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August 21, 2007

Ms. Carol Ash, Commissioner
State Historic Preservation Officer
New York State Office of Parks, Recreation, and Historic Preservation
Historic Preservation Field Services Bureau
Empire State Plaza, Agency Building #1
Albany, NY 12238

RE: Entergy Nuclear Indian Point 2 and Entergy Nuclear Indian Point 3
Phase 1A Literature Review and Archeological Sensitivity Assessment
Westchester County, New York

Dear Ms. Ash:

On behalf of Entergy Nuclear Indian Point 2, LLC and Entergy Nuclear Indian Point 3, LLC (hereafter referred to as "Entergy"), the owner of Indian Point Unit 2 and Indian Point Unit 3, Enercon is forwarding the enclosed Phase 1A Literature Review and Archeological Sensitivity Assessment of the Indian Point site. Entergy has filed an application with the Nuclear Regulatory Commission (NRC) to renew the Indian Point 2 and Indian Point 3 Operating Licenses for an additional twenty years. A copy of this Phase 1A was submitted to the NRC in response to a License Renewal Site Environmental Audit Additional Information Request.

Entergy does not have plans for further development of the property in association with the application for license renewal, but has developed a procedural plan for management of cultural resources ahead of any future ground disturbing activities at the plant. Entergy procedure EN-EV-121 (*Cultural Resources Protection Plan*), which is also enclosed for your information, was developed in an effort to meet state and federal expectations. The measures in this procedure include archeological investigations and consultations with the New York SHPO and appropriate Native American groups ahead of any future ground disturbing activities, as applicable to the ground-disturbing activity. These measures would provide adequate protection for area cultural resources.

If you have any questions, please contact me at (918) 665-7693 or through my email address, jthomas@enercon.com.

Sincerely,

James A. Thomas
Client Services Manager

JAT

Enclosure: Phase 1A Literature Review & Archeological Sensitivity Assessment
Entergy Procedure EN-EV-121, Cultural Resources Protection Plan

Cc: Jennifer Davis, NRC
Nancy Herter, NYSHPO
Dara Gray, Entergy Indian Point
Rick Buckley, Entergy
Jill Brochu, Entergy

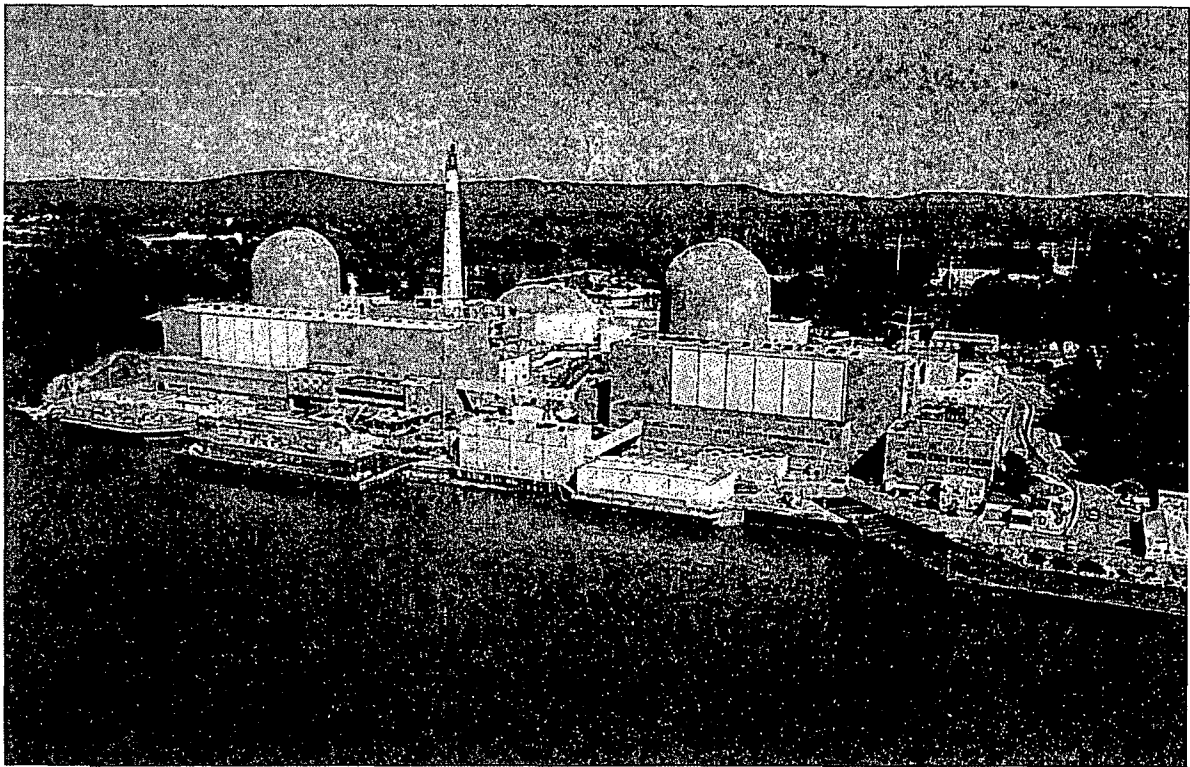
**Phase IA Literature Review and Archeological Sensitivity
Assessment of the Indian Point Site
Westchester County, New York**

**Prepared For
Entergy Nuclear Indian Point 2, LLC
Entergy Nuclear Indian Point 3, LLC**

Prepared By



**ENERCON SERVICES, INC.
5100 E. Skelly Drive, Suite 450
Tulsa, Oklahoma 74135**



March 22, 2007

**Phase IA Literature Review and Archeological Sensitivity
Assessment of the Indian Point Site
Westchester County, New York**

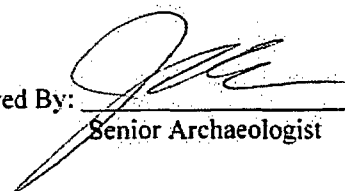
**Prepared For
Entergy Nuclear Indian Point 2, LLC
Entergy Nuclear Indian Point 3, LLC**

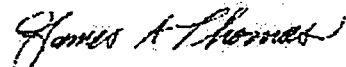
**Submitted To
Ms. Dara Gray
Indian Point
Village of Buchanan, New York**

Prepared By



**ENERCON SERVICES, INC.
5100 E. Skelly Drive, Suite 450
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918-665-7693**

Prepared By:  Printed Name: James M. Briscoe Date: 03-22-07
Senior Archaeologist

Approved:  Printed Name: James A. Thomas Date: 03-23-06
Project Manager

ABSTRACT

Entergy Nuclear Indian Point 2, LLC and Entergy Nuclear Indian Point 3, LLC (hereinafter collectively referred to as "Entergy") are submitting an application to the Nuclear Regulatory Commission (NRC) to renew the Operating License for Indian Point Unit 2 (IP2) and Indian Point Unit 3 (IP3) located in Westchester County, New York. The renewal term for IP2 would extend the Operating License from midnight September 28, 2013, until midnight September 28, 2033. The renewal term for IP3 would extend the Operating License from midnight December 12, 2015, until midnight December 12, 2035.

The following Phase IA Literature Review and Archeological Sensitivity Assessment of the Indian Point site was prepared for Entergy by Enercon Services, Inc. as part of the background information being presented to the NRC. Background archeological and historical research conducted at the New York State Historic Preservation Office (SHPO), review of general literature and online sources, and review of materials from the Verplanck and Westchester County Historical Society, combined with a preliminary grounds walkover suggest that certain areas of the property has the potential for containing prehistoric and historical cultural resources. Prehistoric resources can potentially be expected around a small pond in the wooded area on the northern third of the property and along the shoreline terrace near Lent's Cove, on the north edge of the property. Historical resources may also exist in the center of the wooded area north of the power plant facilities. However, since those resources are located on an approximate 80-acre tract of property on the northern portion of the site that has been heavily disturbed by previous surface mining activities, the potential for prehistoric and historical resources to be present is unlikely, with the possible exception of the shoreline terrace area near Lent's Cove.

