PPL NUCLEAR DEVELOPMENT

# PPL Bell Bend Nuclear Power Plant

Luzerne County, Salem Township, Pennsylvania

## 401 Water Quality Supplement

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JPA Sections
Items 1-18

June 2012

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## Pre□a□e

Information contained in this Supplemental Information package was compiled to support the proposed Bell Bend Nuclear Power Plant Clean Water Act Section 401 Water Quality Certification. Specific documents have been extracted from the Joint Permit Application (JPA) Rev 1 submittal dealing with water quality issues associated with plant construction and operation. Pertinent source documents used in the preparation of the NRC Combined Operating License Application (COLA) have also been included where appropriate. In addition, all SRBC water withdrawal and consumptive use applications, as well as those applications associated with a PPL Generation Pooled Asset approach to meet corporate consumptive water use needs, are provided. All associated studies and reports supporting PPL's conclusion that water quality impacts are small and infrequent or can be successfully mitigated are provided. Finally, this supplemental information package includes all relevant correspondence between PPL Bell Bend, LLC and the SRBC, ACOE, PAFBC, PADEP, and EPA.

The intent of the 401 Water Quality Certification is to ensure that the project will comply with state water quality standards in order to protect existing and designated stream uses. The 401 Certification covers both the construction and operation of the proposed project. Conditions of the 401 Certification become conditions of the Federal permit or license.

Section 401 of the Clean Water Act requires that any discharge into the navigable waters receive a certification from the State in which the discharge originates, and that the discharge complies with the applicable provisions of Sections 301, 302, 303, 306, or 307 of the federal Clean Water Act. The 401 Water Quality Certification that is provided will therefore set forth effluent limitations, monitoring requirements, and other additional limitations necessary to assure that the BBNPP will comply with any applicable limitations, standards of performance, prohibitions, effluent or pretreatment standards, and with any other appropriate requirements of State law set forth in such certification.

## □u□□le□ ent to t□e Pro□e□t □e□□ri□tion

(Summary of water and related issues)

### □□ Pro□e□t □u□ □ ary

PPL Bell Bend, LLC (PPL) proposes to construct a new nuclear power plant (BBNPP) at a site adjacent to the existing Susquehanna Steam Electric Station (SSES) in Salem Township, Luzerne County, Pennsylvania. The purpose of the BBNPP is to generate 1,600 MWe of nuclear baseload electrical supply to address the growing demand for electricity in the PJM Interconnection, LLC market area. PPL is in the process of designing, siting and licensing the new nuclear facility, and the Joint Permit Application (JPA) that was submitted to the PADEP and ACOE supports the required permitting for the unavoidable encroachments and obstructions to Waters of the Commonwealth and Waters of the United States. These unavoidable impacts will affect the North Branch of the Susquehanna River (NBSR), adjacent wetlands, and an unnamed tributary, as well as Walker Run (a second order tributary to the NBSR), its tributaries, and wetlands within the Walker Run watershed.

The Project Boundary consists of approximately 2,055 acres in Luzerne County, Pennsylvania, near the west bank of the NBSR, approximately 5 miles northeast of Berwick, Pennsylvania. Of these 2,055 acres, approximately 687 acres will be altered to support construction.

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Throughout the site selection and planning phase for the BBNPP project, steps were taken to avoid and minimize environmental impacts to wetlands and streams. PPL has advanced numerous iterations of the layout and design of BBNPP with the goal of avoiding wetland and stream features. Initial BBNPP layouts included possible impacts to wetlands and streams totaling over 100 acres. In subsequent design iterations direct impacts were reduced to approximately 60 acres in 2008 and then to approximately 30 acres in 2009. In late 2009, a decision was made to move BBNPP substantially north (approximately 900 feet) to an area with fewer wetlands.

Following the major shift in the project location additional adjustments were then made to decrease the size of the required temporary and permanent facilities, and to maximize the amount of undisturbed vegetation. These additional efforts resulted in the reduction of permanent impacts from approximately 10 acres to less than 2 acres of permanent wetlands impacts requiring mitigation, the majority of which is associated with the cooling water intake system (CWIS).

Total wetland and stream impacts based on PADEP standards are:

- Permanent Impacts: 1.25 acres of wetlands and 742 LF of stream
- Temporary Impacts: 0.90 acres of wetlands and 317 LF of stream
- Permanent Palustrine Forested Wetland Conversion: 9.00 acres

Total proposed mitigation for these impacts is the creation of 8.23 acres of wetlands, 2213 LF of stream creation and enhancements to improve primary wetland and stream functions and values.

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Preconstruction and construction stormwater discharges will be managed through the issuance of an NPDES Individual Permit for Discharges Associated with Stormwater during Construction Activities. Stormwater controls are designed so that there is no increase in surface runoff between pre and post construction. This is accomplished by the use of numerous on-site infiltration basins and recommended BMPs to minimize any potential physical, chemical or biological impacts resulting from stormwater quantity and quality. It includes the construction sequence and erosion and sediment controls that will be implemented. Pre and post construction stormwater discharges will be incorporated in the NPDES permit.

All water for the construction use will be provided by the Pennsylvania American Water Company – Berwick (PAWC) such as the concrete batch plant for mixing, curing and washdown, dust control and hydrostatic testing, and backfill compaction. This water will also be used for potable and sanitary purposes during construction and operation and plant humidification during operation. Use of PAWC groundwater is regulated by an SRBC Approval By Rule permit. PPL Bell Bend filed an application for this permit with the SRBC on March 21, 2012. (SRBC Pending Number NOI-2012-0104).

During construction, passive dewatering will be required for the power block and cooling tower basins. This water will be routed to the stormwater infiltration system. Active dewatering will be necessary for a 2 year period to construct the ESWEMS pumphouse and pond. To mitigate the groundwater and wetlands impacts, a slurry wall will be placed around the area to be dewatered with the water sent to a settling pond from which it will be discharged back to Walker Run Tributary No.1, and if necessary, spray irrigation of the adjacent wetland will occur. A ground water withdrawal application was filed with the SRBC on January 5, 2012 (SRBC Pending Number 2012-007) and a mitigation plan to ensure protection of surrounding wetlands and groundwater levels was developed by PPL Bell Bend and submitted with the JPA. The slurry wall will be perforated at the end of the ESWEMS pond construction in order to restore the area, approximating original conditions.

The following proposed work will result in wetland or stream impacts to jurisdictional wetlands and watercourses associated with the construction of the BBNPP.

- Fill placement for the purpose of facility construction represents direct impacts to jurisdictional wetlands and waters.
- Fill placement within wetlands and stream channels is required for construction of the Cooling Water Intake System (CWIS), grading around the power block, switchyard expansion, and bridge supports.
- Temporary and/or wetland conversion impacts result from bridge construction, excavation in wetlands to bury the intake and blowdown lines, as well as construction dewatering.

- Forest clearing needed to construct bridge and utility crossings will also result in some permanent palustrine forest wetland conversions due to the loss of wetland functions.

The Circulating Water System (CWS) and Essential Service Water System (ESWS) are the two major cooling systems used by the BBNPP. The planned CWS is a closed-cycle, wet cooling system using two natural draft cooling towers to dissipate waste heat during station operation. The ESWS is closed-loop and is used for normal operations, refueling, shutdown and cool down, anticipated operational events, design basis accidents, and severe accidents. Make-up water for these systems is needed to compensate for evaporative losses, drift, and blowdown discharge. The NBSR will provide normal makeup to the CWS and ESWS system via the Bell Bend Intake Structure. Makeup to the ESWS during design basis accidents and severe accidents is provided from an on-site pond. No makeup from the NBSR is required during these events. This use of NBSR water (both withdrawal and consumptive use) is subject to separate regulatory review and approval by the Susquehanna River Basin Commission (SRBC). Applications for water withdrawal and consumptive use were filed with the SRBC on May 13, 2009, supplemented on October 9, 2009, and amended on January 14, 2011.

As part of the intake structure construction, dredging of the NBSR will be required to create a forebay. Dredging will involve installation of a circular cofferdam. The area within the cofferdam will be dewatered and dredged by hydraulic or mechanical methods, and the existing shoreline will be excavated. After this work is completed the cofferdam will be removed allowing the forebay area to flood. Periodic maintenance dredging of the NBSR will be required to maintain adequate depth of the forebay area.

It is expected that approximately 17,000 to 25,000 cubic yards (c.y.) of in-place NBSR bottom substrate will be removed to accommodate the proposed intake and blowdown in-water structures. Dewatering of bottom substrate will occur in a temporary dredge material pond. Discharge from this pond is back to the NBSR. Testing was completed within the dredge envelope to determine suitability for disposal as clean fill. Dredge material will be disposed of within the BBNPP site at one or more of the laydown areas to the north and southeast of the BBNPP power block, or on lands at the perimeter of the facility where it may be used as non-structural fill. The capacity of these areas is more than sufficient to accommodate the expected 24,000-35,000 c.y. volume. (This assumes a bulking factor of 1.4 to account for the expansion of the bottom sediment when removed.)

The blowdown diffuser pipe will extend approximately 325 ft from the shoreline. A temporary cofferdam confining an area approximately 50 feet wide by 350-foot long, extending into the river will be used during installation of the blowdown line to dewater the area and contain sediment.

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a) Consumptive Use

Consumptive use is any process by which water withdrawn from the basin is not returned undiminished in quantity. Under SRBC policy the user must find

replacement water for the quantity consumed. PPL Bell Bend has applied to the SRBC to consumptively use up to 28 MGD (43 cfs) from the NBSR. A Corporate Asset Pool approach to compensate for water consumption has also been proposed. A formal Asset Pool application is expected to be submitted to the SRBC by the end of June 2012. Applications for use of water from Holtwood Hydroelectric Station, and Rushton Mine as proposed components of the Asset Pool have been submitted to the SRBC. An application to include PPL Montour's Lake Chillisquaque in the Asset Pool is also expected to be filed with the SRBC by the end of June 2012.

b) Surface Water Withdrawal

Surface water withdrawals in excess of 100,000 gpd based on a maximum 30-day average require SRBC review and approval. BBNPP has requested approval to withdraw a maximum 42 mgd (58.2 cfs). This is about 5% of the river flow at Q7-10 (843 cfs) low flow conditions. PPL Bell Bend has examined the potential impact of this withdrawal and associated consumptive use on the receiving stream. Certain additional studies are planned for the summer of 2012. These studies concern the presence/absence of freshwater mussel Species of Concern and potential water quality impacts on Young-of-the-Year smallmouth bass. The results of these studies will be filed for inclusion in the project record by September 2012.

c) Intake/Discharge structures

Maintenance of the intake and discharge will be required at regular intervals of 18 to 36 months. Maintenance dredging is expected to be required every 5 to 10 years. Mechanical dredging methods used at BBNPP will likely include a combination of a barge mounted excavator supplemented as needed with a crane operated clamshell bucket or excavator driven cable arm bucket. This alternative has been selected based upon its overall efficacy in working under the water depths and conditions present, and for protection of the environment and acceptability to regulatory agencies. ACOE authorization for BBNPP through the 404 permit would include provisions for these activities to occur for a period of 10 years.

To ensure the protection of aquatic resources and water quality during the dredging and return of dewatering fluid to the Susquehanna River, a monitoring program will be implemented to monitor water quality when dredging within the cofferdam cannot be completed under dry conditions, or when dewatering fluid is introduced to the river. Turbidity monitoring 10 feet downstream of the point of discharge will be initiated prior to starting fluid discharge and continued every 3 hours during dredging/dewatering activities. The threshold of exceedance for turbidity is proposed to be 25 nephelometric turbidity units (NTU) above background turbidity observed in the Susquehanna River at the upstream SSES Intake Structure. Background turbidity will be established daily by sampling at this location prior to initiation of dredging or return of dewatering fluid. If turbidity is found to be greater than 25 NTU above background, mitigative actions will be initiated and the frequency of turbidity monitoring increased. Potential mitigative actions for turbidity exceedances include stopping or decreasing the rate of dredging or fluid discharge or increasing the residence time of the water in the

settling basin or tanks allowing for a longer period for fines to settle out. The turbidity monitoring frequency will increase to every half-hour after an exceedance is noted and return to every 3 hours once turbidity has dropped below 25 NTU above background.

d) Impingement/Entrainment

Surface water withdrawals can result in the impingement of fish fry and eggs and the entrainment of fish and macroinvertebrate species. Final design of the intake structure will be compliant with CWA best technology available (BTA) standards for impingement and entrainment (EPA Phase II, Track 1) that currently includes an intake velocity of less than 0.5 fps at the intake screens.

e) Water Treatment – Chemical Additions and Biocides

Water treatment is required for both influent and effluent water streams.

The Circulating Water Treatment System provides treated water for the CWS and consists of three phases: makeup treatment, internal circulating water treatment and blowdown treatment. Makeup treatment will consist of a biocide (i.e., sodium hypochlorite) injected into Susquehanna River water influent at the BBNPP Intake Structure to minimize microbiological growth and control fouling in service water piping. Treatment for internal circulating water components (i.e., piping between the cooling towers and condensers) may utilize existing power industry control techniques consisting of intermittent chlorination for no more than two hours per day, acid addition for alkalinity and pH control, and the addition of scale and corrosion inhibitors. Treatment will improve makeup water quality and allow for increased cycles of concentration in the cooling towers. The use of water treatment chemicals will be regulated under a National Pollutant Discharge Elimination System (NPDES) discharge permit. Blowdown treatment will depend on water chemistry, but is anticipated to include the application of a dechlorination chemical (i.e., sodium bisulfite) at the Combined Waste Water Retention Pond outlet to reduce the effluent concentration of residual chlorine.

The RWSS Water Treatment System provides treated water for the ESWS and power plant makeup, including the Demineralized Water Distribution System and the Fire Water Distribution System. Raw water from the Susquehanna River is pumped from the Bell Bend intake pumphouse, which is shared with the CWS intake pumps, to the Water Treatment Building, and then filtered to remove suspended solids. Dual media filters comprised of silica sand and anthracite will be used to treat the raw Susquehanna River water. Raw water makeup to the RWSS at the intake pumphouse will receive the same treatment as described above for the CWS. Zebra mussels have been observed along the North Branch of the Susquehanna River, therefore chemical treatment may be required for their control.

Filtered Susquehanna River water from the RWSS will receive additional treatment from the Demineralized Water Treatment System, which provides demineralized water to the Demineralized Water Distribution System. During normal operation demineralized water is delivered to power plant consumers. In

addition to meeting secondary and primary water chemistry specifications for the U.S. EPR, treatment techniques will meet makeup water treatment guidance set by the Electric Power Research Institute, and may include reverse osmosis, ion-exchange demineralization, and the addition of corrosion inhibitors.

Waste water generated by the plant during all modes of operation will be managed by the Liquid Waste Storage System and the Liquid Waste Processing System. The Liquid Waste Storage System collects and segregates incoming waste streams between radioactive and non-radioactive sources, provides initial chemical treatment of those wastes, and delivers them to one or another of the processing systems. The treated waste water is returned to the Liquid Waste Storage System for monitoring and eventual release. Chemicals used to treat waste water for both systems include sulfuric acid for reducing pH, sodium hydroxide for raising pH and an anti-foaming agent, complexing agent and/or precipitant for promoting settling of precipitates.

