary to apply the following criteria of adverse effect as defined in 36 CFR 800.3(b) on these sites assuming the implementation of the undertaking. The following discussion presents each of these criteria and assesses the applicability of each criteria to this case.

##### Criterion (1) Destruction or alteration of all or part of a property:

Construction of the plant has been completed. The operation and maintenance of the Susquehanna SES will not cause the destruction or alteration of the archeological sites since no activities associated with maintenance or operation are conducted in the vicinity of the archeological sites. If additional construction at the plant becomes necessary,

licensing documents related to plant operation require evaluation of the construction activity to determine if any environmental (archeological) question exists. If the evaluation indicates an unreviewed question exists, approval by the NRC is required prior to performing the construction activity in question.

Criterion (2) Isolation from or alteration of the property's surrounding environment:

The response to Criterion 1 applies.

Criterion (3) Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting:

The archeological sites are located on PP&L property that is approximately 3/4 to one mile from the Susquehanna SES plant site. Therefore, the introduction of visual, audible or atmospheric elements from plant maintenance and operation are negligible. The sites themselves are located within the flood plain of the Susquehanna River. The floodplain has been leased for agricultural use, developed for recreational use or remains undisturbed. Since the sites are archeological and not architectural in nature and have no above ground manifestations, the noted land use activities do not impact the contents of the sites or alter their settings.

Criterion (4) Neglect of a property resulting in its deterioration or destruction:

PP&L does not actively inspect these sites. They are, however, located on PP&L property which is in proximity to routine PP&L activities. It is therefore highly unlikely that these sites would deteriorate due to neglect. Since there are no above ground manifestations, the sites are naturally protected from deterioration or destruction.

Criterion (5) Transfer or sale of a property without adequate conditions or restrictions regarding preservation, maintenance, or use:

The PP&L property which contains the archeological sites makes up a portion of the Susquehanna SSES site boundary. This site boundary is defined in licensing documents related to the operation of the plant. Prior to any sale or transfer of site boundary property these licensing documents would have to be revised. The revision process would adequately address any mitigating conditions (archeological sites) associated with the property to be sold or transferred.

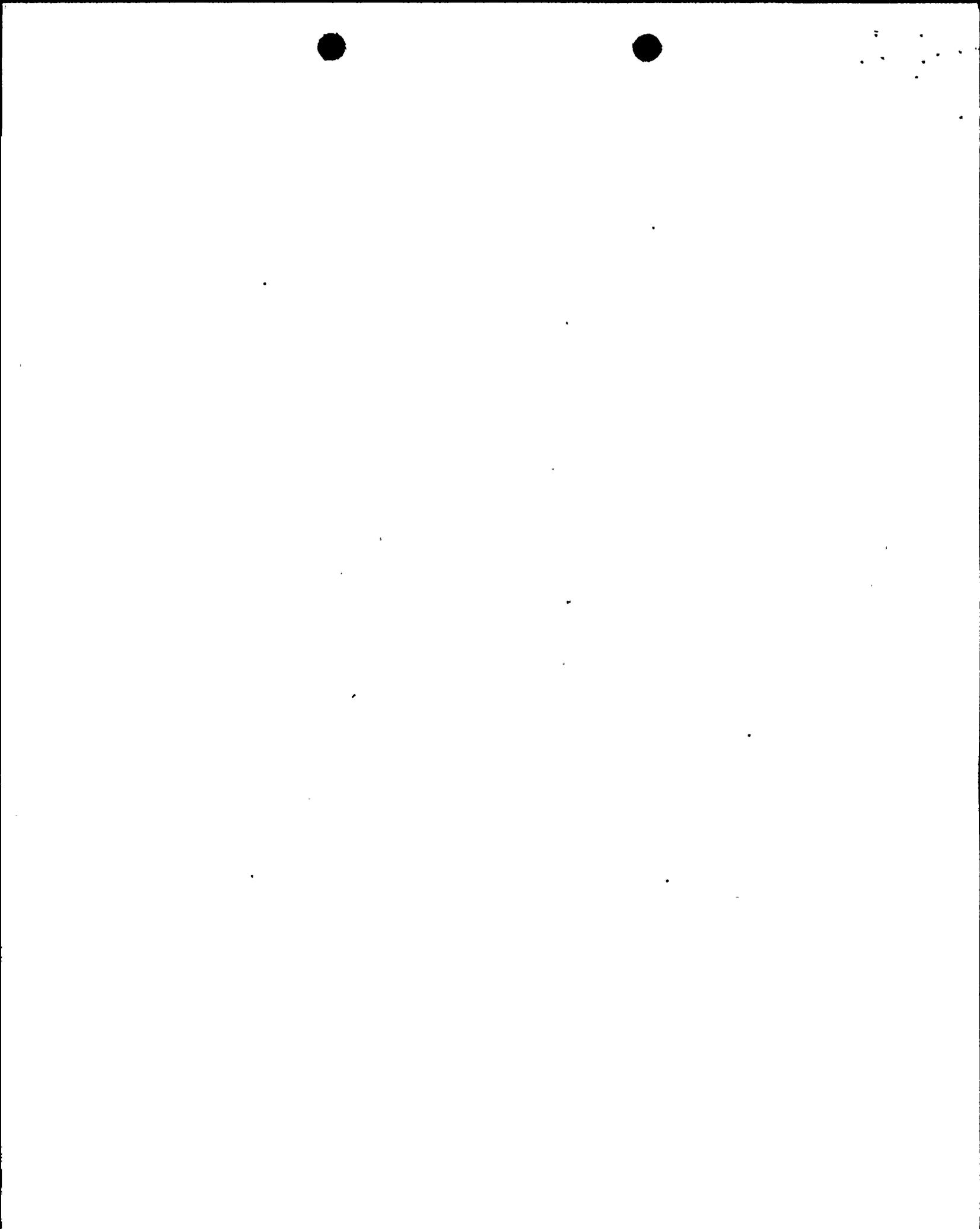
B. Summary of Determination of Effect Analysis