Entergy does not have plans for further development of the property in association with the application for license renewal. However, Entergy has procedural administrative controls in place to ensure that cultural resource reviews are conducted prior to engaging in construction or operational activities in previously undisturbed area that may result in a potential impact to cultural resources at the site (Entergy EN-EV-121). This Cultural Resources Protection Plan was developed in an effort to meet state and federal expectations and includes measures for archeological investigations (Phase IB) and consultations with the New York SHPO and appropriate Native American groups ahead of any future ground disturbing activities. These measures provide adequate protection for potential area cultural resources.

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1.0 INTRODUCTION

The following report presents the results of a Phase IA Literature Review and Archeological Sensitivity Assessment of the Indian Point site property prepared for Entergy Nuclear Indian Point 2, LLC and Entergy Nuclear Indian Point 3, LLC (hereafter collectively referred to as "Entergy") by Enercon Services, Inc. Entergy is submitting an application to the Nuclear Regulatory Commission (NRC) to extend the operating license for Indian Point Unit 2 (IP2) and Indian Point Unit 3 (IP3) located in Westchester County, New York. The Phase IA review was performed in accordance with the requirements of the State Environmental Quality Review Act (SEQRA) 6 NYCRR Part 617 of the New York State Environmental Conservation Law.

Investigations included onsite investigations on November 7, 2006, a visit to the New York State Historic Preservation Office (NYSHPO) on November 28, 2006, and background research with local sources, libraries, and online sources between November 1 and 30, 2006. Onsite investigations included a preliminary tour of the property and walkover of selected landforms by James Briscoe, archeologist for Enercon Services, Inc. The walkover was completed on November 7, 2006 through approximately 80 acres of wooded tract on the north end of the Indian Point site property. The route of the loop was arbitrary, ambling, and focused on looking at certain landforms. The walkover combined with a general facility tour revealed that the northern one-third of the property (80 acres) has been extensively disturbed by nineteenth century quarry activities. Areas around and south of the plant facilities have been essentially 100% disturbed by the plant construction and operations.

The majority of the 80-acre wooded area has been extremely disturbed by surface mining and resembles lunar topography. There were numerous small stone piles where surface rock and earth have been piled to extract limestone and possible iron ore deposits. Areas of potential aboriginal and historical interest were noted in some of the less disturbed areas.

Previous studies have not been conducted on the site property, but a great deal of research has been conducted in the region. The terraces along the Hudson River, particularly in the vicinity of side stream inlets, were favored areas throughout the prehistoric period. Historical resources, for the most part, have been heavily disturbed by construction of present power generation facilities, and by earlier quarry/mining activities. The original facility, Indian Point Number 1, was the first commercial reactor in the United States. IP1 is no longer operational, and has been placed in SAFSTOR with intent for decommissioning with IP2, at a future time.

Entergy has no plans for significant additional construction or plant refurbishments during the license renewal terms. However, Entergy has a procedure for management of land disturbance to protect potential cultural resources ahead of any future ground disturbing activities at the plant. This Cultural Resources Protection procedure was developed in an effort to meet state and federal expectations and includes measures for archeological investigations (Phase IB) and consultations with the New York SHPO and appropriate Native American groups prior to any future ground disturbing activities, if needed. These measures provide adequate protection for potential site cultural resources.

2.0 METHODOLOGY

Preparation of this report involved review of documentary sources at the New York City Public, Albany Public, Fishkill, Verplanck, and Peekskill Libraries, review of historical maps of the area, review of online sources, informal interviews with local representatives familiar with the area, contact with other archeologists, and a formal files search at the New York SHPO office in Waterford, New York.

Local libraries proved to be the best source of local information

Onsite investigations included perusal of site information, a general tour of the facility grounds and a walkover of selected areas. James Briscoe, Archeologist of Enercon Services, was accompanied by George Seminara, Nuclear Operating Technician, Rick Buckley, Senior Project Manager, and Jill Brochu, License Renewal Specialist of Entergy. Conditions were cool, dry, and sunny and all areas of the plant grounds were made available for these investigations. Notes about the area were made by the archeologist at the time of the site visit and photographs and maps were provided by Entergy.

3.0 LOCATION AND SETTING

Indian Point Entergy Center is located on a roughly 239-acre site on the east shore of the Hudson River, on a point of land known as Indian Point, in the Village of Buchanan, Westchester County, New York. Figure 1 shows an aerial view of the Indian Point site. The Indian Point site is bounded on the east by Broadway, Lent's Cove to the north, a former quarry operation to the south, and the Hudson River to the west. The site is in a mixed residential, commercial and industrial area approximately 40 miles north of New York City, New York.

The local terrain is generally flat, with the surrounding area around the Station largely forested with mixed development and open spaces. The site lies within the Hudson Valley portion of the Valley and Ridge geomorphic province of the Eastern Broadleaf Forest (Oceanic) ecological subregion [USDA, 1994]. It is characterized by a linear lowland, a glacial lake plain in part, bounded on either side by high escarpments. The lowland was created by graben-faulting, easily eroded bedrock, and glacial scour. Fluvial erosion, transport and deposition, and mass wasting are the primary geomorphic processes operating. Minimum elevations range from about 200 ft (61 m) in the north to near sea level south of Long Island Sound. Maximum local elevations are generally less than 500 ft (152 m) but range to 1,000 ft (305 m) [USDA, 1994]. Gentle slopes cover 50 to 80 percent of the area, 50 to 75 percent occurs in uplands. This province consists of narrow to wider river terraces along the Hudson, backed by steep slopes and ridges. The Hudson Highlands, below the Catskills, confine the river to a narrower channel. Terraces tend to be higher along this portion of the river, with lower and gentler terraces along side of inlets and confluences with second order streams. Local topography includes steeper terraces in the area of the power plants and gentler slopes on the southern end of the point.

The shoreline along the river on the west edge of the property is a steep and somewhat rocky bluff line that rises 20 to 40 feet from the water's edge, with a stone-lined talus at the base of the generally sheer bluff. The site property has an elevation of 50 to 120 feet, with higher elevations along its southeastern side. The surface soils consist of overburden silts and glacial till, which overlay limestone beds. Surface soils are generally shallow and rocky in areas where surface disturbance is minimal and non-existent where surface quarrying is greatest.

The central and southern two-thirds of the property have been 100% impacted by earlier development, including construction of the present facilities. The northern third (roughly 80 acres in size) is wooded, but has also been extremely disturbed by limestone quarrying. Talus heaps to 30 feet high dominate the area between quarry pits and very little of the area retains intact or less disturbed conditions. Lent's Cove on the north edge of the property has undergone major changes with silting of the landing and landfill added for a baseball park. The ballpark and older landing area property have been given to the Village of Buchanan by Entergy.



Figure 1. Aerial View of the Indian Point Site

4.0 BACKGROUND RESEARCH

According to New York SHPO records, there are no previously recorded archeological sites within a mile of the property.

According to New York SHPO records, no studies have been previously conducted on the Indian Point site property. In 1972, a copy of a new site plan was filed with the New York SHPO and included a files search of previously recorded sites and NRHP properties in the area. No sites or properties were located in the area and no further archeological investigations appear to have been conducted.

A walkover of the Indian Point site property was performed on November 7, 2006, in the company of Entergy personnel. The walkover was a cursory surface reconnaissance of the wooded area north of the actual facility. The majority of the wooded area has been extremely disturbed by surface mining and resembles lunar topography. There are numerous small stone piles (mining talus) where surface rock and earth have been piled to extract lower limestone and possible iron ore deposits. Areas of potential aboriginal and historical interest were noted in three of the less disturbed areas.

The windshield general reconnaissance was completed of the remainder of the facility [REDACTED]. The area of the main facilities has been 100% disturbed by modern improvements. The only area of passing interest from a historical standpoint is the concrete steps at the entrance to the amusement park that once stood there.

[REDACTED]

It is unclear what archeological significance these localities may have, pending any future archeological investigations.

