

Legend

- ★ BBNPP
- ▭ BBNPP Project Boundary
- Area of Disturbance
- Forest Cover (non-mitigation areas)
- ▨ Habitat Conservation
- ▨ Reforestation
- ▨ Natural Succession

Structures shown within LOD are proposed.

0.4 0.2 0 0.4 Miles

Figure 9.
BBNPP Project Boundary,
Post-construction with Reforestation,
Natural Succession and
Habitat Conservation Lands



NORMANDEAU ASSOCIATES
ENVIRONMENTAL CONSULTANTS
 400 Old Reading Pike, Bldg A, Suite 101 Stowe, PA 19464

date: 07/18/12
 prepared by: s.sherman
 project: 22648, 22932

rev. date: 08/17/12, 08/27/12
 prepared for: c.roche
 file name: Post-Construction

Appendix A

U.S. Fish and Wildlife Service Consultation

List of Enclosed Correspondence

1. Letter from Rod Krich, UniStar Nuclear Energy LLC, to David Densmore, USFWS, “Large Project Species of Special Concern Screen”, December 21, 2007.
2. Letter from David Densmore, USFWS, to Rod Krich, UniStar Nuclear Energy LLC, “USFWS Project #2008-0518”, January 18, 2008.
3. Letter from David Densmore, USFWS, to J. E. Price, UniStar Nuclear Energy LLC, “USFWS Project #2008-0518, Bell Bend Nuclear Power Plant”, March 26, 2008.
4. Letter from David Densmore, USFWS, to J. E. Price, UniStar Nuclear Energy LLC, “USFWS Project #2008-0518”, April 21, 2008.
5. Letter from David Densmore, USFWS, to Chief, Rules and Directives Branch Division of Administrative Services, U.S. Nuclear Regulatory Commission, “Environmental scoping process and Federally protected species for BBNPP site, July 10, 2009.
6. Letter from Terry L. Harpster, PPL Bell Bend LLC, to Pamela Shellenberger, USFWS, “Large Project Species of Special Concern Screen, September 20, 2010.
7. Letter from Terry L. Harpster, PPL Bell Bend LLC, to Carole Copeyon, USFWS, “Indiana Bat Roost Tree Survey Study Plan”, September 27, 2010.
8. Letter from Clinton Reilly, USFWS, to Laura Quinn-Willingham, Environmental Project Branch 2, Division of New Reactor Licensing, Office of New Reactors, U.S. Nuclear Regulatory Commission, “USFWS Project #2009-0501”, May 7, 2012.



December 21, 2007

Mr. David Densmore
U. S. Fish and Wildlife Service
Endangered Species Biologist
315 South Allen Street, Suite 322
State College, PA 16801

**SUBJECT: Large Project Species of Special Concern Screen
UniStar Nuclear Energy, LLC, Berwick, PA NPP-1 Project
Salem Township, Luzerne County, PA**

Dear Mr. Densmore:

UniStar Nuclear Energy, LLC is conducting an environmental evaluation for an approximately 2.6 square mile (1,642 acres) project area on the Susquehanna Steam Electric Station (SSES) site and adjacent properties in Salem Township, Luzerne County, Pennsylvania (Figure 1). The project area boundaries encompass the entire footprint of possible disturbance for the construction and maintenance of additional electric generation facilities under consideration for the site.

UniStar Nuclear Energy, LLC wishes to screen the project area for species of special concern under jurisdiction of the U. S. Fish and Wildlife Service. Please provide all current and historical information concerning the occurrence of Federally-listed and proposed threatened and endangered species; designated and proposed critical habitats; and any other ecological resources of special concern within the project area. This information may be used in future consultations with your agency under Section 7 of the Endangered Species Act.

In addition, please provide this information for a 0.5-mile buffer surrounding the project area. This latter screen is requested for the purpose of evaluating environmental impacts and compliance with Pennsylvania Department of Environmental Protection regulations (e.g., 25 PA Code Chapter 105.17). A PNDI search form is attached for your use.