The Licensee has reviewed the criteria for effect listed in 36CFR800.3,(b) and 36CFR800.4,(c) and in consultation with the SHPO concluded that there is no adverse effect from operation of the Susquehanna SES Units 1 and 2 to these sites.

IV. REFERENCE

1. Archeological investigations at the Susquehanna SES: The Susquehanna SES Floodplain, Commonwealth Associates, Inc., March 27, 1981.

rdkmecl29i



August 29, 1985

Dr. Larry E. Tise  
State Historical Preservation Office  
William Penn Memorial Museum and  
Archives Building  
Box 1026  
Harrisburg, PA 17108-1026

SUSQUEHANNA STEAM ELECTRIC STATION  
DETERMINATION OF EFFECT OF OPERATION AND  
MAINTENANCE ACTIVITIES ON ARCHEOLOGICAL  
SITES DESIGNATED SES-3, SES-6, SES-8, AND SES-11  
CCN 741326 FILE 991-2  
PLE-7531

Dear Dr. Tise:

The Pennsylvania Power and Light Company (PP&L) is resubmitting archeological information for the State Historic Preservation Office for review and concurrence on the determination of effect designation as listed in 36CFR800.3, 800.4, 800.5, and 800.13 concerning four archeological sites located on the Susquehanna SES floodplain, Salem Township, Luzerne County. These four sites SES-3, SES-6, SES-8, and SES-11 were determined by the U.S. Department of the Interior, Heritage Conservation and Recreation Service, to be eligible for inclusion in the National Register of Historic Places according to a U.S. Nuclear Regulatory Commission (NRC) letter received by PP&L March 18, 1983. Now, after approximately two years of operation and maintenance activities at the Susquehanna SES, PP&L would like to revise its original determination of "no adverse effect," to "no effect" with State Historic Preservation Office concurrence. Letter PLE-3098, April 19, 1983 discusses PP&L mitigation actions for these four sites with the preliminary evaluation of "no adverse effect." Your April 20, 1983 letter to the NRC concurred with this initial PP&L evaluation based on 1983 preliminary information available in 1983.

The reasons for the revised determination of "no effect" are based on 36CFR800.3(a), Criteria of Effect and they are as follows:

- o "No station operation or maintenance activity has changed the integrity of location, design, setting, materials, etc., that contributes to its significance in accordance with National Register criteria."
- o "No station operation or maintenance activity has impacted on the archeological sites causing either direct or indirect effects."

Attached for your review are archeological recommendations and site maps prepared by Commonwealth Associates for PP&L. Reports with the Commonwealth

August 29, 1985

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CCN 741326

PLE-7531  
FILE 991-2

archeological investigations were previously provided to your office. The reports are listed as follows:

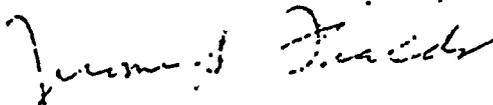
- o Archeological Investigations at the Susquehanna SES: The Susquehanna SES Floodplain, Commonwealth Associates, Inc., March 27, 1981.
- o Management Summary: Archeological Investigations at the Susquehanna Steam Electric Station: The Susquehanna SES, Commonwealth Associates, Inc., March 26, 1981.

In addition, PP&L has commented on each of the archeological recommendations.

Based on this updated information, PP&L requests that you review this documentation on the four archeological sites located on the Susquehanna SES Floodplain to determine if they meet the criteria of "no effect" as listed in 36CFR800.3(a). We request a response by September 30, 1985.

If you have any questions or concerns, please call me at (215) 770-7889.