The Potable and Sanitary Distribution System will utilize municipal water supplied by PAWC. PAWC will deliver water that meets the Commonwealth of Pennsylvania's potable (drinking) water program and the standards of the U.S. EPA for drinking water quality under the National Primary Drinking Water Regulation (NPDWA) and National Secondary Drinking Water Regulation (NSDWA). The system will be designed to function during normal operation and outages (i.e., shutdown).

Sanitary waste water from the plant will be discharged to the Berwick Area Joint Sewer Authority via a lift station that will pump sanitary waste to a sewer main off U.S. Route 11 on Confers Lane.

Effluents from all BBNPP operational water treatment systems and any point source discharges to the Susquehanna River will meet chemical and water quality limits established in the National Pollutant Discharge Elimination System (NPDES) permit. Similar to SSES, those discharges receiving stormwater and low volume waste streams are expected to meet prescribed pH, Total Suspended Solids and Oil & Grease effluent standards. While stormwater from SSES goes to Lake Took-A-While BBNPP stormwater runoff is proposed to be conveyed in a closed drainage system consisting of inlets and pipes that ultimately outlet to a total of fourteen (14) underground and three (3) aboveground infiltration and detention basins. The stormwater from the intake area, will be discharged to the Susquehanna River. Similar to SSES, BBNPP will follow Best Practical Technology (BPT) standards by installing oil and grease separators on the low volume waste sources. Cooling tower blowdown will be expected to meet pH, Free Available Chlorine, Total Chromium and Total Zinc effluent standards. Chlorine discharges are expected to be limited to a maximum of 2 hrs per day. No water quality based limits for toxics are expected.

Based on the recent SSES NPDES permit renewal, low volume waste streams consistently had pH values in the 6.0 to 9.0 range, Total Suspended Solids less than 4.0 mg/l and Oil and Grease values less than 5 mg/l. Cooling Tower blowdown pHs ranged from 7.5 to 8.8, Total Suspended Solids averaged 39 mg/l with a maximum of 73 mg/l, Total Residual Chlorine was less than 0.05 mg/l, Total Chromium was an average 0.001 mg/l and a maximum of 0.003 mg/l and

Total Zinc was an average of 0.014 mg/l and a maximum 0.017 mg/l. Discharges from BBNPP are expected to be consistent with these values.

Chesapeake Bay nutrient monitoring is not required at SSES and the same is expected for BBNPP. The discharge concentrations of nutrients would only be concentrated levels of nutrients from the intake water, therefore there is no nutrient loading expected from BBNPP. It is anticipated that BBNPP will be listed by the Pennsylvania Phase I Chesapeake Watershed Implementation Plan (WIP), Table B2-Nonsignificants, as a non-significant industrial discharger.

f) Susquehanna River Total Maximum Daily Loads (TMDL's)

The NBSR has been designated as an impaired water for metals and PCBs under Section 303(d) of the CWA. The metals impairment results from drainage from abandoned coal mines in the region. PADEP was required to develop Total Maximum Daily Loads (TMDLs) for each pollutant, specifying a pollutant budget that meets the state water quality standards and allocates pollutant loads among pollutant sources in the watershed. The TMDL that was prepared by PADEP addresses the three primary metals associated with abandoned mine drainage (iron, manganese, aluminum) and pH.

The closest calculated TMDLs are for WQN302 – Susquehanna River at State Correctional Institution Bridge in Retreat approximately 8 miles north of the proposed BBNPP. Sampling data shows pH meets water quality standards at this location. Allowable discharge levels at this location are:

| | Concentration (mg/l) | Load (lbs/day) |
|---|---|---|
| Aluminum | 0.07 | 6,282.30 |
| Iron | 0.17 | 14,072.54 |
| Manganese | 0.14 | 11,883.01 |

Actual TMDL allowable concentrations and daily loadings for BBNPP will need to be calculated by the PADEP at time of the NPDES operating permit review. Based on discharges at the Susquehanna SES, BBNPP would be able to fully comply with any concentrations and loading requirements established by the PADEP under the NPDES operating permit.

Similar to the metals, a TMDL for PCBs has been established. Fish in the Susquehanna River were found to be bioaccumulating levels of PCBs that because of long-term, unrestricted consumption could potentially lead to human health problems. Consumption advisories are currently in place for bottom feeding fish, walleye and smallmouth bass. The TMDL of PCB in the Susquehanna River is 0.0014266 pounds per day. Current implementation of the TMDL is through the ban on use of PCBs and natural attenuation. Progress in meeting the TMDL will be evaluated by sampling fish species once every five years. The consumption advisory will remain in place until the water quality criterion is achieved. Production of PCBs was banned in the United States in 1979 though continued use of existing equipment was allowed in a "totally enclosed manner". No PCB or PCB-containing equipment will be installed at BBNPP, therefore, no PCBs will be released.

g) Thermal discharge

Waste heat is regarded as a thermal pollutant and is regulated in much the same way as chemical pollutants under the NPDES program. The BBNPP multi-port diffuser discharge system is designed to minimize the potential impact of the thermal plume as it enters the Susquehanna River. The diffuser is located in a pool at a depth of at least 10 ft below the low water surface elevation. The subsurface diffusers create rapid mixing of the thermal effluent with ambient river currents. The rate of discharge to the river largely determines plume size and shape. However, the areal extent of the plume is predicted to be minimal under normal and extreme river and operating conditions.

h) Other Project Considerations

The Indiana Bat is a federally endangered species with known hibernacula in the vicinity of the BBNPP site. No Indiana Bats were caught during bat mist surveys or acoustic monitoring completed within the project boundary. PPL is working with the U.S. Fish and Wildlife Service to minimize the risk of potential impacts and to develop a mitigation strategy.

Project impacts to the other protected species are expected to be minimal. Two protected mussel species were detected; one Green Floater was collected in the NBSR during macroinvertebrate studies and numerous Yellow Lampmussels were collected during a separate mussel survey. In addition, Pennsylvania Natural Diversity Index (PNDI) search results included two protected butterfly species which could be present within the project boundary. Proposed project mitigation as further discussed in Section 5 below would be expected to offset any impacts to these species.

With respect to cultural resources, a Cultural Resources Management Plan has been prepared and approved by the PHMC. Cultural resources on-site will be minimally affected by site clearing, grading, and excavation. PPL will continue to coordinate with the PHMC on cultural resources to ensure that all clearances are obtained from PHMC prior to commencing work on BBNPP.

i) Recreational Considerations

Recreational opportunities in the NBSR in the area of the SSES and proposed BBNPP intake and discharge structures are limited to boating and fishing. Construction of the BBNPP project is not expected to impact these existing uses, and as a result, no mitigation for these activities is proposed.

Most recreational opportunities associated with the BBNPP project incorporate the PPL Susquehanna Riverlands. The Riverlands is about 1200 acres on either side of the Susquehanna River that is jointly owned by PPL Corp and Allegheny Electric Cooperative, Inc. About 401 acres of the Riverlands is within the BBNPP project boundary.

Key features at the Susquehanna Riverlands within the project boundary include:

□e□reation□A recreation area on the west side of the river is ideal for picnicking with areas for families and groups. Hiking trails, a ball field, volleyball net, and a playground offer opportunities for recreation. There is even an imaginary journey through the solar system on the "Planet Walk."

**Fi□□ing□**Lake Took-A-While is prime habitat for largemouth bass and other species of fish. Boating is allowed, but no gasoline engines are permitted.

**□n□iron□ ental □rogra□ □□**A naturalist conducts programs year-round for the public.

**□i□erland□ □ature □enter**. Visitors can get a close look at some of the area's wildlife, learn about wetlands and the river, and enjoy nature programs. The nature center is located in the Susquehanna Energy Information Center.

Most facilities are accessible to people with physical limitations.

**□ etland□ □ature □rea□**Located just south of the recreation area, this 100-acre tract of riverine forest, marsh, swamp and vernal pools has been set aside as an area for nature study and education. Three trails wind throughout past points of natural and historical interest. Wetlands was designated an "Urban Wildlife Sanctuary" in 1988. Hunting, fishing, trapping and pets are prohibited here□

Future recreational enhancements include:

**□ort□ □ran□□ Penn□yl□ania □anal** - The historical alignment of the North Branch Canal through the Riverlands has been interrupted where the BBNPP intake structure is designed to be. Currently the base flow in the canal is diverted over a weir into a heavily incised man made channel and into the North Branch of Susquehanna River. The proposed Riverlands Mitigation consists of hydraulically re-connecting the North Branch Canal, restoring the original tow path, and repairing and maintaining the existing control structure that supports the Susquehanna Riverlands Wetlands Nature Area. A walking path will be established on the restored tow path of the historic North Branch Canal expanding the hiking opportunities within the Riverlands.

**Pu□li□ □utrea□□** – As part of its Indiana Bat Biological Evaluation and Management Plan a module on the life history, importance and protection of the Indiana Bat has been proposed as an addition to on-going environmental education programs conducted by PPL naturalists. Information on White Nose Syndrome, as well as the efforts by PPL to avoid, minimize, and mitigate potential impacts to Indiana Bat habitat within the BBNPP project area has been proposed to be added to the existing year-round environmental education programs at the Susquehanna Energy Information Center. This program will seek to foster an appreciation among the general public for the environmental challenges facing both Indiana Bats and bats in general, as well as programs to protect bats and conserve bat habitat.

## □□ □n□□ite □ itigation

The following three on-site, in-kind mitigation projects are proposed to compensate for impacts to jurisdictional waters as part of the BBNPP mitigation strategy.

1. Implement a stream and floodplain restoration project on two reaches of Walker Run creating and enhancing wetlands, improving stream functions, and improving wild trout habitat as well as mitigating for permanent stream impacts.
2. Remove a section of Confers Lane, which is to be abandoned, creating additional wetlands and restoring a hydrologic connection between two EV wetlands.
3. Restore the North Branch Canal, enhance wetlands at the PPL Riverlands near the proposed intake structure, and extend the existing recreational trail system.

As a result of these projects, 6.8 ac of wetland will be enhanced, 8.23 ac of wetland will be created, and 2,213 ft of stream will be created or enhanced. The mitigation projects will also compensate for indirect impacts to wetland functions and values. Forested wetlands created or converted will total 14.60 ac, exceeding the amount cleared. Where wetland plantings do occur, e.g. Walker Run mitigation, plantings will be made to create forage and habitat for the two state Species of Concern, the Baltimore Checkerspot and Mulberry Wing butterflies.

In addition, PPL will mitigate for temporary impacts resulting from construction dewatering. Mitigation measures will include the introduction of water to affected wetlands from a storage reservoir constructed to store pumped groundwater. A temporary spray irrigation system will apply water to the wetlands as needed to maintain pre-construction hydrologic conditions. Daily wetland monitoring will be conducted during construction to allow real-time flow corrections to maintain conditions reflecting the established baseline.

A multi-faceted Indiana Bat mitigation plan is proposed to compensate for lost potential habitat resulting from the tree clearing needed to support facility construction and grading. The mitigation plan will focus on ways to create, improve, and protect on- and off-site Indiana Bat habitat. The mitigation plan is being developed in conjunction with the U. S. Fish and Wildlife Service and other commenting agencies.

A Cultural Resources Protection Plan has been prepared along with a site specific protection plan for 36LU288. The site protection plan has been approved by SHPO.

A site management plan for control and limiting the spread of Invasive Species in areas to be disturbed will be implemented. Traditional management techniques will be used involving:

- Cutting
- Selective Herbicide application,
- Controlled plant disposal

- Avoidance of unintended ground disturbance, and
- Replanting native species.

Monitoring of disturbed areas for invasive species will be part of the routine site Erosion and Sediment Plan inspections during construction.

3930-PM-WM0036A Rev. 10/2005

COMMONWEALTH OF PENNSYLVANIA
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**
**and**
**DEPARTMENT OF ARMY CORPS OF ENGINEERS**
**(Baltimore, Philadelphia, and Pittsburgh Districts)**

*Coordination #*

# JOINT APPLICATION FOR PENNSYLVANIA WATER OBSTRUCTION AND ENCROACHMENT PERMIT AND U.S. ARMY CORPS OF ENGINEERS SECTION 404 PERMIT

**Before completing this form, please read the step-by-step instructions and Section F Application Completeness Checklist provided with this Joint Permit package.**

| AGENCY USE ONLY | | |
|---|---|---|
| Application ID# (Assigned by DEP) _____ | RECEIVED DATE _____ | CHECK NO. _____ |
| Program Application No. _____ | REQUIRED APP. FEE _____ | AMOUNT $_____ |

## SECTION A. APPLICATION TYPE:

STANDARD ☒ SMALL PROJECTS ☐

## SECTION B. APPLICANT IDENTIFIER

Applicant Name
PPL Bell Bend, LLC

## SECTION C. PROJECT LOCATION DATA

Name of stream and/or body of water.
Walker Run and North Branch Susquehanna River

Corps District where project will occur.
☒ Baltimore ☐ Philadelphia ☐ Pittsburgh

Name of the U.S.G.S. 7 1/2 Minute Quadrangle Map where project is located: Berwick, PA

Indicate location of project on this map by measuring (in inches) from the lower right corner:

North (up) 16 inches; West (to the left) 5 3/4 inches; Latitude 41 05'21.19" ; Longitude 76 09' 57.34"

Project type, purpose and need: Nuclear power plant construction is needed to produce 1600 MW of baseload power to meet eastern PJM market regional energy demand.

## SECTION D. PROJECT STATUS

HAS ANY PORTION OF PROPOSED PROJECT BEEN COMPLETED? ☐ yes ☒ no _____ date completed

If yes, attach description of those portions of the project that have been completed and identify dates of completion.

## SECTION E. OTHER APPROVALS

LIST APPROVALS, CERTIFICATIONS, DENIALS OR NOTICES OF VIOLATION RECEIVED FROM FEDERAL, INTERSTATE, STATE OR LOCAL AGENCIES FOR STRUCTURES, CONSTRUCTION, DISCHARGES OR OTHER ACTIVITIES DESCRIBED IN THIS APPLICATION.