If you have any questions or need additional information please contact George Wrobel at (585) 771-3535.

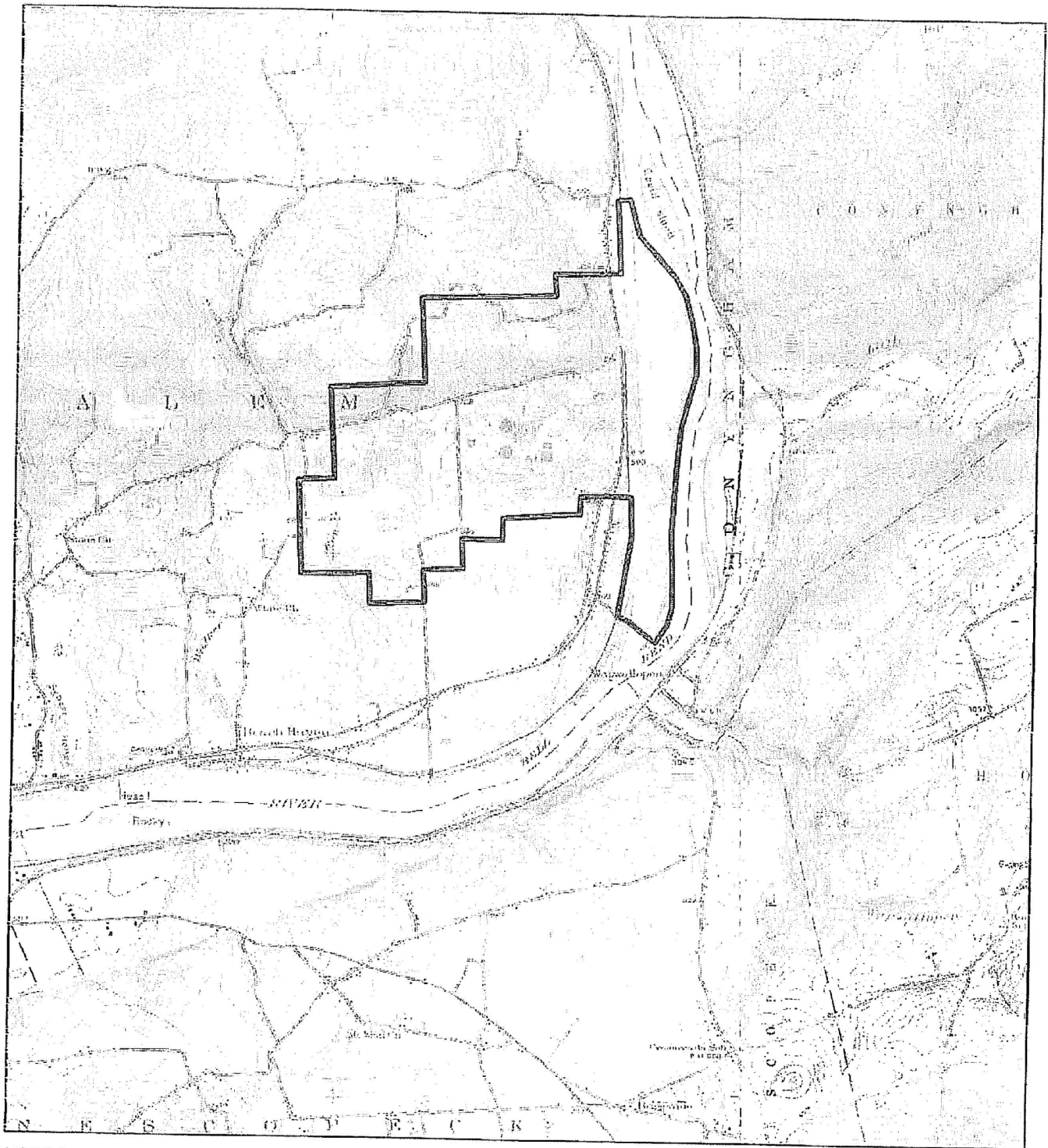
Thank you for your assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "Rod Krich".