The State Preservation Historical Information Network Exchange (SPHINX) database, which is constructed and maintained by the NYSHPO, is used to store up-to-date information on New York aboveground historic sites that are eligible for listing or are already listed on the NRHP and NYRHP [NYSHPO, 2006]. The area within a 6-mile radius of the site covers portions of Westchester County, Putnam County, Orange County, and Rockland County. This four-county area has a long and extensive Native American and Euro American history, the development of a large local population, and years of intensive historical survey work. As a result, the SPHINX database contains entries for many hundreds of individual historic sites and districts eligible for listing and already listed on the NRHP and NYRHP. Westchester County alone has 217 listed aboveground historic sites. Two of the closest listed historic sites to the site are the City of Peekskill Downtown Historic District, which is about 2 miles to the northeast, and Stony Point Battlefield, which is about 1.5 miles south of the site. Additional listed sites within a 6-mile radius of the site are provided in Table 1.

Table 1
Listed Historic Sites Located in the Vicinity (6-Mile Radius) of IP2 and IP3

Site Name	Nearest City or Town	Listed NRHP	Listed NYRHP
Westchester County			
Standard House	City of Peekskill	Yes	Yes
Peekskill Freight Depot	City of Peekskill	Yes	Yes
Thomas Nelson House	City of Peekskill	Yes	Yes
Peekskill Presbyterian Church	City of Peekskill	Yes	Yes
Aaron Copland House	Town of Cortlandt	Yes	Yes
St. Peter's Episcopal Church	City of Peekskill	Yes	Yes
Isaac Young House	Town of New Castle	Yes	Yes
Peekskill Downtown Historic District	City of Peekskill	Yes	Yes
Old St. Peter's Church and Old Cemetery at Van Cortlandville	Town of Cortlandt	Yes	Yes
Carrie Chapman Catt House	Town of New Castle	Yes	-
Ford Administration Building	City of Peekskill	Yes	-
Fort Hill-Nelson Avenue Historic District	City of Peekskill	Yes	-
St. Augustine's Episcopal Church	Village of Croton-on-Hudson	Yes	-
Old St. Peter's Church	Town of Cortlandt	Yes	Yes
Old Croton Dam; Site of New Croton Dam	Town of Cortlandt	Yes	Yes
Van Cortlandt Upper Manor House	Town of Cortlandt	Yes	Yes
Bear Mountain Bridge Road	Town of Cortlandt	Yes	Yes
Van Cortlandville School (Common District School No. 10)	Town of Cortlandt	Yes	Yes
John Jones Homestead	Town of Cortlandt	Yes	Yes
Old Croton Aqueduct	Town of Cortlandt	Yes	Yes
Old Chappaqua Historic District	Town of New Castle	Yes	Yes
Chappaqua Railroad Depot and Depot Plaza	Town of New Castle	Yes	Yes
Church of Saint Mary the Virgin and Greely Grove	Town of New Castle	Yes	Yes
Greely House	Town of New Castle	Yes	Yes
Rehoboth	Town of New Castle	Yes	Yes
Sarles' Tavern-Granite House	Town of New Castle	Yes	Yes
Williams-DuBois House	Town of New Castle	Yes	Yes
Drum Hill High School	City of Peekskill	Yes	Yes
Beecher-McFadden Estate	City of Peekskill	Yes	Yes
Villa Loretto	City of Peekskill	Yes	Yes
United States Post Office-Peekskill	City of Peekskill	Yes	Yes
Van Cortlandt Manor	Village of Croton-on-Hudson	Yes	No
Croton North Railroad Station	Village of Croton-on-Hudson	Yes	Yes
St. Mary's Complex	City of Peekskill	Yes	-
St. Patrick's Church	Town of Cortlandt	Yes	-
Mount Florence	City of Peekskill	Yes	Yes
Quaker Bridge Road	Town of Cortlandt	Yes	-
Asbury United Methodist Church; Bethel Chapel and Cemetery	Village of Croton-on-Hudson	Yes	Yes
Rockland County			
Henry M. Peck House	Town of Haverstraw	Yes	Yes
Philadelphia Toboggan Company Carousel No. 15	Town of Clarkstown	Yes	Yes
Bear Mountain Inn	Town of Stony Point	Yes	Yes
H.R. Stevens House	Town of Clarkstown	Yes	Yes

Table 1
Listed Historic Sites Located in the Vicinity (6-Mile Radius) of IP2 and IP3

Site Name	Nearest City or Town	Listed NRHP	Listed NYRHP
Terneur-Hutton House	Town of Clarkstown	Yes	Yes
Blauvelt House	Town of Clarkstown	Yes	Yes
Commander	Town of Stony Point	Yes	Yes
Stony Point Battlefield	Town of Stony Point	Yes	Yes
Stony Point Lighthouse	Town of Stony Point	Yes	Yes
Homestead	Town of Haverstraw	Yes	Yes
Henry Garner Mansion	West Haverstraw	Yes	Yes
Fraser-Hoyer House	West Haverstraw	Yes	Yes
Rockland County Courthouse and Dutch Gardens	Town of Clarkstown	Yes	Yes
King's Daughters Public Library	Town of Haverstraw	Yes	Yes
Mount Moor African American Cemetery	Town of Clarkstown	Yes	Yes
Central Presbyterian Church	Town of Haverstraw	Yes	-
William H. Rose House	Town of Stony Point	Yes	Yes
Bear Mountain Bridge and Toll House	Town of Stony Point	Yes	Yes
United States Post Office-Haverstraw	Town of Haverstraw	Yes	Yes
Orange County			
St. Mark's Baptist Church	Village of Highland Falls	Yes	Yes
Fort Montgomery Site	Town of Highlands	Yes	Yes
Cragston Dependencies	Town of Highlands	Yes	No
St. Mark's Episcopal Church	Town of Highlands	Yes	No
Storm King Highway	Town of Highlands	Yes	No
U.S. Bullion Depository	Town of Highlands	Yes	No
U.S. Military Academy (West Point)	Town of Highlands	Yes	Yes
Center Street, House at 37	Village of Highland Falls	Yes	No
Church of the Holy Innocents and Rectory	Village of Highland Falls	Yes	No
First Presbyterian Church of Highland Falls	Village of Highland Falls	Yes	No
Highland Falls Railroad Depot	Village of Highland Falls	Yes	No
Highland Falls Village Hall	Village of Highland Falls	Yes	No
House at 116 Main Street	Village of Highland Falls	Yes	No
Parry House	Village of Highland Falls	Yes	No
Pine Terrace	Village of Highland Falls	Yes	No
The Squirrels	Village of Highland Falls	Yes	No
Stonihurst	Village of Highland Falls	Yes	No
Webb Lane House	Village of Highland Falls	Yes	No
Queensboro Ironworks Historic District	Town of Highlands	Yes	-
Bear Mountain State Park Historic District	Town of Highlands	Yes	Yes
Palisades Interstate Parkway	Town of Highlands	Yes	Yes
Putnam County			
Boscobel	Town of Philipstown	Yes	Yes
Castle Rock	Town of Philipstown	Yes	Yes
DeRham Farm	Town of Philipstown	Yes	Yes
Old Albany Post Road	Town of Philipstown	Yes	Yes
The Birches	Town of Philipstown	Yes	Yes
Eagle's Rest (Jacob Rupert Estate)	Town of Philipstown	Yes	Yes
Garrison Landing Historic District	Town of Philipstown	Yes	Yes
Garrison Union Free School	Town of Philipstown	Yes	Yes
Glenfields	Town of Philipstown	Yes	Yes
Hurst-Pierrepont Estate	Town of Philipstown	Yes	Yes
Mandeville House	Town of Philipstown	Yes	Yes
Montrest	Town of Philipstown	Yes	Yes
Moore House	Town of Philipstown	Yes	Yes

Table 1
Listed Historic Sites Located in the Vicinity (6-Mile Radius) of IP2 and IP3

Site Name	Nearest City or Town	Listed NRHP	Listed NYRHP
Normandy Grange	Town of Philipstown	Yes	Yes
Oulagasket	Town of Philipstown	Yes	Yes
Rock Lawn and Carriage House	Town of Philipstown	Yes	Yes
Walter Thompson House and Carriage House	Town of Philipstown	Yes	Yes
Walker House	Town of Philipstown	Yes	Yes
Wilson House	Town of Philipstown	Yes	Yes
Woodlawn (Malcolm Gordon School)	Town of Philipstown	Yes	Yes
Fair Lawn	Town of Philipstown	Yes	Yes
West Point Foundry	Town of Philipstown	Yes	Yes
Manitoga (Russell Wright Estate)	Town of Philipstown	Yes	Yes
Dick's Castle	Town of Philipstown	Yes	Yes
Plumbush	Town of Philipstown	Yes	Yes
St. Philips Church in the Highlands Complex	Town of Philipstown	Yes	Yes
Frederick Osborn House	Town of Philipstown	Yes	Yes
Indian Brook Road Historic District	Town of Philipstown	Yes	Yes
Garrison Grist Mill Historic District	Town of Philipstown	Yes	Yes
NYSHPO, 2006			

Note: - in table above indicates site may be proposed on state list, but approval of its listing has not yet occurred.