PHMC clearance

PNDI clearance - US Fish and Wildlife, PA Fish and Boat, Department of Conservation and Natural Resources, PA Game Commission

Erosion and Sediment Pollution Control Plan - Luzerne Conservation District

NPDES Permit for Stormwater Discharges Associated with Construction Activites - PA DEP

Land Development Plan - Salem Township

Combined License Application to construct and operate a nuclear power plant - Nuclear Regulatory Commission

Surface Water Withdrawal, Groundwater Withdrawal, and Consumptive Water Use Approvals - SRBC

## SECTION F. APPLICATION COMPLETENESS CHECKLIST

(Applicant must place an entry - Y = Yes, N = No, N/A = Not Applicable - in each left side column space. See Section 105.13 for additional details. If you are applying under the Small Projects Application format, place an entry in only those comments prefixed by an asterisk (*).

| REQUIREMENT | Applicant Entry | DEP Use Only |
|---|---|---|
| a. GIF and permit application properly signed, sealed and witnessed | *Y | |
| b. Application Fee enclosed (see Section G.) | *Y | |
| c. Copies and proof of receipt - Act 14 notification - Acts 67/68/127 | *Y | |
| d. Cultural Resource Notice - Copy and Proof of Receipt | *Y | |
| e. Completed and approved Pennsylvania Natural Diversity Inventory Form (PNDI search) | *Y | |
| f. Plans (site plan including cross sections and profiles for Subsections 151, 191, 231, 261) | *Y | |
| g. Location map | Y | |
| h. Project description narrative | *Y | |
| i. Color photographs with map showing location taken | *Y | |
| j. Environmental Assessment form | *Y | |
| k. Erosion and Sediment Control Plan and approval letter | Y | |
| l. Hydrologic and hydraulic analysis | Y | |
| m. Stormwater Management Analysis w/consistency letter | Y | |
| n. Floodplain Management Analysis w/consistency letter | Y | |
| o. Risk Assessment | Y | |
| p. Professional engineer's seal and certification | Y | |
| q. Alternative analysis | Y | |
| r. Mitigation plan | Y | |

## SECTION G. DETERMINATION OF APPLICATION FEES (DEP FEES ONLY)

| Types of Water Obstructions and Encroachments | Number of Units | Fee Per Unit | Subtotal Amount |
|---|---|---|---|
| Stream enclosures | 1 | $ 350.00 | $ 350 |
| Channel changes | 2 | $ 300.00 | $ 600 |
| Commercial dredging | | $ 300.00 | $ |
| Peat extraction | | $ 750.00 | $ |
| Fills, levees, floodwalls | | $ 350.00 | $ |
| Bridges and other water obstructions and encroachments | 11 | $ 200.00 | $ 2200 |
| Small projects ($100 fee regardless of number of units) | | $ 100.00 | $ |
| Qualifies for General Permit (fee waived) | 8 | $0.00 | N/A |
| **Make Check Payable to: Commonwealth of Pennsylvania** | | **TOTAL FEE** | **$ 3150** |

List each type and number of water obstructions and encroachments that are included in this application and indicate subtotal and total fee amounts.

FAILURE TO PROVIDE ALL OF THE REQUESTED INFORMATION WILL DELAY THE PROCESSING OF THE APPLICATION AND MAY RESULT IN THE APPLICATION BEING PLACED **ON HOLD** WITH **NO ACTION**, OR IT MAY BE CONSIDERED WITHDRAWN AND THE FILE CLOSED.

## SECTION H. ADJOINING PROPERTY OWNERS

Please list the name and address of all property owners whose land adjoins the project property.

| NAME | ADDRESS |
|---|---|
| See attached map and table | |
| | |
| | |
| | |
| | |

## SECTION I. CERTIFICATION AND SIGNATURE

If Privately Owned, all owners (such as husband and wife) must sign. One or more members authorized to sign on behalf of an entire partnership must sign. For a Corporation, the president, vice president or other responsible official is required to sign. For Political Subdivision, signatures of the chief officer or other responsible official empowered to sign is required with the seal affixed and attested by the clerk. For Commonwealth departments, boards, commissions, receivers, trustees and authorities, a department head, bureau director, executive director, chairman, commissioner or other responsible official is required to sign. Signatures other than above must be accompanied by a power of attorney or other notarized legal documentation indicating authorization to sign on behalf of the applicant.

Application is hereby made for a permit to authorize the activities described herein. I certify I am familiar with the information contained in this application, and to the best of my knowledge and belief, such information is true, complete and accurate. I further certify I possess the authority to undertake the proposed activities.

I certify that the project proposed in this application complies with and will be conducted in a manner that is consistent with the approved Coastal Zone Management program of the Commonwealth of Pennsylvania. (Only portions of Erie, Bucks, Philadelphia and Delaware Counties are in the Coastal Zone).

I grant permission to the agencies responsible for authorization of this work, or their duly authorized representative, to enter the project site for inspection purposes during working hours. I will abide by the conditions of the permit or license if issued and will not begin work without the appropriate authorization.

By: I L Hoerster
(PRINT NAME)

X [signature] June 7, 2011
(SIGNATURE) (DATE) SEAL

VP Bell Bend Project Development
(TITLE)

WITNESS: Judith L. Stalf

**□e□tion □ □tta□□□ ent□ □ot Pro□ided**

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the Department.

| Related ID#s (If Known) | | DEP USE ONLY |
|---|---|---|
| □lient □□ _____ | □P□ □□ _____ | Date Received & General Notes |
| □ite □□ _____ | □ut□ □□ _____ | |
| Fa□ility □□ | | |

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| □□P □lient □□ | □lient □y□e □□ode | | |
| PAI024010006 | LLC | | |
| □rgani□ation □a□e or □egi□tered Fi□titiou□ □a□e | | □□ □loyer □□ (EIN) | □un □ □rad□treet □□ |
| PPL Bell Bend LLC | | 26-3159555 | 82-794-5309 |
| □ndi□idual La□t □a□e | Fir□t □a□e | M□ | □u□i□ □□□ |
| | | | |
| □dditional □ndi□idual La□t □a□e | Fir□t □a□e | M□ | □u□i□ □□□ |
| | | | |
| Mailing □ddre□□ Line □ | | Mailing □ddre□□ Line 2 | |
| 38 Bomboy Lane, Suite 2 | | | |
| □ddre□□ La□t Line □ □ity | □tate | □P□□ | □ountry |
| Berwick | PA | 18603 | USA |
| □lient □onta□t La□t □a□e | Fir□t □a□e | M□ | □u□i□ |
| Harpster | Terry | L | |
| □lient □onta□t □itle | | P□one | □□t |
| VP-Bell Bend Project-Development | | 570-802-8111 | |
| □□ ail □ddre□□ | | F□□ | |
| tlharpster@pplweb.com | | 570-802-8119 | |

## □□□□ □□F□ □M□□□□

| | | | |
|---|---|---|---|
| □□P □ite □□ | □ite □a□e | | |
| | Bell Bend Nuclear Power Plant | | |
| □P□ □□ | □□ti□ ated □u□ □er o□□□ □loyee□ to □e Pre□ent at □ite | 363 | |
| □e□□ri□tion o□□ite | | | |
| Nuclear Power Plant | | | |
| □ounty □a□e | Muni□i□ality | | □ity □oro □□□ □tate |
| Luzerne | Salem | | ☐ ☐ ☒ |
| □ounty □a□e | Muni□i□ality | | □ity □oro □□□ □tate |
| | | | ☐ ☐ ☐ |
| □ite Lo□ation Line □ | | □ite Lo□ation Line 2 | |
| | | | |
| □ite Lo□ation La□t Line □ □ity | □tate | □P□□ | |
| Berwick | PA | 18603 | |
| □etailed □ ritten □ire□tion□to □ite | | | |
| I-81N, exit onto Rt93 N, Turn right onto Rt11 N in Berwick, Turn left onto N. Market St. Bear Right to continue on Market Street. Site is on the right. | | | |
| □ite □onta□t La□t □a□e | Fir□t □a□e | M□ | □u□i□ |
| Wise | Bradley | A | |
| □ite □onta□t □itle | □ite □onta□t Fir□ | | |
| Environmental Permitting Supervisor | PPL Bell Bend | | |
| Mailing □ddre□□ Line □ | Mailing □ddre□□ Line 2 | | |
| 2 North Ninth Street (PL-4) | | | |
| Mailing □ddre□□ La□t Line □ □ity | □tate | □P□□ | |
| Allentown | PA | 18101 | |

| Phone | Fax | Email Address |
|---|---|---|
| 610-774-6508 | 610-774-2618 | bawise@pplweb.com |

| Code (Two- & Three-Digit Codes – List All That Apply) | Digit Code (Optional) |
|---|---|
| 221 | 221113 |

**Client to Site Relation**
OWNOP

## FACILITY INFORMATION

**Modification of Existing Facility** — Yes / No

| | | Yes | No |
|---|---|---|---|
| | Will this project modify an existing facility, site or activity? | ☐ | ☒ |
| 2 | Will this project involve an addition to an existing facility, site or activity? | ☐ | ☒ |

*If "Yes", check all relevant facility types and provide DEP facility identification numbers below.*

| Facility Type | DEP Fac | Facility Type | DEP Fac |
|---|---|---|---|
| ☐ Air Emission Plant | | ☐ Industrial Minerals Mining Operation | |
| ☐ Beneficial Use (water) | | ☐ Laboratory Location | |
| ☐ Blasting Operation | | ☐ Land Recycling Cleanup Location | |
| ☐ Captive Hazardous Waste Operation | | ☐ MineDrainageTrmt/LandRecyProjLocation | |
| ☐ Coal Ash Beneficial Use Operation | | ☐ Municipal Waste Operation | |
| ☐ Coal Mining Operation | | ☐ Oil & Gas Encroachment Location | |
| ☐ Coal Pillar Location | | ☐ Oil & Gas Location | |
| ☐ Commercial Hazardous Waste Operation | | ☐ Oil & Gas Water Poll Control Facility | |
| ☐ Dam Location | | ☐ Public Water Supply System | |
| ☐ Deep Mine Safety Operation -Anthracite | | ☐ Radiation Facility | |
| ☐ Deep Mine Safety Operation -Bituminous | | ☐ Residual Waste Operation | |
| ☐ Deep Mine Safety Operation -Ind Minerals | | ☐ Storage Tank Location | |
| ☐ Encroachment Location (water, wetland) | | ☐ Water Pollution Control Facility | |
| ☐ Erosion & Sediment Control Facility | | ☐ Water Resource | |
| ☐ Explosive Storage Location | | ☐ Other: | |

| Latitude/Longitude Point of Origin | Latitude | | | Longitude | | |
|---|---|---|---|---|---|---|
| | Degrees | Minutes | Seconds | Degrees | Minutes | Seconds |
| | 41 | 05 | 21.19 | 76 | 09 | 57.34 |

**Horizontal Accuracy Measure** Feet --or-- Meters

**Horizontal Reference Datum Code**
- ☐ North American Datum of 1927
- ☒ North American Datum of 1983
- ☐ World Geodetic System of 1984

**Horizontal Collection Method Code** SURVY

**Reference Point Code** Reactor Building

**Altitude** Feet 719 --or-- Meters

**Altitude Datum Name**
- ☐ The National Geodetic Vertical Datum of 1929
- ☒ The North American Vertical Datum of 1988 (NAVD88)

**Altitude Vertical Location Datum Collection Method Code** SRVEY

**Geometric Type Code** POINT

**Data Collection Date** November 2007 through June 2010

**Source Map Scale Number** 1 Inch(es) = 50 Feet
--or-- Centimeter(s) = Meters

## PROJECT INFORMATION

**Project Name**
Bell Bend Nuclear Power Plant

**Project Description**
Nuclear power plant construction

| Project Consultant Last Name | First Name | MI | Suffix |
|---|---|---|---|
| Ehrhart | Benjamin | J | P.E. |

| Project Consultant Title | Consulting Firm |
|---|---|
| Director of Design | LandStudies, Inc. |

| Mailing Address Line 1 | Mailing Address Line 2 |
|---|---|
| 315 North Street | |

| Address Last Line City | State | ZIP |
|---|---|---|
| Lititz | PA | 17543 |

| P□one | □□t | F□□ | □□ail □ddre□□ |
|---|---|---|---|
| 717-627-4440 | 122 | 717-627-4660 | ben1@landstudies.com |

| □i□e □□□edule□ | Pro□e□t Mile□tone □□□tional□ |
|---|---|
| April 2013 | Start construction |
| December 2019 | Plant fuel load commences |
| | |
| | |
| | |
| | |

| | | | | | |
|---|---|---|---|---|---|
| □□ | □a□e you in□or□ed t□e □urrounding □o□ □unity and addre□□ed any □on□ern□ □rior to □u□□ itting t□e a□□li□ation to t□e □e□art□ ent□ | ☒ | Yes | ☐ | No |
| 2□ | □□ your □ro□e□t □unded □y □tate or □ederal grant□□ | ☐ | Yes | ☒ | No |

□ote: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.
Aspect of Project Related to Grant
Grant Source: _____
Grant Contact Person: _____
Grant Expiration Date: _____

| | | | | | |
|---|---|---|---|---|---|
| □□ | □□ t□i□ a□□li□ation □or an aut□ori□ation on □□□endi□ □ o□t□e Land □□e Poli□y□ □For re□eren□ed li□t□ □ee □□□endi□ □ o□t□e Land □□e Poli□y atta□□ed to □□F in□tru□tion□□ | ☒ | Yes | ☐ | No |

□ote: If "No" to Question 3, the application is not subject to the Land Use Policy.
If "Yes" to Question 3, the application is subject to this policy and the Applicant should answer the additional questions in the **Land □□e □n□or□ ation** section.