Rod Krich
Senior Vice President, Regulatory Affairs

Enclosures Site Location Map, Figure 1
 PNDI Review Form



USGS Berwick, PA Quad
USGS Sybertsville, PA Quad



Figure 1.
Berwick, PA NPP-1



NORMANDEAU ASSOCIATES
ENVIRONMENTAL CONSULTANTS
300 Old Reading Pike, Bldg A, Suite 101, Stowe, PA 17484

date: 12/17/07
project: 21159.000
prepared by: s.sherman

checked by: k.maurice
project name: Areva
file name: 21159_site_location



Pennsylvania Natural Diversity Inventory
Project Planning & Environmental Review Form

This form provides site information necessary to perform an Environmental Review for special concern species and resources listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, the Pennsylvania Fish and Boat code or the Pennsylvania Game and Wildlife Code.

Applicant Information

Name ; UniStar Nuclear Energy, LLC
 Address: 750 E. Pratt Street, 14th floor, Baltimore, MD 21202-3106
 Phone Number: 410-470-5518 Fax Number: 585-771-3392

Contact Person Information - if different from applicant

Name: Mr. George Wrobel
 Address: same
 Phone Number: 585-771-3535 Fax Number: 585-771-3392

Project Information

Project Name: Berwick, PA NPP-1
 Project Locations: Lat N 41d 05m 11.54s Lon W 76d 09m 53.66s
 Municipality: Salem Township County: Luzerne
 Attach a copy of a U.S.G.S 7 1/2 Minute Quadrangle Map with Project Boundaries clearly marked.
 U.S.G.S. Quad Name: Berwick, PA and Sybertsville, PA

Project Description

Proposed Project Activity (including All earth disturbance areas and current conditions)

The Berwick, PA NPP-1 Project involves development of a combined license application (COLA) to the U.S. Nuclear Regulatory Commission (NRC) for potential construction and operation of a new nuclear powered steam electric plant in the vicinity of the Susquehanna Steam Electric Station. In the event a decision is made to develop the plant, associated activities would involve land clearing, grubbing, grading/excavation, and construction of plant and support facilities and structures; landscaping; and subsequent operation and maintenance of plant facilities and grounds. Land use of areas potentially disturbed consists predominantly of active/former farmland and forest and, to roadways, and natural vegetation (e.g., shrub-scrub).

Total Acres of Property: **1,642** Acreage to be Impacted: **780 (approximately)**

1. Will the entire project occur in or on an existing building parking lot, driveway, road, maintained road shoulder, street, runway, paved area, railroad bed, or maintained lawn? Yes No **X**
2. Are there any waterways or waterbodies (intermittent or perennial rivers, streams, creeks, tributaries, lakes or ponds) in or near the project area, or on the land parcel? If so, how many feet away is the project? Yes **X** feet NO
3. Are wetlands located in or within 300 feet of the project area? Yes **X** No If No. is this the result of a wetland delineation?

If you have a "PNDI Project Environmental Review Receipt" with potential impacts,, please send a receipt copy, this completed form, and a USGS Quad Map to the agency/agencies noted on the receipt. If you are unable to generate a PNDI Receipt because you do not have Internet access, complete this form, attach USGS Quad Map, and send them to your local DEP or County Conservation District. For review of a "Large Project," please send form and map to all the agencies listed below. See page 2 for more information.