5.0 OVERVIEW

The Hudson Valley has a long and varied past. The following summary is a brief recounting from the general literature and the reader is directed to the sources in the Bibliography for more in-depth details about the area.

5.1 Prehistoric Era

The prehistory of the region encompasses the Paleo-Indian, Archaic, Transitional, and Woodland periods. The Paleo-Indian period (10,000 - 8,000 B.C.) is the time humans first came to the southeastern New York region. The Archaic (8,000 - 1,700 BC) refers to a time prior to the introduction of horticulture and pottery manufacture and is divided into Early, Middle, and Late periods. The Transitional period (1,700 - 1,000 BC) witnessed a gradual change in Archaic lifestyles with the development of "Woodland" period traits. The Woodland period (1,000 BC - AD 1,600), which is characterized by the use of pottery and reliance on horticulture, is divided into Early, Middle, and Late periods. [Boesch]

The Paleo-Indian period corresponds with the end of the Wisconsin glaciation. Sea levels were lower during this period and the subsequent Early Archaic period due to sea water being trapped in the remaining glacial ice. Local forests consisted primarily of spruce and fir with small amounts of oak and other deciduous species. Many faunal species now extinct or no longer native to the area were present. These included mammoth, mastodont, caribou, giant beaver, elk, moose, and peccary [Boesch].

Paleo-Indian Period groups were the first prehistoric occupants of the Hudson River Basin. These occupations began after retreat of the last Wisconsin glacial front about 11,000 years ago. The American Indian groups of this period subsisted by hunting large and small mammals, fish, and foraging local plants. Small bands or extended family groups spread across the Hudson Valley, particularly along the broad meadows and river terraces, in pursuit of the herds that favored the lush valley. Hunting, gathering and fishing were optimal in the valley and evidence suggests that the early bands took full advantage of the resources. The Paleo-Indian Period ends in the Hudson Valley due to changes in the climate and local resources. Warmer and slightly dryer conditions, floral and faunal changes and a slight population growth towards the end of the period led to shifting subsistence strategies.

The Earlier Archaic in the lower Hudson/Mohawk region is typified by several phases of the Lamoka Phase. These people were adept hunters, fishermen, and gathering foragers that frequented favorite locations on a seasonal or regular basis. As smaller bands became larger through the period, camps became larger and more permanent in nature. The Archaic groups were adept at a seasonal utilization of riverine and upland resources. Period sites are concentrated along the margins of larger order streams, and in rougher uplands as well. By the end of the Archaic, prime locations were being occupied for extended seasons and year-round.

About 3500 years ago, influences from the south were reaching the Hudson River. Locally considered as a transitional period, the Orient Tradition or Stone Bowl phase is

considered the first signs of semi-sedentary or settled village life in the region. The most striking features of the culture are fishtail and leaf shaped dart points and Susquehanna Steatite bowls (small basket shapes). Steatite is characteristically a gray soapstone that occurs from as far south as Washington, DC and as far north as Easton, Pennsylvania. Felcite bifaces or trade blanks from upper Maine (Moosehead region) found as far south as New Jersey and Maryland, along with copper and flint from the Great Lakes, and steatite from the Delaware Valley point to a trade or economic sphere that existed in the region. Other influences from the Adena/Hopewell cultures were beginning to influence local groups as well. Permanent villages and the vestiges of social order/ranking, and possibly of religious organization, led to the Woodland period.

At the beginning of the true Woodland Period around 3,000 years ago, the use of clay pottery spread throughout the Hudson Valley. Interestingly, the first clay pottery has steatite temper and resembles the stone bowl shapes of the preceding centuries. Subsistence during this period continued to focus on the hunting of small game, fishing, and gathering from populations of indigenous plants. The Woodland Period also saw an increasing dependence on cultivated crops. During the Woodland Period, it is estimated that 60,000 to 70,000 people occupied the Hudson River Valley area. [CHGEC]

The Woodland Stage or Period includes a number of phases. The earlier Woodland period includes the Meadowood phase, consisting of small to larger villages located on prominent streams next to prodigious fisheries. Intensive mollusk collection resulted in dense shell middens that continue to exist along the terraces of the Hudson River and many of its major tributaries. Later Woodland manifestations are more amorphous in the region but appear to be a continuation of fishing and foraging along the more major streams. The Middlesex phase information comes mostly from graves and shows heavy influence from the Adena cultures to the west. The Woodland period ends with the first written records of the area (around 1600 CE), but vestiges of the same people have remained in the region up to the present time.

5.2 Historic Era

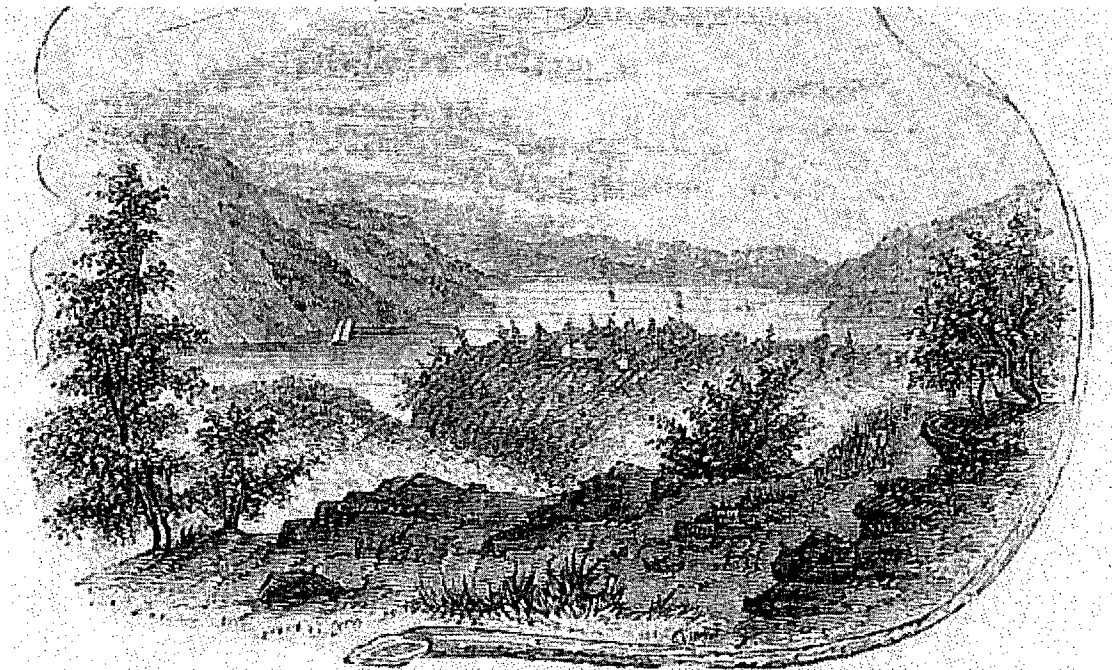
The Historic Period begins with the first European explorations in the Hudson Valley area. Henry Hudson was not the first European to actually visit the area, but did begin to make detailed written records during his explorations in 1609 [CHGEC]. Verazzano visited the lower Hudson a decade earlier and the region was probably familiar to Portuguese cod fishermen well before that. The lower Hudson River was home to the Lenape or upper Delaware bands, consisting of numerous smaller communities. The local band was known as the *Kitchawak*, whose territory extended along the east shore of the Hudson River between Croton and Anthony's Point (across from Bear Mountain). Their principal village, *Kitchawank*, was at the mouth of the Croton River. The *Kitchwak* also occupied a small village near Verplanck, called *Sackhoes*, and a second larger fortified village at Peekskill. On October 1, 1609, the Half Moon anchored in Peekskill Bay. The following day, the first native of the area was killed by the Dutch for attempting to pilfer items from the boat deck [French].