## L□□□ □□□ □□F□□M□□□□□

□ote: Applicants are encouraged to submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

| | | | | | |
|---|---|---|---|---|---|
| □□ | □□t□ere an ado□ted □ounty or □ ulti□□ounty □o□ □re□en□i□e □lan□ | ☒ | Yes | ☐ | No |
| 2□ | □□t□ere an ado□ted □ uni□i□al or □ ulti□□ uni□i□al □o□ □re□en□i□e □lan□ | ☒ | Yes | ☐ | No |
| □□ | □□ t□ere an ado□ted □ounty□□ide □oning ordinan□e□ □ uni□i□al □oning ordinan□e or □oint □ uni□i□al □oning ordinan□e□ | ☒ | Yes | ☐ | No |

□ote: If the Applicant answers "No" to either Questions 1, 2 or 3, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 4 and 5 below.
If the Applicant answers "Yes" to questions 1, 2 and 3, the Applicant should respond to questions 4 and 5 below.

| | | | | | |
|---|---|---|---|---|---|
| □□ | □oe□ t□e □ro□o□ed □ro□e□t □ eet t□e □ro□i□ion□ o□t□e □oning ordinan□e or doe□ t□e □ro□o□ed □ro□e□t □a□e □oning a□□ro□al□ | ☒ | Yes | ☐ | No |
| □□ | □a□e you atta□□ed Muni□i□al and □ounty Land □□e Letter□ □or t□e □ro□e□t□ | ☒ | Yes | ☐ | No |

## □□□□□□□□□□□ □□F□□M□□□□□

**□ote**: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 and the accompanying Cultural Resource Notice Form.

**□□t□e a□ti□ity □ill □e a □ining □ro□e□t** (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

**□□t□e a□ti□ity □ill not □e a □ining □ro□e□t**, skip questions 1.0 through 2.5 and begin with question 3.0.

| | | | | | |
|---|---|---|---|---|---|
| □□□ | **□□t□i□ a □oal □ining □ro□e□t□** If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0. (DEP Use/48y1) | ☐ | Yes | ☐ | No |
| □□□ | **□ill t□i□ □oal □ining □ro□e□t in□ol□e □oal □re□aration□ □ro□e□□ing a□ti□itie□ in □□i□□ t□e total a□ount o□□oal □re□ared□□ro□e□□ed □ill □e e□ual to or greater t□an 2□□ ton□□day□** (DEP Use/4x70) | ☐ | Yes | ☐ | No |
| □□2 | **□ill t□i□ □oal □ining □ro□e□t in□ol□e □oal □re□aration□ □ro□e□□ing a□ti□itie□ in □□i□□ t□e total a□ount o□□oal □re□ared□□ro□e□□ed □ill □e greater t□an □□□□□□ ton□□year□** (DEP Use/4x70) | ☐ | Yes | ☐ | No |
| □□□ | **□ill t□i□ □oal □ining □ro□e□t in□ol□e □oal □re□aration□ □ro□e□□ing a□ti□itie□ in □□i□□ t□er□al □oal dryer□ or □neu□ati□ □oal □leaner□ □ill □e u□ed□** (DEP Use/4x70) | ☐ | Yes | ☐ | No |
| □□□ | **For t□i□ □oal □ining □ro□e□t□ □ill □e□age treat□ent □a□ilitie□ □e □on□tru□ted and treated □a□te □ater di□□□arged to □ur□a□e □ater□□** (DEP Use/4x62) | ☐ | Yes | ☐ | No |
| □□□ | **□ill t□i□ □oal □ining □ro□e□t in□ol□e t□e □on□tru□tion o□a □er□anent i□ □ound□ent □eeting one or □ore o□ t□e □ollo□ing □riteria: □□□a □ontri□utory drainage area e□□eeding □□□a□re□□ □2□ a de□t□ o□ □ater □ea□ured □y t□e u□□trea□ toe o□t□e da□ at □a□i□u□ □torage ele□ation e□□eeding □□ □eet□ □□□an i□ □ounding □a□a□ity at □a□i□u□ □torage ele□ation e□□eeding □□a□re□□eet□** (DEP Use/3140) | ☐ | Yes | ☐ | No |
| □□□ | **□ill t□i□ □oal □ining □ro□e□t in□ol□e underground □oal □ining to □e □ondu□ted □it□in □□□ □eet o□an oil or ga□ □ell□** (DEP Use/4z41) | ☐ | Yes | ☐ | No |
| 2□□ | **□□t□i□a non□□oal □indu□trial □ineral□□□ ining □ro□e□t□** If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0. (DEP Use/48y1) | ☐ | Yes | ☐ | No |
| 2□□ | **□ill t□i□ non□□oal □indu□trial □ineral□□ □ining □ro□e□t in□ol□e t□e □ru□□ing and □□reening o□ non□□oal □ineral□ ot□er t□an □and and gra□el□** (DEP Use/4x70) | ☐ | Yes | ☐ | No |
| 2□2 | **□ill t□i□ non□□oal □indu□trial □ineral□□ □ining □ro□e□t in□ol□e t□e □ru□□ing and□or □□reening o□□and and gra□el □it□ t□e e□□e□tion o□□et □and and gra□el o□eration□ □□□reening only□and dry □and and gra□el o□eration□ □it□ a □a□a□ity o□le□□ t□an □□□ ton□□□our o□un□on□olidated □aterial□□** (DEP Use/4x70) | ☐ | Yes | ☐ | No |
| 2□□ | **□ill t□i□ non□□oal □indu□trial □ineral□□ □ining □ro□e□t in□ol□e t□e □on□tru□tion□o□eration and□or □odi□□ation o□a □orta□le non□□etalli□ □i□e□□ non□□oal□ □ineral□ □ro□e□□ing □lant under t□e aut□ority o□ t□e □eneral Per□it □or Porta□le □on□□etalli□ Mineral Pro□e□□ing Plant□ □i□e□□ □□□□P□P□□□P□□□□** (DEP Use/4x70) | ☐ | Yes | ☐ | No |
| 2□□ | **For t□i□ non□□oal □indu□trial □ineral□□ □ining □ro□e□t□ □ill □e□age treat□ent □a□ilitie□ □e □on□tru□ted and treated □a□te □ater di□□□arged to □ur□a□e □ater□□** (DEP Use/4x62) | ☐ | Yes | ☐ | No |
| 2□□ | **□ill t□i□ non□□oal □indu□trial □ineral□□ □ining □ro□e□t in□ol□e t□e □on□tru□tion o□a □er□anent i□ □ound□ent □eeting one or □ore o□t□e □ollo□ing □riteria: □□□a □ontri□utory drainage area e□□eeding □□□a□re□□ □2□a de□t□ o□ □ater □ea□ured □y t□e u□□trea□ toe o□ t□e da□ at □a□i□u□ □torage ele□ation e□□eeding □□ □eet□ □□□an i□ □ounding □a□a□ity at □a□i□u□ □torage ele□ation e□□eeding □□a□re□□eet□** (DEP Use/3140) | ☐ | Yes | ☐ | No |

| | | | | | |
|---|---|---|---|---|---|
| | ill your ro e t a ti ity or aut ori ation a e anyt ing to do it a ell related to oil or ga rodu tion a e on tru tion it in 2 eet o a e t an oil or ga ell in ol e t e a te ro u a ell or tring o er line a o e an oil or ga ell If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0. (DEP Use/4z41) | ☐ | Yes | ☒ | No |
| | oe t e oil or ga related ro e t in ol e any o t e ollo ing: la e ent o ill e a ation it in or la e ent o a tru ture lo ated in along a ro or ro e ting into a ater our e lood ay or ody o ater in luding etland (DEP Use/4z41) | ☐ | Yes | ☐ | No |
| 2 | ill t e oil or ga related ro e t in ol e di arge o indu trial a te ater or tor ater to a dry ale ur a e ater ground ater or an e i ting anitary e er y te or tor ater y te If "Yes", discuss in *Project Description*. (DEP Use/4z41) | ☐ | Yes | ☐ | No |
| | ill t e oil or ga related ro e t in ol e t e on tru tion and o eration o indu trial a te treat ent a ilitie (DEP Use/4z41) | ☐ | Yes | ☐ | No |
| | ill t e ro e t in ol e a on tru tion a ti ity t at re ult in eart di tur an e If "Yes", specify the total disturbed acreage. (DEP Use/4x66)<br>otal i tur ed reage 687 Acres | ☒ | Yes | ☐ | No |
| | oe t e ro e t in ol e any o t e ollo ing<br>If "Yes", respond to 5.1-5.3. If "No", skip to Question 6.0. (DEP Use/4x10) | ☒ | Yes | ☐ | No |
| | ater tru tion and n roa ent Pro e t oe t e ro e t in ol e any o t e ollo ing: la e ent o ill e a ation it in or la e ent o a tru ture lo ated in along a ro or ro e ting into a ater our e lood ay or ody o ater (DEP Use /4x10). | ☒ | Yes | ☐ | No |
| 2 | etland a t oe t e ro e t in ol e any o t e ollo ing: la e ent o ill e a ation it in or la e ent o a tru ture lo ated in along a ro or ro e ting into a etland (DEP Use/4x10). | ☒ | Yes | ☐ | No |
| | Flood lain Pro e t y t e o on ealt a Politi al u di i ion o t e o on ealt or a Pu li tility oe t e ro e t in ol e any o t e ollo ing: la e ent o ill e a ation it in or la e ent o a tru ture lo ated in along a ro or ro e ting into a lood lain (DEP Use /4x10). | ☒ | Yes | ☐ | No |
| | ill t e ro e t in ol e di arge o tor ater or a te ater ro an indu trial a ti ity to a dry ale ur a e ater ground ater or an e i ting anitary e er y te or e arate tor ater y te (DEP Use/4x62) | ☒ | Yes | ☐ | No |
| | ill t e ro e t in ol e t e on tru tion and o eration o indu trial a te treat ent a ilitie (DEP Use/4x62) | ☐ | Yes | ☒ | No |
| | ill t e ro e t in ol e on tru tion o e age treat ent a ilitie anitary e er or e age u ing tation If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the *Project Description*, where applicable. (DEP Use/4x62)<br>ti ated Pro o ed Flo gal day Peak during construction 19,500 GPD | ☒ | Yes | ☐ | No |
| | ill t e ro e t in ol e t e u di i ion o land or t e generation o g d or ore o e age on an e i ting ar el o land or t e generation o an additional g d o e age on an already de elo ed ar el or t e generation o g d or ore o indu trial a te ater t at ould e di arged to an e i ting anitary e er y te (DEP Use/4x61). | ☒ | Yes | ☐ | No |
| | a t e age a ilitie lanning u itted and a ro ed y P If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval. Letter was requested | ☐ | Yes | ☒ | No |
| | t i ro e t or t e ene i ial u e o io olid or land a li ation it in Penn yl ania If "Yes" indicate how much (i.e. gallons or dry tons per year). (DEP Use/4X62)<br>allon Per ear re idential e tage _____<br>2 ry on Per ear io olid | ☐ | Yes | ☒ | No |

| | | | | | |
|---|---|---|---|---|---|
| | oe t e ro e t in ol e on tru tion odi i ation or re o al o a da<br>If "Yes", identify the dam. (DEP Use/3140)<br>a a e | ☐ | Yes | ☒ | No |
| 2 | ill t e ro e t inter ere it t e lo ro or ot er i e i a t a da<br>If "Yes", identify the dam. (DEP Use/3140)<br>2 a a e | ☐ | Yes | ☒ | No |
| | ill t e ro e t in ol e o eration e luding during t e on tru tion eriod t at rodu e air e i ion i e et If "Yes", identify each type of emission followed by the amount of that emission. (DEP Use/4x70)<br>nter all ty e a ount e ollo ing i reli inary in or ation:<br>o e i ion e arate 2 : 2 2: :PM 2 :PM 2 :PM2 all unit<br>ea et it e i olon are | ☒ | Yes | ☐ | No |
| | oe t e ro e t in lude t e on tru tion or odi i ation o a drin ing ater u ly to er e or ore onne tion or 2 or ore eo le at lea t day out o t e year If "Yes", check all proposed sub-facilities. (DEP Use/4x81) | ☒ | Yes | ☐ | No |
| | u er o Per on er ed — 363 (Number of employees during operations) | | | | |
| 2 | u er o loyee ue t — See 14.0.1 | | | | |
| | u er o onne tion — 1 | | | | |
| | u Fa : i tri ution y te | ☒ | Yes | ☐ | No |
| | u Fa : ater reat ent Plant | ☐ | Yes | ☒ | No |
| | u Fa : our e | ☐ | Yes | ☒ | No |
| | u Fa : Pu tation | ☒ | Yes | ☐ | No |
| | u Fa : ran i ion Main | ☒ | Yes | ☐ | No |
| | u Fa : torage Fa ility | ☐ | Yes | ☒ | No |
| | ill your ro e t in lude in iltration o tor ater or a te ater to ground ater it in one al ile o a u li ater u ly ell ring or in iltration gallery (DEP Use/4x81) and 4x52). | ☒ | Yes | ☐ | No |
| | your ro e t to e er ed y an e i ting u li ater u ly If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project. (DEP Use/4x81)<br>u lier a e — PA American Water Company | ☒ | Yes | ☐ | No |
| 2 | Letter o ro al ro u lier i tta ed | ☒ | Yes | ☐ | No |
| | ill t i ro e t in ol e a ne or in rea ed drin ing ater it dra al ro a trea or ot er ater ody If "Yes", should reference both Water Supply and Watershed Management. (DEP Use/4x81 and 4x10)<br>trea a e | ☐ | Yes | ☒ | No |
| | ill t e on tru tion or o eration o t i ro e t in ol e treat ent torage reu e or di o al o a te If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed. (DEP/Use4x32)<br>y e ount — Hazardous: Generally very low<br>Residual: Possible antifreeze from vehicle, waste oil, waste water<br>Construction and Demolition: Tree stumps and grading<br>Metal and Wood: Construction leftovers<br>Sanitary Wastewater: See 8.0<br>Radioactive Wastes<br>Universal Wastes: estimated 10,000 lbs/year | ☒ | Yes | ☐ | No |
| | ill your ro e t in ol e t e re o al o oal ineral et a art o any eart di tur an e a ti itie (DEP Use/48y1) | ☐ | Yes | ☒ | No |
| 2 | oe your ro e t in ol e in tallation o a ield on tru ted underground torage tan If "Yes", list each Substance & its Capacity. ote: Applicant may need a Storage Tank Site Specific Installation Permit. (DEP Use/2570)<br>2 nter all u tan e — N/A<br>a a ity o ea e arate<br>ea et it e i olon | ☐ | Yes | ☒ | No |

| | | | |
|---|---|---|---|
| 21.0 | **Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. (DEP Use/2570)<br>**21.0.1 Enter all substances & capacity of each; separate each set with semicolons.** N/A | ☐ Yes | ☒ No |
| 22.0 | **Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. (DEP Use/2570)<br>**22.0.1 Enter all substances & capacity of each; separate each set with semicolons.** **SEE ATTACHED TABLE FOR TANK INFORMATION BBNPP Chemical Storage List of Chemical Materials starts in the middle of Page 1 of Table 2.2-2** | ☒ Yes | ☐ No |
| 23.0 | **Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. (DEP Use/2570)<br>**23.0.1 Enter all substances & capacity of each; separate each set with semicolons.** **SEE ATTACHED TABLE FOR TANK INFORMATION BBNPP Chemical Storage List of Chemical Materials starts in the middle of Page 1 of Table 2.2-2** | ☒ Yes | ☐ No |
| 24.0 | **Will the intended activity involve the use of a radiation source?** (DEP Use/4x90). | ☒ Yes | ☐ No |

## CERTIFICATION

**I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.**

**Type or Print Name** Terry L. Harpster

| | | |
|---|---|---|
| | VP-Bell Bend Project-Development | 11/14/2011 |
| **Signature** | **Title** | **Date** |