Dept. of Conservation and Natural Resources
 Bureau of Forestry, Ecological Services Section
 400 Market St., PO Box 8552
 Harrisburg, PA 17105
 fax: 717-771-0271
 PA Game Commission
 Bureau of Land Management
 2001 Elmerton Avenue
 Harrisburg, PA 17110-9797
 fax: 717-787-6957

PA Fish and Boat Commission
 Natural Diversity Section
 450 Robinson Lane
 Bellefonte, PA 10828
 fax: 814-359-5175
 US Fish and Wildlife Service
 Endangered Species Biologist
 315 South Allen St., Suite 322
 State College, PA 16801
 no faxes please



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Pennsylvania Field Office
315 South Allen Street, Suite 322
State College, Pennsylvania 16801-4850

January 18, 2008

Rod Krich
UniStar Nuclear Energy, LLC
750 East Pratt Street, 14th Floor
Baltimore, MD 21202-3106

RE: USFWS Project #2008-0518

Dear Mr. Krich:

This responds to your letter of December 21, 2007, requesting information about federally listed and proposed endangered and threatened species within the area affected by the proposed nuclear powered steam electric plant located in Luzerne County, Pennsylvania. The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to ensure the protection of endangered and threatened species.

The project is within the range of the Indiana bat (*Myotis sodalis*), a species that is federally listed as endangered. Indiana bats hibernate in caves and abandoned mines during the winter months (November through March), and use a variety of upland, wetland and riparian habitats during the spring, summer and fall. Indiana bats usually roost in dead or living trees with exfoliating bark, crevices or cavities. Female Indiana bats form nursery colonies under the exfoliating bark of dead or living trees, such as shagbark hickory, black birch, red oak, white oak, and sugar maple, in upland or riparian areas.

Land-clearing, especially of forested areas, may adversely affect Indiana bats by killing, injuring or harassing roosting bats, and by removing or reducing the quality of foraging and roosting habitat. To determine whether the proposed project will affect Indiana bats, we will need additional project information, including site plans and a detailed project description, that describe how much forest disturbance will occur (area, tree species, and size classes).

This response relates only to endangered or threatened species under our jurisdiction, based on an office review of the proposed project's location. No field inspection of the project area has been conducted by this office. Consequently, this letter is not to be construed as addressing potential Service concerns under the Fish and Wildlife Coordination Act or other authorities.

To avoid potential delays in reviewing your project, please use the above-referenced USFWS project tracking number in any future correspondence regarding this project.

If you have any questions regarding this matter, please contact Pam Shellenberger of my staff at 814-234-4090.

Sincerely,

A handwritten signature in black ink, appearing to read "David Densmore", with a long horizontal flourish extending to the right.

David Densmore
Supervisor

March 26, 2008

Mr. David Densmore
U.S. Fish and Wildlife Service
Pennsylvania Field Office
315 South Allen Street, Suite 322
State College, PA 16801-4850

Subject: USFWS Project #2008-0518
Bell Bend Nuclear Power Plant
PPL Nuclear Development, LLC
Salem Township, Luzerne County, PA

Dear Mr. Densmore:

This letter responds to your request for additional information concerning the Bell Bend Nuclear Plant project that was made in your letter dated January 18, 2008. You specifically asked for a site plan and detailed project description indicating the amount of forest disturbance that will occur including area, tree species and size classes. These items are addressed below.

Site Plans

The following site plans are enclosed for your review:

1. Site Utilization Plot Plan Rev 2 showing the preliminary site layout.
2. Forest Disturbance Exhibit showing the project boundary, forest disturbance, wetlands and selected other features overlain on PAMAP color aerial photography.

Project Description

The Bell Bend Nuclear Power Plant project area encompasses approximately 1.04 square miles (665 acres) on the PPL Susquehanna Steam Electric Station (SSES) site and adjacent properties in Salem Township, Luzerne County, Pennsylvania. Project area boundaries and the entire footprint of possible disturbance for the construction, operation and maintenance of a new nuclear powered steam electric plant are shown on the enclosed site plans. In the event a decision is made to develop the plant, most of the land within the foot print of disturbance will be cleared, grubbed, graded and/or excavated for the construction of the plant, support facilities and other structures.