The European-American presence in the region remained minimal until 1683 when a Dutch settler named Verplanck purchased what would later be known as Indian Point from the Kitchawak. Verplanck's homestead was placed on the high ground south of Peekskill inlet/bay (see Figure 2). Peek, for whom Peekskill is named, was a land speculator and never actually visited the area. Several other Dutch land tracts were occupied around the area and by 1700 a landing had been built in the bay. A member of

the Verplanck family married a Courtland and established a homestead at the landing between Verplanck's land and Peekskill. The new family took the name Lent for the town in Holland where the two families had come from. The bay later became known as Lent's Cove.

During the early eighteenth century, the area produced mostly agricultural and fishing products for sale to New York merchants. Some iron making was also being done in the area but is not noted as a principle industry until later in the nineteenth century.

In 1777 the British landed at Lents Cove to raid the City of Peekskill. The remnants of the Continental fleet (a series of river long boats) was moored in the bay at the time and were destroyed by the British during the raid. Lent's house and the dock facilities were also destroyed during the raid. Indian Point itself was the scene of skirmishing around the landing, but no mention was found about damages to Verplanck's home only a few hundred feet south of the landing. Military installations were erected at Stoney Point and the town of Verplanck below the present power plant facilities. Stony Point Battlefield is on the western bank of the river and Rochambeau's encampment is located on the east side of the river, at the boating facilities on the south side of the present town site of Verplanck. It is from this encampment that the French began their trek southward to join Washington at the Siege of Yorktown.



View Near Fort Montgomery

Figure 2. Indian Point as it Appeared During the American Revolution.

The Verplanck homestead can be seen in the center of the sketch, the power plants would have been located to the left of the ravine, and Lent's Cove is on the right side of the sketch.

During the nineteenth century, ironworks sprang up along the Hudson River, with mines, lime quarries, kilns, blast furnaces, and small manufacturing facilities (see Figure 3). A small farm implement plant was operated at Peekskill just north of Indian Point. The north end of Indian Point was heavily surface mined during the later nineteenth century. A lime kiln and blast furnace existed on the shoreline (within or next to the modern facility), but were moved elsewhere after raw materials became harder to locate nearby. Around 1900, light farming and a brickyard owned by Charles Southard existed on or near the Indian Point site.

Beginning early in the nineteenth century, dozens of steamboats, owned by numerous steamboat companies, traveled up and down the Hudson River on a daily basis. Steamboats had begun service on the river in the 1820s. During the heyday of steam boating, every landing along the approximately 143 miles of Hudson River from New York City to Albany was served by a steam-propelled vessel of some type. The last steamboat service was the Hudson River "Day Liner" (an offshoot of the original "Hudson River Day Line" company formed in 1863), which passed by the Indian Point site each day up until the mid 1980s. The company closed in 1987, but has been sold and reopened in recent years.



Figure 3. Excerpt from the 1867 Atlas Westchester County.

Hudson River Day Line

LOCAL PASSENGER FARES

NEW YORK	TO	ALBANY
One Way	Excursion	One Way
8:30	1:00	12:00
7:30	1:00	11:00
6:30	1:00	10:00
5:30	1:00	9:00
4:30	1:00	8:00
3:30	1:00	7:00
2:30	1:00	6:00
1:30	1:00	5:00
12:30	1:00	4:00
11:30	1:00	3:00
10:30	1:00	2:00
9:30	1:00	1:00
8:30	1:00	12:00
7:30	1:00	11:00
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4:30	1	

The Day Line selected a site on the east side of the river below Peekskill and acquired 320 acres of land for the park. Claiming that its property had been a meeting place for Indians, the Day Line called the park Indian Point, a name calculated to have an attractive ring for its younger passengers. Indian Point Park opened on June 26, 1923. Set in a less rugged terrain than Bear Mountain, there were facilities for picnicking, dining in a cafeteria, or swimming in the 100 feet by 150 feet pool. There was a dance hall and a beer hall. A quarter got visitors into the park; a dime bought a ride in a speedboat. Indian Point drew more than 5,000 people on the weekends and hundreds on weekdays.

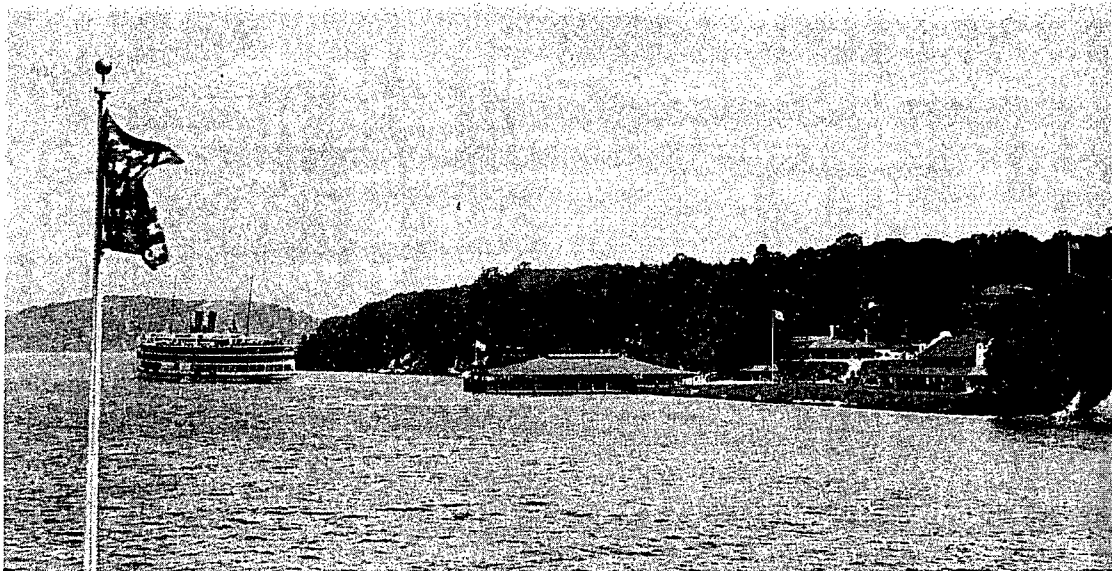


Figure 6. Steamship De Witt Clinton shown Departing Pier at Indian Point Park.

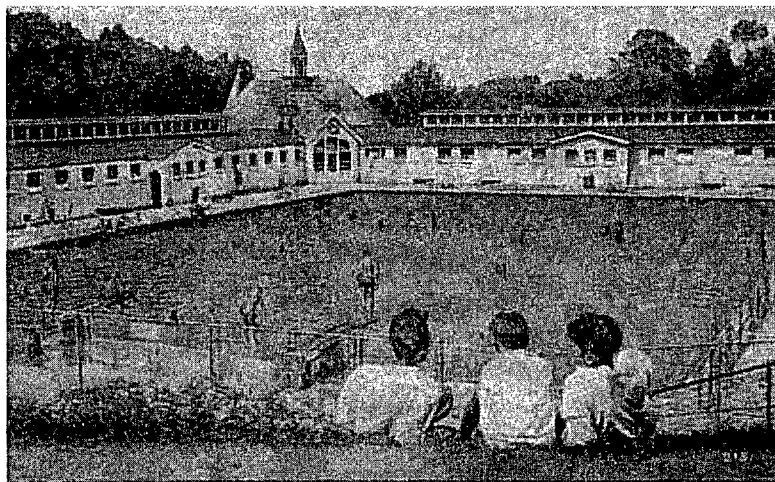


Figure 7. Postcard View of the 100 x 150 ft Pool at Indian Point Park. Circa 1940

After World War II, the popularity of the park began to decline as the use of the automobile broadened the choice of day trips and vacation spots. In 1949, the Hudson River Day Line, its' steamboats and certain landings were sold to another private company which continued to operate the steamboats. Indian Point Park was not purchased in the deal. In 1950, arrangements were made to allow the new "Day Line" to resume landing at the park. The Consolidated Edison Company (ConEdison) purchased the park holdings in 1957.