Respectfully yours,



Jerome S. Fields  
Senior Environmental Scientist-Nuclear

JSF/dml

jsflth0034081

Attachments

cc:	Walter R. Butler	NRC
bcc:	W. E. Barberich	A2-3, w/o
	N. W. Curtis	A6-1, w/o
	R. L. Doty	A1-2, w/a
	<del>_____</del>	<del>_____</del>
	R. H. Harris	A2-3, w/a
	K. E. Shank	A1-2, w/a
	SRMS Corresp. File	A6-2, w/a
	SRMS Letter File	A6-2, w/o

COMMONWEALTH ASSOCIATES  
ARCHEOLOGICAL RECOMMENDATIONS

SES-3

Previous work at this location identified two Late Archaic sites that were quite extensive and documented what may very probably have been a major prehistoric occupation. The area was subsequently developed, and it now lies within the main access to Ichthyological Associates headquarters. Only isolated portions of the original tract remain undisturbed. The site was considered to be only potentially significant since primary archeological evidence has been largely destroyed or displaced. Commonwealth's testing program revealed that artifact concentrations do not extend below the plow zone so that preservation of major features is improbable. The former size and probable extent of the site is such that selective undisturbed areas may yet disclose archeological materials, albeit not of a primary nature. Major mitigation is clearly not called for, but preservation procedures for intact portions of the sites could be implemented with minimal effort and in conjunction with Pennsylvania Power and Light's relandscaping operations. Protective planting of the area, including the riverbank, is suggested. Should this plan prove unfeasible, or if further development is scheduled, monitoring of such activities is suggested.

Comments:

PP&L has begun adding fill and seeding this site to prevent further erosion.

SES-6

Excavation of this site revealed diagnostic artifacts as well as several in situ archeological features occurring to depth and below plow zone. This is a probably Middle Woodland site that provided initial evidence for the existence of an occupation horizon with possible suggestions of activity areas. The site was discovered as a result of the profiles exposed by the drainage ditch that was cut through it. The erosion that is occurring along the cut is already destroying the archeological evidence and will continue to do so if not checked. A first step in the preservation of this significant resource would include solid infilling and grading of exposed profiles. The significance of the site calls for additional deep testing and trenching across the north levee where the most diagnostic archeological materials were found. A designated area at this location should be excavated and until that time the vicinity should be graded and either seeded with protective plantings or riprap with protective plantings. The area should be permanently protected and fenced in.

Comments:

PP&L has covered this area with fill and seeded with protective plantings. Since the area where this site is located is not used by the public, protective fencing has not been required.

SES-8

Deep testing at this site disclosed the presence of cultural materials of the Transitional period at a depth of approximately 1.5 M. This is a potentially critical site, as it may document a pivotal prehistoric period which is not very well understood by archeologists. Additionally, the deeply buried setting of the site suggests that materials may be well preserved and that the site may be defined in terms of the alluvial history of the floodplain. There are, however, no significant surface distributions of an archeological nature, so that since no major disturbances of the landscape are scheduled for this area, mitigation and intensive investigation of this site are not warranted. It would be beneficial if the area were to be removed from the perimeters of cultivation. In the event that future developments necessitate subsurface disturbances or earth removal, close monitoring of operations is imperative and further testing may be called for.

Comments:

No direct or indirect affects are expected on this forested site. No mitigative measures required.

SES-11

Excavations suggested that a Woodland-period occupation occurred at this site. Materials were found below the surface and plow zone and offered the potential for site preservation. At this stage the total recovery of materials is not sufficient to justify a major mitigation effort, but the site should be considered a significant resource. In the absence of definite plans for construction, the area's potential cultural resource base may remain undisturbed by removing the tract from cultivation and planting a protective vegetation cover. Fencing is also a viable option.

Comments:

The tract has been removed from cultivation and there are no plans to construct on this site.

JSF/dml



COMMONWEALTH OF PENNSYLVANIA  
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION  
BUREAU FOR HISTORIC PRESERVATION  
BOX 1026  
HARRISBURG, PENNSYLVANIA 17108-1026

RECEIVED  
JAN 06 1986  
NUCLEAR DEPT.

December 19, 1985

Jerome S. Fields  
Senior Environmental Scientist-Nuclear  
Pennsylvania Power & Light Company  
Two North Ninth Street  
Allentown, PA 18101

Re: Susquehanna Steam Electric  
Station/Operation & Maintenance  
Activities, PP&L File No. 991-2  
BHP File No. ER 81-0658-079-C

Dear Mr. Fields:

We have reviewed your request to have the effect determination for the above referenced project changed from "no adverse effect" to "no effect". Because the actions described have had an effect on archaeological sites, the original determination stands. Your final report should continue to reflect a no adverse effect finding.

Should you have any additional questions, or if we can be of any additional assistance please contact Kurt Carr or myself at (717) 783-8946.

Sincerely,

Dan G. Deibler, Acting Chief  
Division of Planning & Protection  
Bureau for Historic Preservation

DGD:jk