Mr. David Densmore

March 26, 2008

Page 2

Current land use of potentially disturbed areas consists predominantly of active farmland, former farmland that has succeeded to old field or scrub-shrub habitat and forest. Potential forest impacts resulting from all project construction activities are conservatively estimated to be 251 acres and were calculated using AutoCADD mapping software.

Environmental monitoring studies for the project area were initiated in 2007 and included the delineation of all wetlands onsite. The wetlands delineation study revealed that forested areas consist largely of upland and wetland mixed deciduous cover. Trees commonly found in wetland forest habitat include red maple (*Acer rubrum*), silver maple (*Acer saccharinum*) black gum (*Nyssa sylvatica*), pin oak (*Quercus rubra*) and river birch (*Betula nigra*).

Common upland trees include northern red oak (*Quercus rubra*), white oak (*Quercus alba*), black cherry (*Prunus serotina*), white ash (*Fraxinus americana*), shagbark hickory (*Carya ovata*), bitternut hickory (*Carya cordiformis*), black birch (*Betula lenta*), black walnut (*Juglans nigra*), black locust (*Robinia pseudoacacia*) and red maple. Most canopy trees fall in the range of 6-inches to 18-inches in diameter breast height (dbh). However, an estimated 10-percent to 20-percent of the forest cover may exceed this range.

If you have any questions or need additional information please contact Jerome Fields at (610) 774-7889.

Thank you for your assistance.