ConEdison was struggling to meet the growing electricity needs of the mushrooming suburbs of Westchester County. ConEdison needed new power plants, but was already weathering criticism over air pollution from its oil and coal plants and the company was considering the promising new technology of atomic energy. Indian Point Park closed in 1956 and the first commercial nuclear reactor was begun shortly thereafter.

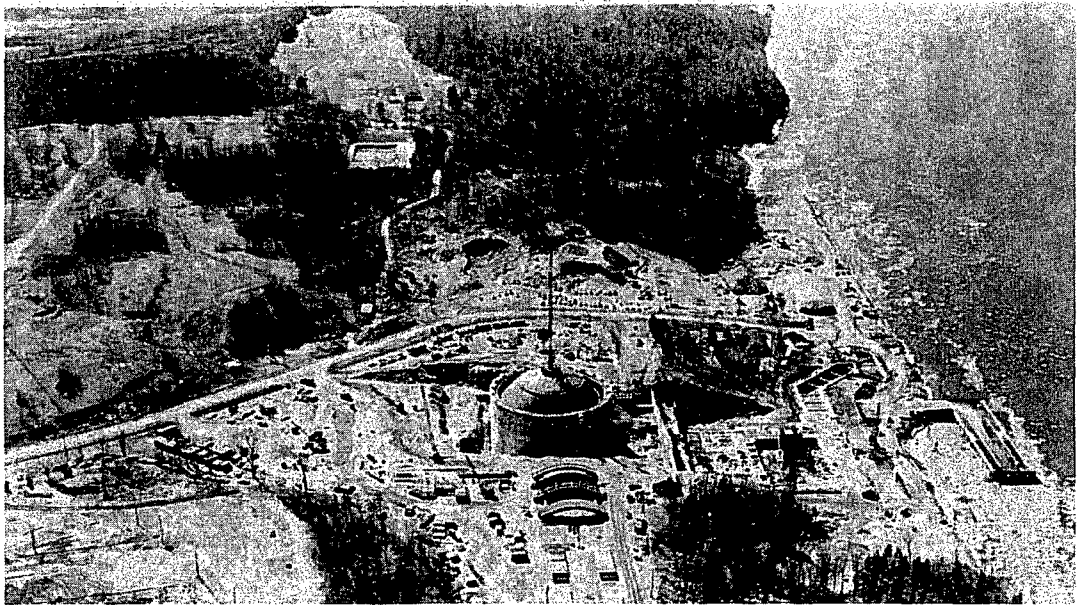


Figure 8. Construction of Indian Point 1.

Note the drained swimming pool and ball fields in the upper left of the photo.

IP1 and its onsite support facilities were completed and ready for commercial operations by August 1962 [CHGEC, Section IV.B.2.a].

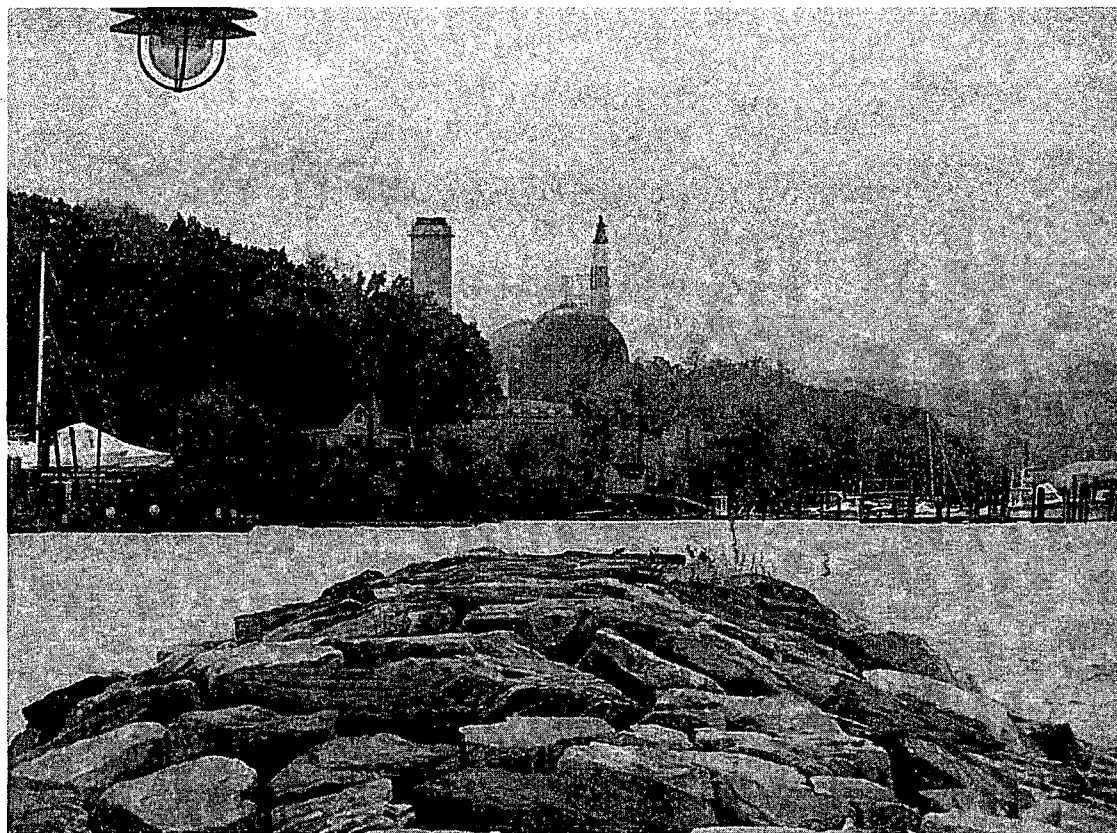


Figure 9. View of Indian Point from Peekskill.

6.0 CONCLUSIONS

Continued operation of the facility does not include any plans for expansion of existing facilities, refurbishment activities, or the disturbance of any new or previously undisturbed areas on the property. In addition, IP2 and IP3 plant operations are not expected to be altered and any maintenance activities necessary to support ongoing operations would be limited to previously disturbed areas, with no expansion of existing facilities planned. Therefore, there will be no anticipated impacts to potential cultural resources during the IP2 and IP3 license renewal term.

A land disturbance map was developed in December 2006 of the Indian Point site property [REDACTED]. A map of the Indian Point site property was also developed that identifies areas of potential archeological concern [REDACTED]. Entergy has procedural administrative controls in place to ensure that environmental reviews are conducted prior to engaging in additional construction or operational activities that may result in an environmental impact at the site. This includes activities involving disturbance of previously undisturbed surface or subsurface land areas. For these types of surface or subsurface activities, the controls listed in Entergy's procedures would be implemented in accordance with the National Historic Preservation Act to ensure that existing cultural resources in the area are not disturbed until prior authorization is obtained from the State Historic Preservation Office, and, if applicable, the NRC as set forth in the site's Cultural Resource Protection Plan. This would also apply to archaeological, historical, or other cultural resources that may be inadvertently uncovered during ground disturbing activities.