## Table 2.2-2—{SSES and BBNPP Chemical Storage}

(Page 1 of 2)

| Material | Toxicity Limit | Largest Container Amount | Location |
|---|---|---|---|
| **Susquehanna Steam Electric Station (SSES) Units 1 and 2** | | | |
| Alcohol, Isopropyl | 2,000 ppm | 676 lbs (307 kg) | Warehouse |
| Argon, Liquid | 69,200 ppm | 4,315 $ft^3$(122$m^3$) | Cylinder Storage Area |
| Carbon Dioxide | 40,000 ppm | 25,000 lbs (11,340 kg) | Between Turbine Bldg and Circ Water Pumphouse |
| Diesel Fuel | Not toxic threat | 1,940,072 lbs (880,002 kg) | Next to DG Buildings |
| Freon R-114 | 7,000 mg/$m^3$ | 24,343 lbs (11,042 kg) | Resin Bldg |
| Freon R-12 | 15,000 ppm | 60,120 lbs (27,270 kg) | Resin Bldg |
| Gasoline, Benzene | 500 ppm STEL<br>300 ppm TWA | 61,642 lbs (27,9[illegible] kg) | Fuel Farm |
| Halon 1301 | 40,000 ppm | 59[illegible] lbs (268 kg) | Security Control Center |
| Hydrogen, Liquid | 4,000 ppm | 10,017 lbs (4,544 kg) | Hydrogen-injection Tank Farm |
| Nitrogen, Liquid | 69,[illegible] ppm | 10,318 lbs (4,680 kg) | N of S&A Bldg |
| Oxygen, Liquid | 683,700 ppm | 85,500 lbs (38,782 kg) | Hydrogen-injection Tank Farm |
| PCL-57 (1-hydroxyethlyidene-1,1-diphosphonic acid or HDEP) | 500 mg/$m^3$ | 24,490 lbs (11,108 kg) | Circ Water Pumphouse |
| Sodium bisulfite solution | 100 ppm | 17,100 lbs (7,756 kg) | Shed behind Acid/Chlorine Bldg |
| Sodium hypochlorite, 12% (CWPH) | 10 ppm | 72,571 lbs (32,918 kg) | Circ Water Pumphouse |
| Sulfur Hexafluoride, Compressed | 1,000 ppm | 115 lbs (52 kg) | Hydrogen Tank Farm |
| **Bell Bend Nuclear Power Plant (BBNPP)** | | | |
| Ammonium Hydroxide (28% solution) | 300 ppm | 8,500 gal (32,000 l) | Potential Onsite Chemical at BBNPP |
| Diesel Fuel | Not toxic threat | 125,000 gal (4.7E5 l) | Potential Onsite Chemical at BBNPP |
| Dimethylamine (2% solution) | 500 ppm | 350 gal (1,300 l) | Potential Onsite Chemical at BBNPP |
| Gasoline | 500 ppm STEL<br>300 ppm TWA | 4,000 gal (15,000 l) | Potential Onsite Chemical at BBNPP |
| Hydrazine (35% solution) | 50 ppm | 350 gal (1,300 l) | Potential Onsite Chemical at BBNPP |
| Hydrogen Tank | 4,000 ppm | 51.1 $ft^3$ (1.44 $m^3$) at 2,450 psig, -20°F to 200°F | Potential Onsite Chemical at BBNPP |
| Liquid Nitrogen | 69,200 ppm | 11,300 gal (42,800 l) sat liquid at -250°F | Potential Onsite Chemical at BBNPP |
| Sodium Hypochlorite | 10 ppm | 12,000 gal (45.425 l) | Potential Onsite Chemical at BBNPP |
| Argon | 69,200 ppm | 270 scf (7.65 $Nm^3$) (1) | Potential Onsite Chemical at BBNPP |

**Table 2.2-2—{SSES and BBNPP Chemical Storage}**

(Page 2 of 2)

| Material | Toxicity Limit | Largest Container Amount | Location |
|---|---|---|---|
| Argon-Methane (considered Methane) | 5,000 ppm | 282 scf (7.99 $Nm^3$) (1) | Potential Onsite Chemical at BBNPP |
| Hydrogen Cylinder | 4,000 ppm | 278 scf (7.87 $Nm^3$) (1) | Potential Onsite Chemical at BBNPP |
| Nitrogen Gas | 69,200 ppm | 235 scf (6.65 $Nm^3$) (1) | Potential Onsite Chemical at BBNPP |
| Oxygen | 683,700 ppm | 282 scf (7.99 $Nm^3$) (1) | Potential Onsite Chemical at BBNPP |
| Deposit Control Agent BL5323 | - | 1,000 gal (3,785 l) | Potential Onsite Chemical at BBNPP |
| Sodium Bisulfite 38% | 100 as $SO_2$ | 500 gal (1,893 l)) | Potential Onsite Chemical at BBNPP |

Note:

(1) Standard conditions are 68°F and 14.7 psia

PENNSYLVANIA
AMERICAN WATER

Joe Woodward P 717-790-3028
852 Wesley Drive F 717-795-1915
Mechanicsburg, PA 17055
Joseph.Woodward@amwater.com

November 1, 2010

Terry Harpster
PPL Bell Bend, LLC
38 Bomboy Lane
Suite 2
Berwick, PA 18603

RECEIVED NOV 08 2010

RE: Water Availability
Bell Bend Site,
Salem Township, Luzerne County, PA

Dear Mr. Harpster:

Pennsylvania-American Water Company (PAWC) has received your request for public water availability at the above referenced site. PAWC does service this particular franchise territory and we intend to provide water service in strict accordance with the Tariff Rules and Regulations as filed with the Pennsylvania Public Utility Commission.

Please be advised that the developer will be required to pay for all improvements required to extend water to the site. This work may include but is not limited to water main extensions, pump stations, water storage tanks and other improvements as necessary

To assist us with the design of the main extension, it is mandatory for you to submit certain data for the sizing of the main, service and meter. Please submit the following information as soon as possible to avoid any delay in providing service.

- The latest site plan showing the proposed building layout and the meter pit location in correct scale.
- Plumbing Plans
- Sprinkler Plans – including a pump performance curve in applicable and hydraulic calculations
- Backflow Prevention Device Specifications
- Meter Pit

We are enclosing a PAWC Water Service Application and a PAWC Water Connection Form that will need to be completed for this service. We will require the aforementioned information be returned to this office for review as promptly as possible. We are also providing you with a copy of our current schedule of rates and standard master metering

PENNSYLVANIA
AMERICAN WATER

detail. There will be no tap fees or connection fees associated with the individual water service connection. There will be a one time, thirty dollar ($30) per service activation fee to set up the individual account. This fee will be included in the first month's water bill.

If you have any questions, please contact me at (717) 691-2108.

Sincerely,

Joseph Woodward
Manger – Central PA Field Operations

Cc: David Kaufman, PAWC Vice President – Engineering
Michael Salvo, PAWC Senior Director – Field Operations
Joel Mitchell, PAWC Project Manager – Engineering
Bernie Grundusky, PAWC Manager – Business Development

| Office Use Only |
|---|
| Premise # _____ |
| NSI Account # |

PENNSYLVANIA AMERICAN WATER

# WATER SERVICE APPLICATION

Please complete Property, Applicant and Signatures boxes below to apply for water service. Thank you for the opportunity to be YOUR water utility.

| | | | | | |
|---|---|---|---|---|---|
| HOUSE# | STREET PREFIX | STREET NAME & SUFFIX | | | |
| MUNICIPALITY | APT/LOT# | CITY | STATE | ZIP CODE | |
| SEWAGE AUTHORITY | TYPE OF SERVICE: ( ) Residential ( ) Commercial ( ) Industrial ( ) Other _____<br>TYPE OF HEAT: ( ) Hot Water ( ) Forced Air ( ) Other | | | | |
| NAME (First, Middle, Last) | | PHONE# | CELL# | | |
| NAME (First, Middle, Last) | | PHONE# | CELL# | | |
| MAILING ADDRESS (if different than service address) | | | | | |

(I) (We), the Applicant(s) for water service from Pennsylvania-American Water have read and understood the above application. (I) (We) will be jointly and severally bound by this application to:

1. Pay a one-time fee of $30.00 to cover the cost of setting up (MY) (OUR) account which will be added to your first bill. DO NOT SEND.

***READ ABOVE STATEMENTS BEFORE SIGNING***

| | |
|---|---|
| APPLICANT FOR SERVICE<br>x | APPLICANT FOR SERVICE<br>x |
| DATE | DATE |

## FOR OFFICE USE ONLY PWSID:

| | | | | | |
|---|---|---|---|---|---|
| USAGE DATA | WORK ZONE | AW AREA | DISTRICT CODE | CREW | WORK ORDER |
| SERVICE TAP DATE | TAP SIZE | SERVICE SIZE | SERVICE TYPE | | |
| METER ROUTE | METER STOP | METER NUMBER | METER SIZE | # DIALS | |
| METER SET DATE | METER SET READING | METER LOCATION | | | |
| METER READ INSTRUCTIONS | | | | | |
| ADDITIONAL NOTES<br>Rate Code _____ Sewage Code _____ Distribution Zone _____ Engineering Area _____ | | | | | |

Copy To: ( ) Dispatch ( ) Call Center ( ) ( ) ( ) ( ) WO File ( ) Other

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER SERVICE CONNECTION FORMS


GENTLEMEN:

To review your request for a water service connection in Pennsylvania, the following information must be submitted. Please complete both copies of this form. All questions must be answered. Return the completed form, along with one copy of the site plan showing the water service diagram, to Pennsylvania-American Water Company, 852 Wesley Drive, Mechanicsburg, PA 17055-4475.

1. Owner's Name: _____ Phone No. _____

Service Address: _____

_____

Billing Address: _____

_____

2. Designer's Name: _____ Phone No. _____

Address: _____

_____

3. Plumber's Name: _____ Phone No. _____

Address: _____

_____

4. Information Furnished On This Form By:

Name: _____ Phone No. _____

Address: _____

_____

5. Comments: _____

_____

_____

_____

Continued on Next Page

PENNSYLVANIA-AMERICAN WATER COMPANY
WATER SERVICE CONNECTION FORMS


6. Type of Building: _____

7. Service Required and Size:

| | Yes | No | Size | Comments |
|---|---|---|---|---|
| Domestic: | | | | |
| Irrigation: | | | | |
| Fire Protection: | | | | |
| Combined Service: | | | | |

8. Domestic Service Requirements: (At Point of Connection)
Maximum Service Demand in GPM: _____

Detail of Service:

| Quantity | Fixtures or Equipment (describe) | GPM |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

9. Irrigation Service Requirements: (Residual at Point of Connection)

Maximum Flow Requested: _____ GPM at _____ PSI

Minimum Flow Requested: _____ GPM at _____ PSI

10. Fire Protection Service Requirements: (Residual at Point of Connection)

Fire Flow Requested: _____ GPM at _____ PSI

Number of Fire Hydrants: _____ and Capacity Each in GPM _____

Number of Hose Cabinets: _____ and Capacity Each in GPM _____

Number of Sprinklers: _____ and Capacity Each in GPM _____

Maximum Height of Sprinklers Above Ground Elevation: _____

Anti-Freeze Solution Being Planned into Fire ystem: Yes: _____ No: _____

11. Schedule for Service: _____

Installation of Meter: Inside: _____ Outside (Pit): _____

Is There Access T (a) 115 VAC Power Yes: _____ No: _____

(b) Telephone Line Yes: _____ No: _____

RULES AND REGULATIONS GOVERNING THE
DISTRIBUTION AND SALE OF WATER

26. Classification of Revenue

26.1 Residential

Sales to single premises residences, or to multiple premises residences, including apartment houses or apartment buildings, where each unit or premises is served through a separate meter.

26.2 Commercial

A. Sales to multiple premises residence served through a single meter or battery of meters.

B. Sales to all private institutions and organizations.

C. Sales to manufacturing or processing establishments where the water is not used principally in the manufacturing or processing functions.

D. Include sales to residences such as apartment and boarding houses, hotels, offices, office buildings, retail and wholesale commercial establishments, laundries, churches, private schools and colleges, private hospitals, private cemeteries, etc., where water is not used primarily for industrial purposes.

26.3 Industrial

A. Sales to manufacturing or processing establishments where the water is used principally in the manufacturing or processing functions.

B. Sales of water to manufacturing and industrial consumers such as steel works, automobile manufacturers, breweries, public utilities (other than sales to other water utilities), stock yards, packing houses, grain elevators, bottling works.

26.4 Municipal

A. Sales to governmental agencies (other than sales of water for resale).

B. Sales of water for municipal and other public purposes, other than public fire protection. Include sales for sewer and street flushing, also for street and sidewalk construction when done by the municipality. Also include sales such as the filling of public swimming pools, drinking and display fountains, parks, schools, hospitals, cemeteries, buildings. Sales of water for City, County, State and Federal uses are to be included in this classification.

26.5 Sales for Resale (C)

Sales to private or public water utilities where the water is to be resold to customers of the utilities.

Group A: Customers purchasing water as a primary source of supply as evidenced by their relationship of maximum day use to average day use.

Group B: Customers purchasing water for emergency or peak shaving purposes as evidenced by their relationship of maximum day use to average day use.

26.6 Private Fire Protection

Covers all unmetered charges for fire protection service other than charges for public fire protection.

26.7 Public Fire Protection

Charges rendered to municipalities for public fire hydrant (rental) stand-by charges.

RULES AND REGULATIONS GOVERNING THE
DISTRIBUTION AND SALE OF WATER

## 5. Meters and Meter Installations

### 5.1 Meter Installations (C)

The Company will furnish and install for each Customer, without charge, a suitable meter and will keep the same in repair. The customer, however, shall properly protect the meter from damage by frost or other causes and shall be held responsible for repairs or replacement of the meter made necessary by the negligence or intentional act of the customer.

### 5.2 Meter Space and Location

The Customer shall provide a safe, readily-accessible, and protected location for the installation of a meter at such point as will control the entire supply to the premise. The location must be acceptable to the Company as most convenient for its service so that the meter may be easily examined, read, or removed. In addition, at the Company's option, the Customer shall also provide a safe and readily accessible location outside of his residence for the installation of a remote meter reading device. If the Customer does not maintain ready access to the meter and the remote meter reading device, the Company may install an outside meter setting at the Customer's expense.

### 5.3 Automatic Meter Reading

The Company, without charge to the Customer, may install meters capable of being read automatically from a central location using telephone lines. To install this automatic meter reading equipment, the Company will require access to a telephone line of the premise receiving water service. If installation is denied, the Company may impose a meter reading fee equal to the cost of manually reading the meter or terminate service. If the automatic meter reading equipment can be installed, the Customer must provide the Company with the telephone number of the line to which the equipment will be connected and immediately advise the Company of any changes in the number.

### 5.4 Outside Meter Installations

At the Company's discretion, a meter shall be placed by the Customer in a meter tile or vault which meets the Company's specifications. Installation of the meter tile or vault shall be at the Customer's expense. The meter tile or vault shall be placed immediately inside the Customer's property line or at such other location as may be ordered by the Company.

RULES AND REGULATIONS GOVERNING THE
DISTRIBUTION AND SALE OF WATER
(Continued)

5.5 Meter Service

All service provided by the Company except public fire protection shall be metered.

5.6 Meter Installations for Flat-Rate Accounts and Unmetered Private Fire Services

Within 45 calendar days of notification by the Company, a flat-rate or unmetered private fire service Customer will provide a suitable meter setting at his own expense. The Company will provide the Customer with standard specifications for the meter setting. Any Customer who does not provide a suitable meter setting within the 45-day period will be subject to termination of service; or, at the option of the Company in the case of an unmetered fire service Customer, the installation will be made by the Company and a surcharge applied to the Customer's bill. The surcharge will be an annual fee equal to 17% of the total actual cost of installation.

5.7 Tampering with Meters or other Utility Equipment

When a meter or other utility equipment on a Customer's premises has been tampered with and the customer enjoys the use of or receives benefit from the water service intended to be metered, it may be reasonably inferred that the Customer tampered with the meter or other utility equipment. The penalties for tampering include but, are not limited to, termination of service, recovery by the Company of all costs related to the tampering, including payment for such water service as the Company may estimate from available information has been used but not registered by the Company's meter, and criminal sanctions pursuant to the laws of the Commonwealth.