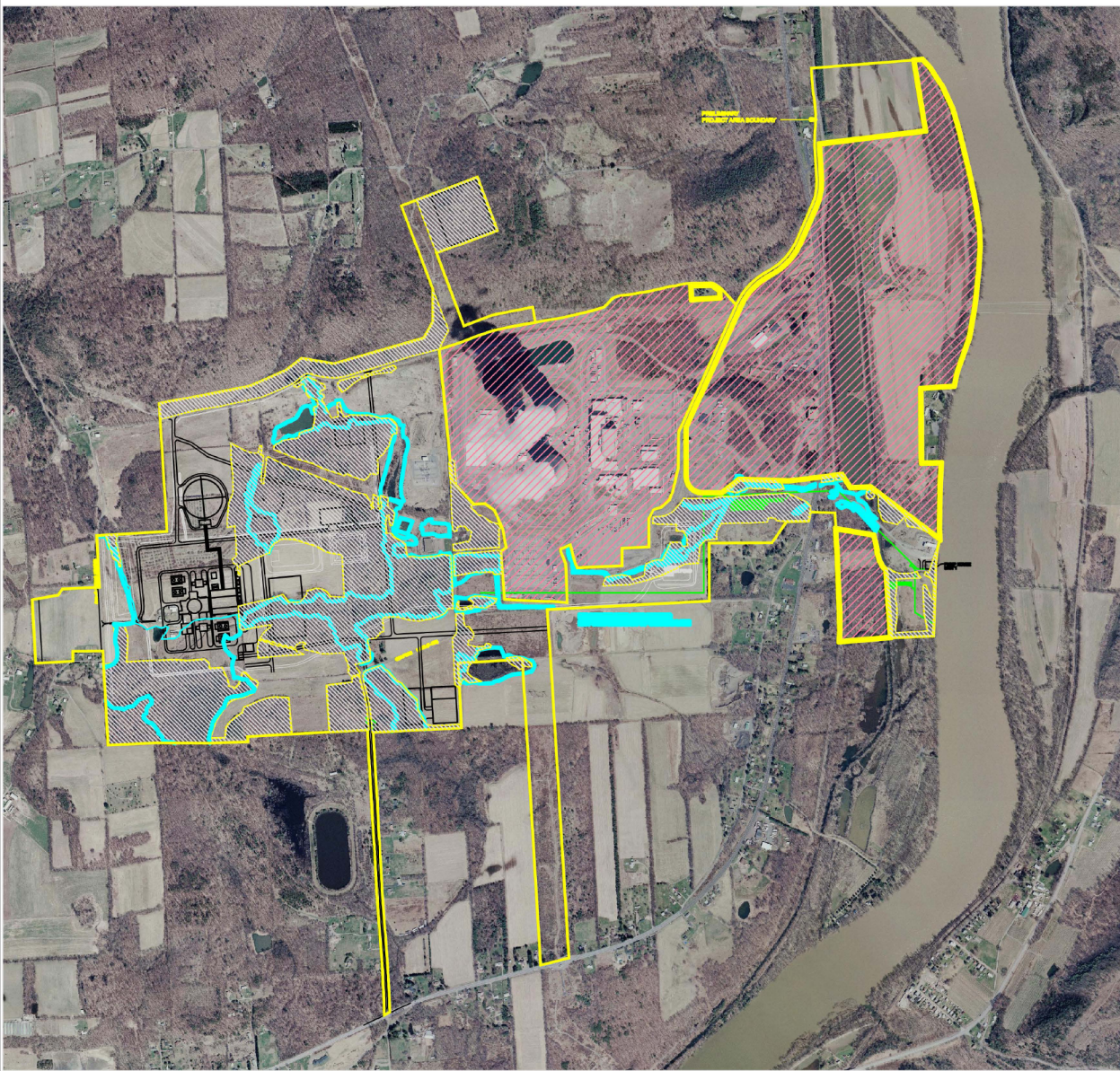
Sincerely,



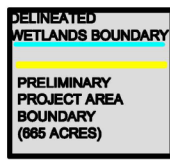
J. E. Price

Enclosures: 1) Site Utilization Plot Plan
2) Natural Features Plan

PROJECT: 2085 - DRAWING: 2085-forest-impact-3.dwg - LAYOUT: 2



AREA TO BE RETAINED BY PPL SSES
(498 ACRES)

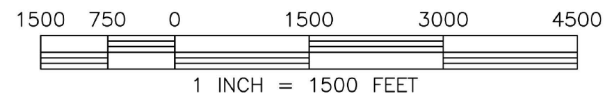


DELINEATED
WETLANDS BOUNDARY

PRELIMINARY
PROJECT AREA
BOUNDARY
(865 ACRES)



FOREST DISTURBANCE
(261 ACRES)



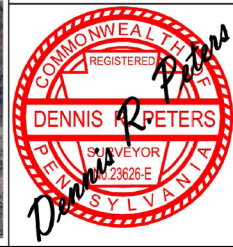
BELL BEND NPP

FOREST DISTURBANCE EXHIBIT

PREPARED FOR

UNISTAR NUCLEAR ENERGY SERVICES

SALEM TOWNSHIP - LUZERNE COUNTY - PENNSYLVANIA



PETERS CONSULTANTS, INC.
CONSULTING ENGINEERS & SURVEYORS

E-MAIL: Info1@petersconsultants.com
www.petersconsultants.com

100 Robbins Avenue Berwick, Pa. 18603 1023 Mulberry Street Berwick, Pa. 18603 29 East Main Street Bloomsburg, Pa. 17815

Scale: 1"=1500'	Dwn By: DHS	File No.:2085
Date: 03/17/08	Ck. By: DRP	Sheet 1 of 1



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Pennsylvania Field Office
315 South Allen Street, Suite 322
State College, Pennsylvania 16801-4850

April 21, 2008

J. E. Price
UniStar Nuclear Energy
750 East Pratt Street
14th Floor
Baltimore, MD 21202

RE: USFWS Project #2008-0518

Dear Mr. Price:

This responds to your letter of March 26, 2008, which provided additional information about the Bell Bend Nuclear Plant project located in Luzerne County, Pennsylvania. The project is within the range of the Indiana bat (*Myotis sodalis*), a species that is federally listed as endangered. The following comments are provided pursuant to the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) to ensure the protection of endangered and threatened species.