6.1 Prehistoric Resources

Prehistoric resources, in general can be expected in areas that were once favorable for hunting and gathering activities. The terraces along the shoreline and high ground backing the terraces would have provided easy access to the range of plant and animal resources in the area. Indian Point has been documented to be the site of a minor Lenape village. Riverine resources, particularly in Lent's Cove, would have existed as early as the end of the last ice age and the area would have been attractive due to such resources. The terraces and high ground would have also provided a broad selection of plant and animal resources. The forager cultures, particularly the Paleo-Indian and Archaic cultures, would have found these conditions and resources extremely attractive. Later prehistoric groups probably also visited the area for hunting purposes, on a reduced scale. The shoreline would have been attractive to fishermen or clambers. Village period peoples would have preferred the more arable farmland on the southern part of the Point (around the present town of Verplanck) and later prehistoric sites in this area would be more oriented towards fishing and land side resources.

[REDACTED]

Page(s) withheld per 10 CFR § 2.390(a)(3)

6.2 Historic Resources

Indian Point was first visited by Henry Hudson in 1609. The mouth of Lent's Cove was the scene of the first killing of a Native American by the Dutch explorers. The point was purchased from the Indians in 1683 and homesteaded by the Verplanck Family.

[REDACTED]

The portion of the tract in Lent's Cove has been deeded to the Village of Buchanan, but was the location of a major boat landing, shipping facilities, second generation homestead, and Revolutionary War battle. The general area saw a great deal of quarrying and mining for a blast furnace on the property. A brickworks and other major developments through the nineteenth and twentieth centuries have also been located on the site. Much of this activity, however, has destroyed much of the earlier historical remains (and much of the prehistoric remains). A small portion of the wooded area [REDACTED] may contain less disturbed deposits and could contain both prehistoric and historical resources.

7.0 RECOMMENDATIONS

The majority of the property has been extensively or entirely disturbed by previous activity and construction. Evidence of probable prehistoric and historical archeological resources was found to be located on the property, including two probable prehistoric sites and one probable historical site. The value of the prehistoric and historical archeological resources remains to be determined. IP1 was the first commercial reactor in the U.S. The main control panel for the reactor has been removed and is now in the Smithsonian Collection.

Although there are no major refurbishment activities identified or planned during the IP2 and IP3 license renewal term, Entergy has established procedural administrative controls to ensure that environmental reviews are conducted prior to engaging in future construction or operational activities that may result in environmental impacts at the site, including impacts related to historic and archaeological resources. Therefore, it is not anticipated that prehistoric or historic resources will be affected by continued operations of IP2 and IP3.

In conclusion, the potential impact of continued operation of IP2 and IP3 on historic or archeological resources will be SMALL and mitigation measures are not being recommended for continuing operations at the site beyond implementation of Entergy's EN-EV-121 Cultural Resources Protection Plan whenever land disturbance is anticipated.

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Page(s) withheld per 10 CFR § 2.390(a)(3)

ATTACHMENTS

	NUCLEAR MANAGEMENT MANUAL	NON-QUALITY RELATED	EN-EV-121	REV. 0
		INFORMATIONAL USE	PAGE 1 OF 12	
Cultural Resources Protection Plan				

Title: **Cultural Resources Protection Plan**

Procedure Owner:	Rick N. Buckley / Corporate Environmental Chairman	
	(Print Name / Title)	
Approved:	<i>Ricky N. Buckley</i>	11/01/06
	(Procedure Owner Signature)	(Date)

Effective Date	EN Common	<input checked="" type="checkbox"/>	11/03/06	Effective Date Exception	ANO	01/01/07	PNPS	
	ENN	<input type="checkbox"/>			ECH		RBS	
	ENS	<input type="checkbox"/>			GGNS		VY	
					IPEC		W3	
					JAF		WPO	

Procedure Contains NMM REFLIB Forms: YES ☒ NO ☐

Basis Statement

This procedure provides a mechanism for protecting historical and archaeological areas located on Entergy's nuclear site properties.

Site and NMM Procedures Cancelled or Superseded By This Revision

ANO Procedure 1000.167, ANO Historical and Archaeological Preservation Program will be cancelled.

Process Applicability Exclusion (ENN-LI-100) / Programmatic Exclusion (ENS-LI-101)

All Sites: ☒ Specific Sites: ANO ☐ GGNS ☐ IPEC ☐ JAF ☐ PNPS ☐ RBS ☐ VY ☐ W3 ☐



	NUCLEAR MANAGEMENT MANUAL	NON-QUALITY RELATED	EN-EV-121	REV. 0
		INFORMATIONAL USE	PAGE 2 OF 12	
Cultural Resources Protection Plan				

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1.0 **PURPOSE**

- [1] Provides a mechanism to protect either existing or potentially existing cultural resources located at the Entergy Nuclear sites.

2.0 **REFERENCES**

[1] Regulatory References

- (a) National Historic Preservation Act (and amendments)

[2] Company References

- (a) NMM Procedure EN-EV-115. Environmental Reviews and Evaluations
- (b) NMM Procedure EN-IS-112, Trenching, Excavation and Ground Penetrating Activities

[3] ANO References

- (a) FTN Letter No. 6045-061, "Cultural Resources Issues, ANO
- (b) Commitment 1CAN090005, Reference P-17051, "Develop an administrative level environmental procedure to provide additional control over future land disturbances at ANO site"

[4] JAF References


- (a) Letter from Nancy Herter, New York State Office of Parks, Recreation and Historic Preservation, to T. A. Sullivan, James A. Fitzpatrick, dated April 27, 2006 (refer to Attachment C of License Renewal Environmental Report)

[5] PNPS References

- (a) Letter from Eric S. Johnson, Massachusetts Historical Commission, to Stephen Bethay, Pilgrim Nuclear Power Station, dated March 14, 2005 (refer to Attachment C of License Renewal Environmental Report)

[6] VYNPS References

- (a) 30 V.S.A. § 248, New Gas and Electric Purchases, Investments and Facilities; Certificate of Public Good

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2.0 cont


- (b) Letter from Jane Lendway, Vermont Division for Historic Preservation, to Gary Tucker, FTN Associates, LTD., dated October 17, 2005 (refer to Attachment C of License Renewal Environmental Report)

[7] W3 References

- (a) W3 Cultural Resources Protection Plan

3.0 **DEFINITIONS**

- [1] Disturbed Land Areas – Surface and/or subsurface land areas that were significantly disturbed during the construction phase of the site (i.e., plant's protected area).
- [2] Cultural Resources – Resources that include but are not limited to:
 - (a) Cemeteries, burial sites, funeral monuments, or other sites with human remains
 - (b) Historic buildings, structures, or building remains
 - (c) Ancient sites containing cultural artifacts such as pottery, tools, weaponry, and other implements
 - (d) Ritual artifacts
 - (e) Discarded materials (i.e. Indian mounds with shells and animal bones)
 - (f) Sites of historical significance to the community, state, or nation, such as battlegrounds, encampments, villages, etc.
 - (g) Traditional cultural properties.
- [3] Land-Disturbing Activities – Activities that involve grading, construction of buildings, excavations, reforestation, landscaping, placement of any fill or spoil or other terrestrial impact.
- [4] Undisturbed Land Areas – Surface and/or subsurface land areas that have not been disturbed either during the construction phase of the site or during current operations, or if there is uncertainty at the site about the degree of disturbance.

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4.0 **RESPONSIBILITIES**

- [1] Entergy Nuclear Environmental Focus Group - is responsible for maintaining, reviewing and interpreting this procedure.
- [2] Site Environmental Representatives - are responsible for:
 - (a) Conducting environmental reviews of land disturbance activities in accordance with this procedure to ensure either existing or potentially existing cultural resources are protected to the maximum extent practicable.
 - (b) Ensuring that the State Historic Preservation Office (SHPO) is notified for activities that may affect existing or potentially existing cultural resources, if required by specific state laws, SHPO, operating license conditions or site reporting procedures.
- [3] Site Departments – are responsible for complying with Sections 5.1 through 5.3 of this procedure.
- [4] Contract Managers and Contractors – are responsible for complying with Sections 5.1 through 5.3 of this procedure.