## SCHEDULE OF RATES APPLICABLE TO RATE ZONE 1
## FOR ALL RATE CLASSES EXCEPT INDUSTRIAL

### METER RATES

All water supplied by the Company for any and all purposes, except Industrial, Qualified Private Fire Hydrants and Public Fire Hydrants, shall be metered as hereinafter set forth. All meters shall be read monthly or bimonthly and the water used shall be paid for in accordance with the following schedule of rates.

### Service Charges
### For All Rate Classes Except Industrial

All metered customers shall be subject to a monthly service charge, based on the size of meter required to render adequate service. (I)

| Size of Meter | Service Charge Per Month Except Other Water Utilities | Service Charge Per Month Other Water Utilities Group A & B |
|---|---|---|
| 5/8 inch | $ 13.00 | $ 17.30 |
| 3/4 inch | 19.60 | 26.40 |
| 1 inch | 32.60 | 43.10 |
| 1-1/2inch | 53.40 | 87.30 |
| 2 inch | 85.40 | 138.60 |
| 3 inch | 159.40 | 260.80 |
| 4 inch | 200.10 | 434.00 |
| 6 inch | 299.50 | 866.80 |
| 8 inch | 579.90 | 1,386.90 |
| 10 inch | 839.90 | 1,994.30 |
| 12 inch | 1,313.53 | 3,121.90 |

### Consumption Charges For all Rate Classes Except Industrial

The following rates shall apply per 100 gallons.

| | FIRST 16,000/MONTH | NEXT 584,000/MONTH | ALL IN EXCESS OF 600,000/MONTH | |
|---|---|---|---|---|
| Residential | .7890 | .7890 | .7890 | (I) |
| Commercial | .7656 | .5869 | .5869 | (I) |
| Municipal | .7890 | .6532 | .6532 | (I) |
| Other Water Utilities Group A | .5374 | .5374 | .5374 | (I) |
| Other Water Utilities Group B | 1.5142 | 1.5142 | 1.5142 | |

## SCHEDULE OF RATES APPLICABLE TO RATE ZONE 1 FOR INDUSTRIAL RATE CLASS

### METER RATES

All water supplied by the Company for Industrial purposes shall be metered as hereinafter set forth. All meters shall be read monthly or bimonthly and the water used shall be paid for in accordance with the following schedule of rates.

### Service Charges For Industrial Rate Class

All metered customers shall be subject to a monthly service charge, based on the size of meter required to render adequate service.

| Size of Meter | | Per Month |
|---|---|---|
| 5/8 | inch | $ 18.70 |
| 3/4 | inch | 28.10 |
| 1 | inch | 46.70 |
| 1-1/2 | inch | 93.40 |
| 2 | inch | 149.40 |
| 3 | inch | 280.70 |
| 4 | inch | 467.50 |
| 6 | inch | 933.90 |
| 8 | inch | 1,494.30 |
| 10 | inch | 2,148.50 |
| 12 | inch | 3,362.10 |

### Consumption Charges For Industrial Rate Class (I)

The following rates shall apply per 100 gallons per month.

| Industrial | | Industrial Curtailment* | |
|---|---|---|---|
| First 16,000 | .7890 | First 16,000 | .7890 |
| Next 584,000 | .5897 | Next 584,000 | .5897 |
| All in Excess of 600,000 | .4676 | Next 14,400,000 | .4676 |
| | | All In Excess Of 15,000,000 | .3158 |

* Subject to the availability criteria and terms and conditions of the industrial curtailment rate (pages 9A1 and 9A2, hereof), the foregoing rates shall apply per 100 gallons per month for service provided under the Industrial Curtailment Rate.

**T. L. Harpster**
VP-Bell Bend Project-Development

**PPL Bell Bend, LLC**
38 Bomboy Lane, Suite 2
Berwick, PA 18603
Tel. 570.802.8111 FAX 570.802.8119
tlharpster@pplweb.com

October 21, 2010

Mr. Randy Elkin
Pennsylvania American Water Company
306 West Front Street
Berwick, PA 18603

**PPL BELL BEND, LLC**
**NUCLEAR POWER PLANT PROJECT**
**SALEM TOWNSHIP**
**WATER SERVICE NOTIFICATION**
**BNP-2010-267**

PPL Bell Bend, LLC is proposing to construct a Nuclear Power Plant on lands adjacent to the Susquehanna Nuclear Plant in Salem Township. The project entails approximately 800 acres of land development and will have approximately 350 permanent employees.

As part of the permitting process, PPL must satisfy administrative requirements of the U.S. Army Corps of Engineers/Pennsylvania Department of Environmental Protection and Salem Township Ordinances. This requires PPL to submit letters from all applicable utilities indicating that adequate facilities exist to provide service to the proposed site. Based on our projected water use calculations, the normal plant flow requirement will be 95 gallons per minute. We are requesting that you forward correspondence that states that the existing system has the capacity to accommodate this project. We are assuming our tie in point will be on SR 0011.

Thank you in advance for your cooperation. If you should have any questions or require additional information, please feel free to contact Vince Kelly [610.774.7611 or Jkelly@pplweb.com] of our office.

Respectfully,

Terry L Harpster

TLH/kw

cc: Karen Karchner
Zoning/Building Code Official
38 Bomboy Lane
PO Box 405
Berwick, PA 18603

**SENDER:** *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse, so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Randy Ulm
PA American Water Co.
306 W. Front St.
Berwick PA 18603

*COMPLETE THIS SECTION ON DELIVERY*

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (*Printed Name*) Chris Bal
C. Date of Delivery OCT 22 2010

D. Is delivery address different from item 1? ☐ No
If YES, enter delivery address below:
PO Box 349
Berwick PA 18603

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (*Extra Fee*) ☐ Yes

2. Article Number
(*Transfer from service label*) 7009 3410 0000 8705 2736

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

**T. L. Harpster**
VP-Bell Bend Project-Development

**PPL Bell Bend, LLC**
38 Bomboy Lane, Suite 2
Berwick, PA 18603
Tel. 570.802.8111 FAX 570.802.8119
tlharpster@pplweb.com

October 21, 2010

Ms. Gloria Boborsky
Manager
Berwick Joint Sewer Authority
1108 Freas Avenue
Berwick, PA 18603

**PPL BELL BEND, LLC**
**NUCLEAR POWER PLANT PROJECT**
**SALEM TOWNSHIP**
**SANITARY SEWER SERVICE NOTIFICATION**
**BNP-2010-266**

As we have discussed, PPL Bell Bend, LLC is proposing to construct a Nuclear Power Plant on lands adjacent to the Susquehanna Nuclear Plant in Salem Township. The project entails approximately 800 acres of land development and will have approximately 350 permanent employees.

As part of the permitting process, PPL must satisfy administrative requirements of the U.S. Army Corps of Engineers/Pennsylvania Department of Environmental Protection and Salem Township Ordinances. This requires PPL to submit letters from all applicable utilities indicating that adequate facilities exist to provide service to the proposed site. To determine the sanitary flow from the proposed facility we used the Chapter 94 records from the waste water treatment facility for the Susquehanna Plant and proportioned the new flows accordingly. Please see the enclosed calculations. We are requesting that you forward correspondence that states that the existing sanitary conveyance system and sanitary treatment plant have the capacity to accommodate this project. We are assuming our tie in point will be the last manhole on Confers Lane at the south boundary of the Bell Bend Site.

Thank you in advance for your cooperation. Attached is the site plan for your information. If you should have any questions or require additional information, please feel free to contact Vince Kelly [610.774.7611 or Jkelly@pplweb.com] of our office.

Respectfully,

Terry L Harpster

TLH/kw

Enclosure: PPL Bell Bend Waste Water Flow Calculation

cc: (w/ Enclosures)

Karen Karchner
Zoning/Building Code Official
38 Bomboy Lane
PO Box 405
Berwick, PA 18603

Enclosure

PPL Bell Bend Waste Water Flow Calculation

# Susquehanna Units 1 And 2
# Wastewater Flows

| Date | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec | Annual Averages |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Flow, MGD | | | | | | | | | | | | |
| 1 | 0.00641 | 0.01277 | 0.00534 | 0.02111 | 0.02212 | 0.01064 | 0.00792 | 0.01385 | 0.01247 | 0.01287 | 0.02054 | 0.00739 | |
| 2 | 0.00899 | 0.01154 | 0.00458 | 0.02456 | 0.00926 | 0.00854 | 0.00763 | 0.01221 | 0.01035 | 0.01430 | 0.01734 | 0.01030 | |
| 3 | 0.00620 | 0.00499 | 0.01758 | 0.00973 | 0.01159 | 0.00828 | 0.00719 | 0.01319 | 0.01111 | 0.01320 | 0.01057 | 0.01030 | |
| 4 | 0.00773 | 0.00178 | 0.00311 | 0.02146 | 0.01884 | 0.00729 | 0.01382 | 0.01258 | 0.00926 | 0.01274 | 0.01326 | 0.01030 | |
| 5 | 0.00863 | 0.01386 | 0.01456 | 0.02239 | 0.02933 | 0.00994 | 0.01401 | 0.01329 | 0.00947 | 0.00746 | 0.00823 | 0.01280 | |
| 6 | 0.00808 | 0.01554 | 0.01583 | 0.01360 | 0.02426 | 0.01693 | 0.01418 | 0.01187 | 0.01686 | 0.00304 | 0.00909 | 0.01250 | |
| 7 | 0.01080 | 0.01758 | 0.02656 | 0.01281 | 0.01332 | 0.01590 | 0.01618 | 0.01237 | 0.01615 | 0.00998 | 0.00905 | 0.01062 | |
| 8 | 0.00676 | 0.01869 | 0.01411 | 0.02684 | 0.00940 | 0.01376 | 0.01679 | 0.01104 | 0.01940 | 0.01295 | 0.01648 | 0.00805 | |
| 9 | 0.02012 | 0.01066 | 0.01122 | 0.02058 | 0.02757 | 0.01379 | 0.01701 | 0.01333 | 0.00840 | 0.01182 | 0.01688 | 0.00659 | |
| 10 | 0.01871 | 0.01316 | 0.01856 | 0.02386 | 0.01626 | 0.01075 | 0.01687 | 0.00699 | 0.01096 | 0.00747 | 0.01911 | 0.00731 | |
| 11 | 0.01769 | 0.00833 | 0.01418 | 0.02375 | 0.01839 | 0.01722 | 0.01077 | 0.01249 | 0.01829 | 0.01180 | 0.00768 | 0.00876 | |
| 12 | 0.01751 | 0.01222 | 0.01406 | 0.02849 | 0.03625 | 0.02708 | 0.00464 | 0.01259 | 0.01160 | 0.01607 | 0.00828 | 0.00574 | |
| 13 | 0.01724 | 0.00943 | 0.01374 | 0.02853 | 0.01400 | 0.01070 | 0.00488 | 0.00453 | 0.00834 | 0.01396 | 0.01030 | 0.00726 | |
| 14 | 0.01322 | 0.01224 | 0.00971 | 0.02383 | 0.01790 | 0.01002 | 0.01398 | 0.00986 | 0.01752 | 0.01229 | 0.00739 | 0.00894 | |
| 15 | 0.00615 | 0.01329 | 0.01321 | 0.02657 | 0.01750 | 0.00947 | 0.01320 | 0.00695 | 0.00660 | 0.01108 | 0.00739 | 0.00716 | |
| 16 | 0.00697 | 0.01264 | 0.00472 | 0.02329 | 0.01684 | 0.01295 | 0.00878 | 0.01093 | 0.01372 | 0.01338 | 0.01030 | 0.01071 | |
| 17 | 0.00597 | 0.00849 | 0.01870 | 0.02435 | 0.01171 | 0.01083 | 0.00355 | 0.00565 | 0.01511 | 0.01079 | 0.01800 | 0.00819 | |
| 18 | 0.00819 | 0.00747 | 0.01843 | 0.01822 | 0.01341 | 0.01113 | 0.00867 | 0.00881 | 0.01279 | 0.01174 | 0.01390 | 0.00713 | |
| 19 | 0.00940 | 0.01814 | 0.00969 | 0.02106 | 0.01125 | 0.01080 | 0.01056 | 0.00857 | 0.00739 | 0.01112 | 0.01390 | 0.00802 | |
| 20 | 0.02936 | 0.02172 | 0.01103 | 0.02528 | 0.00928 | 0.01219 | 0.01276 | 0.01716 | 0.01645 | 0.01969 | 0.01030 | 0.01484 | |
| 21 | 0.01265 | 0.01817 | 0.01037 | 0.03016 | 0.00841 | 0.01440 | 0.00514 | 0.01906 | 0.00596 | 0.01502 | 0.01030 | 0.01304 | |
| 22 | 0.02879 | 0.01087 | 0.02104 | 0.02796 | 0.00589 | 0.01343 | 0.01028 | 0.00655 | 0.01358 | 0.01419 | 0.01030 | 0.00207 | |
| 23 | 0.02522 | 0.01244 | 0.02135 | 0.02744 | 0.00451 | 0.01275 | 0.01035 | 0.01737 | 0.00222 | 0.01559 | 0.01030 | 0.00610 | |
| 24 | 0.00585 | 0.02697 | 0.01204 | 0.01925 | 0.00671 | 0.01206 | 0.00724 | 0.01542 | 0.01757 | 0.01599 | 0.00739 | 0.00481 | |
| 25 | 0.00680 | 0.01527 | 0.01262 | 0.01621 | 0.00526 | 0.01149 | 0.01717 | 0.01519 | 0.00890 | 0.01668 | 0.00318 | 0.00614 | |
| 26 | 0.00590 | 0.01363 | 0.01114 | 0.02098 | 0.01290 | 0.01210 | 0.01852 | 0.01491 | 0.01485 | 0.01611 | 0.00503 | 0.00722 | |
| 27 | 0.01426 | 0.01598 | 0.01734 | 0.02085 | 0.01475 | 0.00941 | 0.00483 | 0.00665 | 0.02060 | 0.01017 | 0.00503 | 0.00650 | |
| 28 | 0.01586 | 0.00728 | 0.01485 | 0.02493 | 0.01421 | 0.01080 | 0.01202 | 0.03050 | 0.01888 | 0.00991 | 0.01030 | 0.00106 | |
| 29 | 0.01723 | | 0.01760 | 0.02486 | 0.01262 | 0.01032 | 0.01150 | 0.00075 | 0.00887 | 0.01051 | 0.00503 | 0.00693 | |
| 30 | 0.01813 | | 0.00869 | 0.02140 | 0.00885 | 0.00982 | 0.01161 | 0.00929 | 0.01047 | 0.02012 | 0.00739 | 0.00176 | |
| 31 | 0.01121 | | 0.02018 | | 0.01041 | | 0.01760 | 0.01027 | | 0.01678 | | 0.00288 | |
| Total/Month, MGD | 0.39603 | 0.36495 | 0.42624 | 0.67435 | 0.45402 | 0.38459 | 0.34955 | 0.36222 | 0.37214 | 0.39982 | 0.32224 | 0.24124 | 0.39393 |
| Date | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec | Annual Averages |
| Average/Day Gal: | 12,775 | 13,034 | 13,750 | 22,478 | 14,646 | 12,153 | 11,276 | 11,685 | 12,405 | 12,891 | 10,741 | 7,782 | 393,933 |
| No. Employees: | 1,460 | 1,460 | 1,460 | 1,460 | 1,460 | 1,460 | 1,460 | 1,460 | 1,460 | 1,460 | 1,460 | 1,460 | 1,460 |
| Outage Workers: | 0 | 0 | 0 | 1,400 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 117 |
| Total On-Site: | 1,460 | 1,460 | 1,460 | 2,860 | 1,460 | 1,460 | 1,460 | 1,460 | 1,460 | 1,460 | 1,460 | 1,460 | 1,577 |
| Avg. Wastewater Per Capita: | 8.75 | 8.93 | 9.42 | 7.86 | 10.03 | 8.32 | 7.72 | 8.00 | 8.50 | 8.83 | 7.36 | 5.33 | 8.25 |