According to the additional information provided, which was requested by this office in a letter dated January 18, 2008, approximately 251 acres of forest habitat will be affected by the proposed project. Land-clearing, especially of forested areas, may adversely affect Indiana bats by killing, injuring or harassing roosting bats, and by removing or reducing the quality of foraging and roosting habitat. Therefore, due to the anticipated impacts of the project on forest habitat, and the project's proximity to a known Indiana bat hibernaculum, bat survey of the project area should be conducted between May 15 and August 15 by a qualified, Service-approved biologist (see enclosed list) using the enclosed *Indiana Bat Mist Netting Guidelines*. Survey results should be submitted to the Fish and Wildlife Service for review and concurrence.

In addition, if any natural caves or abandoned mines occur within the project area, it is possible that Indiana bats or other bat species may be using them during hibernation or potentially as summer roost sites. Entrances to these potential hibernacula could be intentionally or inadvertently closed or destroyed during activities such as land clearing, grading, fill disposal, mining, road construction or building construction. If bats are present within a cave or abandoned mine when this occurs, they will become trapped inside and perish. Even if bats are not present during the closure, they may be adversely affected when they return to their hibernaculum in the fall and find it closed. This will force them to expend energy looking for

another suitable hibernaculum during a time when it is crucial that they store up sufficient fat reserves for hibernation. Bats are at an increased risk of mortality when they enter hibernation with insufficient fat reserves, or are unable to locate a cave/mine with the suite of conditions (e.g., temperature, humidity, air flow) necessary for successful hibernation.

In order to determine whether this project will affect any potential Indiana bat hibernacula, the project area should be surveyed for cave and mine openings. All openings should be accurately mapped using a GPS unit. If potentially unstable mines (e.g., abandoned coal mines) occur in the project area, the openings of these mines should be evaluated using the enclosed *Protocol for Assessing Abandoned Mines/Caves for Bat Surveys*. The Pennsylvania Game Commission has developed this protocol to determine whether abandoned mines may serve as potentially suitable bat habitat. Following this initial mine opening assessment, a qualified bat surveyor (see enclosed list) should survey each potentially suitable opening, as well as the area in the immediate vicinity of these openings. Surveys should be carried out in accordance with the enclosed survey protocol. Please submit a copy of the survey results to the Service and the Pennsylvania Game Commission for review and concurrence.

If any caves or stable hard rock mines (e.g., limestone mines) occur in the project area, they should be surveyed for hibernating bats during the winter. Interior winter hibernacula surveys should be coordinated with the Pennsylvania Game Commission. Survey results should be submitted to the Service for review and concurrence. If caves or hard rock mines cannot be safely entered, their openings should be surveyed as described above.

Survey results should be submitted to this office for review. Should Indiana bats be found during any survey, further consultation with the Service will be necessary, including the submission of detailed project plans, and an analysis of alternatives to avoid and minimize adverse effects.

Additionally, removal of trees and forested areas within the project area could result in the direct take of roosting Indiana bats, which could be injured or killed when trees are cut. Regardless of whether Indiana bats are captured during your mist net survey, we nonetheless recommend that any tree-cutting activities be carried out from November 16 to March 31, during which time bats are hibernating. Studies have found that forested areas located within five miles of hibernacula provide important foraging and roosting habitat for Indiana bats, especially during the fall and spring, when bats are building up their fat reserves prior to and after hibernation.

If any tree-cutting is necessary from April 1 to November 15, the following trees greater than or equal to five inches diameter breast height (d.b.h.) should not be cut or physically disturbed (e.g., while harvesting any adjacent trees) in order to avoid killing or injuring roosting Indiana bats: 1) dead or dying trees and snags (including lightning struck trees) with exfoliating bark; 2) live trees (such as shagbark and shellbark hickory) which have exfoliating or defoliating bark in the trunk or branches; and 3) trees or snags that have characteristics typical of roost sites for Indiana bats (i.e., have exfoliating or defoliating bark, or contain cracks, crevices, or holes that could be used by the species as a potential roost), especially trees with sun exposure to the trunk. Tree-clearing from November 16 to March 31 may proceed without these restrictions.