5.0 **DETAILS**


5.1 PRECAUTIONS AND LIMITATIONS

- [1] Land disturbing activities must be stopped immediately in the event that there is evidence of a historical or archaeological artifact and the SHPO notified for guidance prior to re-commencing land disturbing activities.

5.2 LAND DISTURBANCE OF UNDISTURBED AREAS

NOTE
If the land disturbance activity is occurring within the Protected Area Fence that encloses the power block area, then no further actions are required regarding this procedure.

- [1] Site Departments, Contract Managers and Contractors, for activities involving land disturbance in undisturbed areas are to:

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5.2 cont

- (a) Complete Section A of Attachment 9.1 to this procedure (Land Disturbance Environmental Review Form) and forward to the Site Environmental Representative for review.
- (b) Obtain approval from the Site Environmental Representative prior to the activity commencing.
- (c) Adhere to the management requirements identified in Section C of Attachment 9.1 (Land Disturbance Environmental Review Form), as applicable to the land disturbance activity.


[2] Site Environmental Representative, upon receipt of Attachment 9.1 (Land Disturbance Environmental Review Form), is to:

- (a) Contact SHPO for activities that may affect existing or potentially existing cultural resources.
- (b) Complete Section B of the Form and if applicable Section C.
- (c) If approved, return a copy of the completed Form to the requester.
- (d) If not approved, notify the requestor of the reasons for denying the approval.
- (e) Maintain copies of the required documents on file.
- (f) Conduct periodic visual observations of the area to ensure that any management requirements identified in Section C of Attachment 9.1 (Land Disturbance Environmental Review Form) are followed.
- (g) Ensure that mitigation measures are implemented as appropriate.

5.3 MODIFICATION/REMODELING OF CULTURAL RESOURCE STRUCTURES

[1] Site Departments, Contract Managers and Contractors, for activities involving modifications/remodeling to cultural resource structures are to:

- (a) Complete Section A of Attachment 9.2 to this procedure (Cultural Resource Structure Modification/Remodeling Review Form) and forward to the Site Environmental Representative for review.


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5.3 cont

- (b) Obtain approval from the Site Environmental Representative prior to the activity commencing.
 - (c) If applicable, adhere to the management requirements identified in Section C of Attachment 9.2 (Cultural Resource Structure Modification/Remodeling Review Form).
- [2] Site Environmental Representative, upon receipt of Attachment 9.2 (Cultural Resource Structure Modification/Remodeling Review Form) is to:
- (a) Contact SHPO to inform them of the activity.
 - (b) Complete Section B of the Form and if applicable Section C.
 - (c) If approved, return a copy of the completed Form to the requester.
 - (d) If not approved, notify the requestor of the reasons for denying the approval.
 - (e) Maintain copies of the required documents on file.
 - (f) Conduct periodic visual observations of the area to ensure that any management requirements imposed by SHPO are followed.
 - (g) Ensure that mitigation measures are implemented as appropriate.

5.4 ROUTINE SURVEILLANCES

- [1] The Site Environmental Representative should:
- (a) Conduct periodic environmental rounds to ensure that no unauthorized activities occur that could damage existing or potentially existing culturally protected resources.
 - (b) Notify the SHPO and the NRC if ground disturbing activities are discovered within an existing or potentially existing culturally protected resource area, if required by operating license conditions, SHPO or site reporting requirements.
 - (c) Obtain a certified archaeologist to conduct a damage assessment of the affected area, if deemed necessary.

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5.5 SPECIAL PROTECTION PROCEDURES

- [1] Should the site find it necessary to conduct any activities within a culturally protected area and if required by operating license conditions, SHPO or site procedures, the Environmental Site Representative should notify the SHPO and NRC in writing of the proposed activity. The notification should include, but not limited to:

- A description of the proposed activity.
- Description for the need for the activity.
- A map showing the location of the planned activity in relation the culturally protected areas.
- A demonstration for the need to perform the activity within the culturally protected area.


- [2] The NRC, after consultation with the SHPO, will advise the site whether or not a mitigation plan is required.

5.6 RECORDS

NOTE

If the cultural resources review is performed as a result of an EN-EV-115 review, then the forms generated via this procedure should be filed with the EN-EV-15 screening paperwork.

- [1] Site Environmental Representative should maintain the following documents on file:
- (a) Completed Land Disturbance Environmental Review Forms (Attachment 9.1 to this procedure).
 - (b) Completed Cultural Resource Structure Modification/Remodeling Review Forms (Attachment 9.2 to this procedure).
 - (c) Conversation and correspondence records involving the State Historic Preservation Office and/or NRC.
 - (d) Records of modification/remodeling activities associated with cultural resource structures.

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6.0 INTERFACES

- [1] NMM Procedure EN-IS-112, Trenching, Excavation and Ground Penetrating Activities
- [2] NMM Procedure EN-EV-115, Environmental Reviews and Evaluations

7.0 RECORDS

None

8.0 OBLIGATION AND REGULATORY COMMITMENT CROSS-REFERENCES

8.1 OBLIGATIONS AND COMMITMENTS IMPLEMENTED OVERALL

None

8.2 SECTION SPECIFIC OBLIGATIONS AND COMMITMENTS


None

8.3 SITE SPECIFIC COMMITMENTS

Step	Site	Document	Commitment Number or Reference
[1]	ANO	1CAN090005	P-17051

9.0 ATTACHMENTS

- 9.1 Land Disturbance Environmental Review Form (Typical)
- 9.2 Cultural Resource Structure Modification/Remodeling Review Form (Typical)

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ATTACHMENT 9.1 **LAND DISTURBANCE ENVIRONMENTAL REVIEW FORM (TYPICAL)**

SHEET 1 of 2

A. Land Disturbance Activity

1. Brief Description of Activity: _____

2. Amount of Land Involved:

<input type="checkbox"/>	<1 Acre
<input type="checkbox"/>	1 – 5 Acres
<input type="checkbox"/>	>5 Acres

3. Location of Affected Land Area (attach map also): _____

4. Expected Duration of Activity: _____

B. Environmental Review

1. Consultation with the State Historic Preservation Office Required: ☐ Yes ☐ No

2. SHPO Protection Measures Imposed: ☐ Yes ☐ No ☐ Not Applicable


3. Existing historical or archaeological sites: ☐ Yes ☐ No

4. Visual Walk-down of Land Area Required: ☐ Yes ☐ No

5. Date(s) of Visual Walk-down: _____

6. Potential historical or archaeological site(s) Identified during Walk-down:

☐ Yes ☐ No ☐ Not Applicable

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ATTACHMENT 9.1 LAND DISTURBANCE ENVIRONMENTAL REVIEW FORM (TYPICAL)
SHEET 2 of 2


C. Required Management Practices

Management Practice(s)	Yes	No	NA
Stop the activity if a potential historical or archaeological site is discovered or if an existing site is damaged.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Notify the Site Environmental Representative immediately in the event that a potential historical or archaeological site is discovered during the land disturbance activity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the event that a potential historical or archaeological artifact is discovered, do not resume the land disturbance activity until the Site Environmental Representative has performed an evaluation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Place a protective barrier around existing historic or archaeological site(s).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Notify the Site Environmental Representative immediately in the event that an existing historical or archaeological site is damaged during the land disturbance activity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Remarks: Potential evidence that a historical or archaeological site may exist would be the presence of pottery, glass, arrowhead, bones, tools, weaponry, wooden or metal structures, flakes, brick, mortar or plaster.

SHPO Protective Measures: _____

Approved By: _____ / _____
Signature Date

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ATTACHMENT 9.2 CULTURAL RESOURCE STRUCTURE MODIFICATION/REMODELING REVIEW FORM (TYPICAL)
SHEET 1 of 1

A. Modification/Remodeling Activity

- Description of Activity: _____

- Expected Duration of Activity: _____

B. Environmental Review

- SHPO Contacted: ☐ Yes ☐ No
- Date SHPO Contacted: _____
- SHPO Protective Measures Imposed: ☐ Yes ☐ No

C. SHPO Protective Measures (if applicable)

Approved By: _____ / _____
Signature Date