## Bell Bend Projection

| | No. Workers | Gallons/Capita | Daily Flow Projected | |
|---|---|---|---|---|
| No. Workers During Operation: | 363 | 10.03 | 3,641.39 gallons | 0.003641 MGD |
| No. Workers During Peak: | 3,950 | 10.03 | 39,623.93 gallons | 0.039624 MGD |

**SENDER:** *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Gloria Bobosky, Manager
Berwick Joint Sewer Authority
1108 Frear Avenue
Berwick PA 18603

*COMPLETE THIS SECTION ON DELIVERY*

A. Signature
X Gloria Bobosky
☐ Agent
☐ Addressee

B. Received by (*Printed Name*)

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

OCT 22 2010

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (*Extra Fee*) ☐ Yes

2. Article Number
(*Transfer from service label*) 7009 3410 0000 8705 2743

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

**T. L. Harpster**
VP-Bell Bend Project-Development

**PPL Bell Bend, LLC**
38 Bomboy Lane, Suite 2
Berwick, PA 18603
Tel. 570.802.8111 FAX 570.802.8119
tlharpster@pplweb.com

October 4, 2010

Board of Supervisors
Township of Salem
P.O. Box 405, 38 Bomboy Lane
Berwick, PA 18603

**BELL BEND NUCLEAR POWER PLANT**
**SALEM TOWNSHIP LAND USE REVIEW**
**NPDES PERMIT FOR STORMWATER DISCHARGES**
**BNP-2010-248 Docket No. 52-039**

Acts 67, 68 and 127, which amended the Municipalities Planning Code, direct state agencies to consider comprehensive plans and zoning ordinances when reviewing applications for permitting of facilities and infrastructure, and specify that state agencies may rely upon comprehensive plans and zoning ordinances under certain conditions as described in Sections 619.2 and 1105 of the Municipalities Planning Code. The Pennsylvania Department of Environmental Protection's Policy for Consideration of Local Comprehensive Plans and Zoning Ordinances in DEP Review of Permits for Facilities and Infrastructure (DEP's Land Use Policy) provides direction and guidance to DEP staff, permit applicants, and local and county governments for the implementation of Acts 67, 68 and 127 of 2000. This policy can be found at www.depweb.state.pa.us; keyword: Land Use.

In accordance with DEP's Land Use Policy, enclosed please find a Municipal Land Use Letter that is to be submitted with our permit application to DEP. Please complete the attached form and return within 30 days to:

Name of Applicant: PPL Bell Bend, LLC

Address of Applicant: 38 Bomboy Lane, Suite 2 Berwick, PA 18603

Project Location: Lands to the west and southwest of existing PPL Generation, LLC Susquehanna Steam Electric Station, bounded by Beach Grove Rd. and SR. 0011

Project Description: Electrical Power Generating Plant

**Please do not send this form to DEP**, as we must include the Municipal Land Use Letter with our permit application. If we do not receive a response from you **within 30 days**, we shall proceed to submit our permit application to DEP without the Municipal Land Use Letter. If the Municipal Land Use Letter is not submitted with our permit application, and we provide proof to DEP that we attempted to obtain it, DEP will assume there are no substantive land use conflicts and proceed with the normal application review process.

If you have any questions, please do not hesitate to contact Vince Kelly at 610.774.7611 or jkelly@pplweb.com.

Respectfully,

Terry L. Harpster

TLH/kw

Enclosure: Municipal Land Use Letter

cc: (w/o Enclosures)

Ms. Stacey Imboden
Senior Project Manager
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD 20852

Ms. Jamie Davis
Office of Environmental Programs (3EA30)
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

Mr. Tom Shervinskie
Pa Fish & Boat Commission
450 Robinson Lane
Bellefonte, PA 16823

Ms. Jennifer Kagel
United States Fish & Wildlife Service
Pennsylvania Field Office
315 S. Allen St. #322
State College, PA 16801

Mr. Eugene Trowbridge
Pa Dept Environmental Resources
Northeast Regional Office
2 Public Square
Wilkes-Barre, PA 18711

Ms. Amy Elliott
U.S. Army Corps of Engineers - Baltimore District
State College Field Office
1631 South Atherton Street, Suite 102
State College, PA 16801

Ms. Paula B. Ballaron
Susquehanna River Basin Commission
1721 North Front Street
Harrisburg, PA 17102-0425

Mr. Thomas W. Beauduy
Susquehanna River Basin Commission
1721 North Front Street
Harrisburg, PA 17102-0425

**SENDER:** *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Board of Supervisors
Township of Salem
PO Box 405
38 Bomboy Lane
Berwick PA 18603

BNP-2010-248

*COMPLETE THIS SECTION ON DELIVERY*

A. Signature
x P Owen
☐ Agent
☐ Addressee

B. Received by (*Printed Name*)
P Owens

C. Date of Delivery
10/6/10

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (*Extra Fee*) ☐ Yes

2. Article Number
(*Transfer from service label*) 7002 2410 0002 7420 2449

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

# Township of Salem

Phone: 570-752-4399
Fax: 570-752-4661

*Office: 38 Bomboy Lane • PO Box 405 • Berwick, PA 18603*


October 5, 2010

RECEIVED OCT 08 2010

Mr. Terry L. Harpster
PPL Bell Bend, LLC
38 Bomboy Lane, Suite 2
Berwick, PA 18603

RE: Proposed Electrical Power Generating Plant

Dear Mr. Harpster:

In response to your letter of October 4, 2010, Salem Township adopted a Comprehensive Plan in 1975 and a Zoning Ordinance on March 28, 1995, with amendments on September 23, 1997 and March 23, 2004. Salem Townships is aware that the Comprehensive Plan is outdated. However, it is the belief of Salem Township that the Zoning Ordinance is generally consistent with the Comprehensive Plan.

The Electrical Power Generating Plant proposed by PPL Bell Bend, LLC is located in two Zoning Districts, the A-1 Agricultural District and the C-1 Conservation District. An Electrical Power Generating Plant is listed as a conditional use and will require approval from the Salem Township Board of Supervisors provided all requirements for this type of facility are met. As of today, PPL Bell Bend, LLC has not submitted an application for a conditional use.

Salem Township is in the process of amending the Zoning Ordinance and Map. If the amendments are approved, all of the PPL property will be rezoned to an I-3 Special Industrial District and will still require a conditional use approval.

I would appreciate a copy of the NPDES application for my files.

Please call me at (570) 752-4399, ext. 12, if you require additional information.

Sincerely,

Karen J. Karchner

Karen J. Karchner
Zoning/Building Code Official

**T. L. Harpster**
VP-Bell Bend Project-Development

**PPL Bell Bend, LLC**
38 Bomboy Lane, Suite 2
Berwick, PA 18603
Tel. 570.802.8111 FAX 570.802.8119
tlharpster@pplweb.com

October 4, 2010

Luzerne County Commissioners
20 North Pennsylvania Ave.
Wilkes-Barre, PA 18701

**BELL BEND NUCLEAR POWER PLANT**
**LUZERNE COUNTY LAND USE REVIEW**
**NPDES PERMIT FOR STORMWATER DISCHARGES**
**BNP-2010-249 Docket No. 52-039**

Acts 67, 68 and 127, which amended the Municipalities Planning Code, direct state agencies to consider comprehensive plans and zoning ordinances when reviewing applications for permitting of facilities and infrastructure, and specify that state agencies may rely upon comprehensive plans and zoning ordinances under certain conditions as described in Sections 619.2 and 1105 of the Municipalities Planning Code. The Pennsylvania Department of Environmental Protection's Policy for Consideration of Local Comprehensive Plans and Zoning Ordinances in DEP Review of Permits for Facilities and Infrastructure (DEP's Land Use Policy) provides direction and guidance to DEP staff, permit applicants, and local and county governments for the implementation of Acts 67, 68 and 127 of 2000. This policy can be found at www.depweb.state.pa.us; keyword: Land Use.

In accordance with DEP's Land Use Policy, enclosed please find a County Land Use Letter that is to be submitted with our permit application to DEP. Please complete the attached form and return within 30 days to:

Name of Applicant: PPL Bell Bend, LLC

Address of Applicant: 38 Bomboy Lane, Suite 2 Berwick, PA 18603

Project Location: Lands to the west and southwest of existing PPL Generation, LLC Susquehanna Steam Electric Station, bounded by Beach Grove Rd. and SR. 0011

Project Description: Electrical Power Generating Plant

**Please do not send this form to DEP**, as we must include the County Land Use Letter with our permit application. If we do not receive a response from you **within 30 days**, we shall proceed to submit our permit application to DEP without the County Land Use Letter. If the County Land Use Letter is not submitted with our permit application, and we provide proof to DEP that we attempted to obtain it, DEP will assume there are no substantive land use conflicts and proceed with the normal application review process.

If you have any questions, please do not hesitate to contact Vince Kelly at 610.774.7611 or jkelly@pplweb.com.

Respectfully,

Terry L. Harpster

TLH/kw

Enclosure: County Land Use Letter

cc: (w/o Enclosure)

Ms. Stacey Imboden
Senior Project Manager
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD 20852

Ms. Jamie Davis
Office of Environmental Programs (3EA30)
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

Mr. Tom Shervinskie
Pa Fish & Boat Commission
450 Robinson Lane
Bellefonte, PA 16823

Ms. Jennifer Kagel
United States Fish & Wildlife Service
Pennsylvania Field Office
315 S. Allen St. #322
State College, PA 16801

Mr. Eugene Trowbridge
Pa Dept Environmental Resources
Northeast Regional Office
2 Public Square
Wilkes-Barre, PA 18711

Ms. Amy Elliott
U.S. Army Corps of Engineers - Baltimore District
State College Field Office
1631 South Atherton Street, Suite 102
State College, PA 16801

Ms. Paula B. Ballaron
Susquehanna River Basin Commission
1721 North Front Street
Harrisburg, PA 17102-0425

Mr. Thomas W. Beauduy
Susquehanna River Basin Commission
1721 North Front Street
Harrisburg, PA 17102-0425

**SENDER:** *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Luzerne County Commissioners
20 North Pennsylvania Ave.
Wilkes-Barre PA 18701

BNP-2010-249

*COMPLETE THIS SECTION ON DELIVERY*

A. Signature
X Janel Blasnevic ☐ Agent ☐ Addressee

B. Received by (Printed Name) Janel B
C. Date of Delivery 6/8/10

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7009 2820 0000 9411 9916

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

## COUNTY LAND USE LETTER

Date: 10-15-10

To: PPL Bell Bend

RECEIVED OCT 20 2010

From: Luzerne County Planning Agency/Commission

Re: Electrical Power Generating Plant

The County of Luzerne states that it:

✓ has adopted a county or multi-county comprehensive plan.
If yes, please provide date of adoption: 1964

_____ has not adopted a county or multi-county comprehensive plan.

*If applicable:*

The above referenced project:

✓ is consistent with the adopted county or multi-county comprehensive plan.
___ is not consistent with the adopted county or multi-county comprehensive plan.

Additional Comments (attach additional sheets if necessary):

Submitted By: Adrian Merolli

| | |
|---|---|
| Name | EXECUTIVE DIRECTOR |
| Title | LUZERNE COUNTY PLANNING COMMISSION<br>COUNTY COURTHOUSE |
| Contact Information (Address & Phone) | 200 NO. RIVER ST.<br>WILKES-BARRE, Pa. 18711<br>570-825-1560 |
| Signature | Adrian Merolli |
| Date | 10-15-10 |

# Section E
# PA Natural Diversity Inventory Form

1. PNDI search results
2. Correspondence with Agencies and proof of receipt

Status

PNDI consultations have been occurring with the US Fish and Wildlife Service since 2007 and the PADCNR, PA Fish and Boat, and PA Game Commission since 2008. The most recent PNDI search notices were sent to each respective agency in September 2011.

PA Fish and Boat identified the following rare or protected species that could be impacted by project implementation; the Northern Cricket frog, Yellow Lampmussel, and Green Floater mussel. The DNCR response letter indicated the Baltimore Checkerspot and Mulberry Wing as two species of concern that could potentially be impacted by the project. PA Game Commission indicated the Indiana Bat is a species of concern and defers to the US Fish and Wildlife Service for project clearance.

All agencies requested additional project information. Subsequent correspondence between PPL and each agency is included in this section. Only one clearance letter from PA Fish and Boat for the Northern Cricket frog was received at the time of the June 2011 Joint Permit submittal. No additional clearances were obtained at the time of JPA Rev 1 submittal. PPL is actively working to meet agency requirements and clearance letters will be provided as an addendum to this application once they are obtained.

Appendix B Supplemental Reports

- A Field Survey of Terrestrial Fauna at the Proposed Bell Bend Nuclear Power Plant Site, Luzerne County, PA; Normandeau Associates, Inc., Rev. 5, September 2011.
- Impingement and Entrainment Sampling for the Proposed Bell Bend Nuclear Power Plant at the SSES Circulating Water Supply System Intake Structure, Luzerne County, PA; Normandeau Associates, Inc., Rev. 1, June 2010.
- Mussel Survey in the Susquehanna River in the Vicinity of the Proposed Bell Bend Nuclear Power Plant Site, Luzerne County, PA; Normandeau Associates, Inc., Rev. 1, June 2010.
- Indiana Bat (Myotis sodalis) Roost Tree Survey Report, Proposed Bell Bend NPP Site, Luzerne County, Pennsylvania; Normandeau Associates, Inc., October 2011.

**T. L. Harpster**
VP-Bell Bend Project-Development

**PPL Bell Bend, LLC**
38 Bomboy Lane, Suite 2
Berwick, PA 18603
Tel. 570.802.8111 FAX 570.802.8119
tlharpster@pplweb.com

September 20, 2010

Ms. Chris Firestone
Pennsylvania Department of Conservation and Natural Resources
Bureau of Forestry
Ecological Services Section
P.O. Box 8552
Harrisburg, PA 17105-8552

**BELL BEND NUCLEAR POWER PLANT**
**LARGE PROJECT SPECIES**
**OF SPECIAL CONCERN SCREEN**
**SALEM TOWNSHIP, LUZERNE COUNTY, PA**
**BNP-2010-205 Docket No. 52-039**

PPL Bell Bend, LLC is conducting an environmental evaluation for a potential nuclear power plant adjacent to the Susquehanna Steam Electric Station (SSES) site in Salem Township, Luzerne County, Pennsylvania. For screening purposes, the project area boundaries as shown on Figure 1 encompass the entire footprint of possible disturbance for the construction and maintenance of a nuclear power plant under consideration for the site, as well as the existing SSES site. The existing active SSES operating unit is within this boundary, but will not be altered. This letter is a follow up to a similar letter sent December 21, 2007 and your response dated March 24, 2008 with a reference PNDI #019535.

PPL Bell Bend, LLC wishes to screen the entire area as shown on Figure 1 for species of special concern under jurisdiction of the Pennsylvania Department of Conservation and Natural Resources. Please provide all current and historical information concerning the occurrence of rare, threatened and endangered species, as well as any other ecological resources of special concern within the project area. 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 Bradley Wise at 610.774.6508 or bawise@pplweb.com.

Thank you for your assistance.

Respectfully,

Terry L Harpster

TLH/dw

Enclosures 1) Site Location Map
2) PNDI Review Form

cc: Ms. Stacey Imboden
Senior Project Manager
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD 20852

Ms. Jamie Davis
Office of Environmental Programs (3EA30)
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

Mr. Tom Shervinskie
Pa Fish & Boat Commission
450 Robinson Lane
Bellefonte, PA 16823

Ms. Jennifer Kagel
United States Fish & Wildlife Service
Pennsylvania Field Office
315 S. Allen St. #322
State College, PA 16801

Mr. Eugene Trowbridge
Pa Dept Environmental Resources
Northeast Regional Office
2 Public Square
Wilkes-Barre, PA 18711

Ms. Amy Elliott
U.S. Army Corps of Engineers - Baltimore District
State College Field Office
1631 South Atherton Street, Suite 102
State College, PA 16801

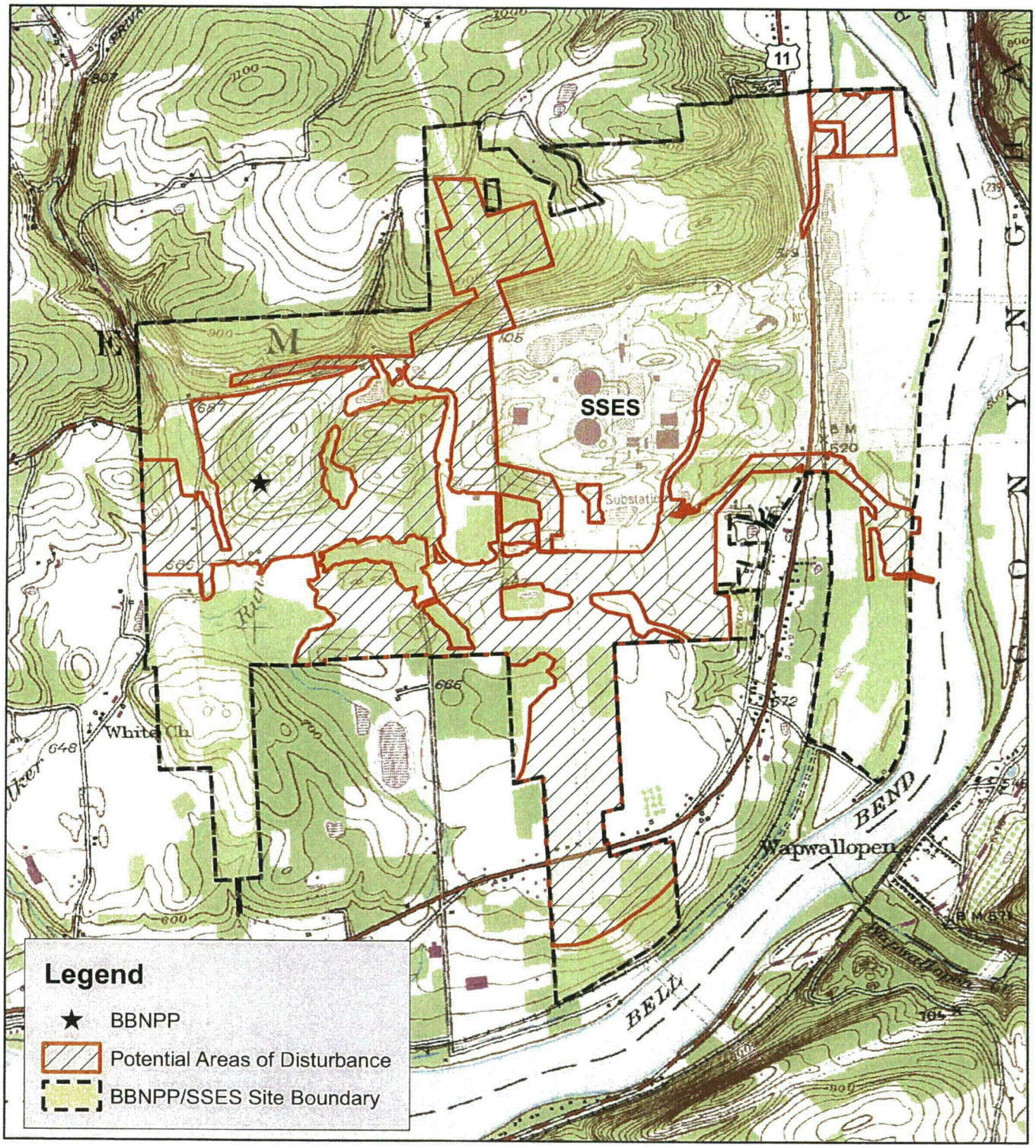
Ms. Paula B. Ballaron
Susquehanna River Basin Commission
1721 North Front Street
Harrisburg, PA 17102-0425

Mr. Thomas W. Beauduy
Susquehanna River Basin Commission
1721 North Front Street
Harrisburg, PA 17102-0425

| | | |
|---|---|---|
| bcc: | B. A. Wise | bawise@pplweb.com |
| | J. S. Fields | jsfields@pplweb.com |
| | R. Sgarro | rrsgarro@pplweb.com |
| | D. Klinch | David.Klinch@constellation.com |

Enclosure 1

Site Location Map




0.5 0.25 0 0.5 Miles

Figure 1.
**Bell Bend NPP**
**Site Location Map**

N

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

date: 07/27/10
prepared by: s.sherman
project: 21766.004

rev. date:
prepared for: b.lees
file name: Figure1.BBNPP_Site_USGS

Enclosure 2

PNDI Review Form

# 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: PPL Bell Bend, LLC
Address: 38 Bomboy Lane, Suite 2, Berwick, PA 18603
Phone Number: 570.802.8100 Fax Number: 570.802.8119

## Contact Person Information - if different from applicant

Name: Bradley A. Wise, Environmental Permitting Supervisor, PPL Bell Bend LLC
Address: Two North Ninth Street (GENPL4), Allentown, PA 18101-1179
Phone Number: (610) 774-6508 Fax Number: (610) 774-2618

## Project Information

Project Name: Bell Bend Nuclear Power Plant Project
Project Locations: Lat N 41d 5m 20.7s Lon W 76d 9m 4.5s
Municipality: Salem Township County: Luzerne
[X] 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

## Project Description

Proposed Project Activity (including All earth disturbance areas and current conditions)
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Total Acres of Property: 1,700 Acreage to be Impacted: 700 acres **(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 0
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

**SENDER:** *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Attn: Ms. Chris Firestone
PA Dept of Conservation and
Natural Resources
Bureau of Forestry
Ecological Services Section
P.O. Box 8552
Harrisburg PA 17105-8552

*COMPLETE THIS SECTION ON DELIVERY*

A. Signature

X

☐ Agent
☐ Addres

B. Received by (*Printed Name*)

C. Date of Deliv

SEP 22 2010

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandi
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (*Extra Fee*) ☐ Yes

2. Article Number
(*Transfer from service label*) 7009 3410 0000 8705 0206

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-15

**T. L. Harpster**
VP-Bell Bend Project-Development

**PPL Bell Bend, LLC**
38 Bomboy Lane, Suite 2
Berwick, PA 18603
Tel. 570.802.8111 FAX 570.802.8119
tlharpster@pplweb.com

September 20, 2010

Mr. Christopher A. Urban
Pennsylvania Fish and Boat Commission
Division of Environmental Services
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823

**BELL BEND NUCLEAR POWER PLANT**
**LARGE PROJECT SPECIES**
**OF SPECIAL CONCERN SCREEN**
**SALEM TOWNSHIP, LUZERNE COUNTY, PA**
**BNP-2010-206 Docket No. 52-039**

PPL Bell Bend, LLC is conducting an environmental evaluation for a potential nuclear power plant adjacent to the Susquehanna Steam Electric Station (SSES) site in Salem Township, Luzerne County, Pennsylvania. For screening purposes, the project area boundaries as shown on Figure 1 encompass the entire footprint of possible disturbance for the construction and maintenance of a nuclear power plant under consideration for the site, as well as the existing SSES site. The existing active SSES operating unit is within this boundary but will not be altered. This letter is a follow up to a similar letter sent December 21, 2007 and your response dated April 24, 2008 with a reference SIR #27486.

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Thank you for your assistance.

Respectfully,

Terry L Harpster

TLH/dw

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2) PNDI Review Form

cc: Ms. Stacey Imboden
Senior Project Manager
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD 20852

Ms. Jamie Davis
Office of Environmental Programs (3EA30)
U.S. Environmental Protection Agency
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Mr. Tom Shervinskie
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Ms. Jennifer Kagel
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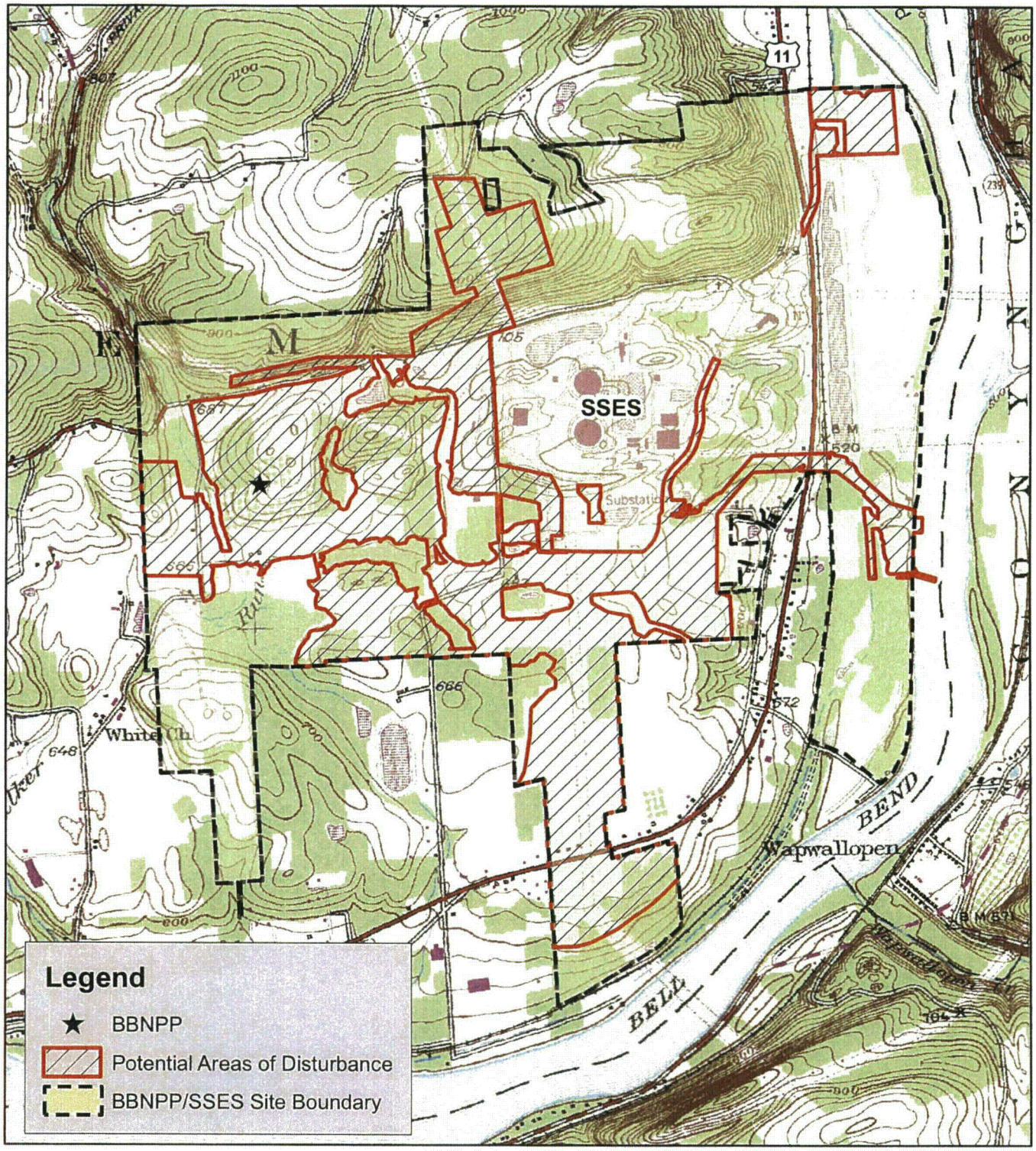
| | | |
|---|---|---|
| bcc: | B. A. Wise | bawise@pplweb.com |
| | J. S. Fields | jsfields@pplweb.com |
| | R. Sgarro | rrsgarro@pplweb.com |
| | D. Klinch | David.Klinch@constellation.com |

Enclosure 1

Site Location Map




0.5 0.25 0 0.5 Miles

Figure 1.
**Bell Bend NPP**
**Site Location Map**

N

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

date: 07/27/10
prepared by: s.sherman
project: 21766.004

rev. date:
prepared for: b.lees
file name: Figure1.BBNPP_Site_USGS

Enclosure 2

PNDI Review Form

# Pennsylvania Natural Diversity Inventory

*Project Planning & Environmental Review Form*

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Phone Number: 570.802.8100 Fax Number: 570.802.8119

## Contact Person Information - if different from applicant

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Address: Two North Ninth Street (GENPL4), Allentown, PA 18101-1179
Phone Number: (610) 774-6508 Fax Number: (610) 774-2618

## Project Information

Project Name: Bell Bend Nuclear Power Plant Project
Project Locations: Lat N 41d 5m 20.7s Lon W 76d 9m 4.5s
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U.S.G.S. Quad Name: Berwick, PA

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400 Market St., PO Box 8552
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fax: 717-771-0271

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Bureau of Land Management
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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

**SENDER:** *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Attn: Mr. Christopher A. Urban
PA Fish and Boat Commission
Division of Environmental Services
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823

*COMPLETE THIS SECTION ON DELIVERY*

A. Signature

X Karl Lutz

☐ Agent
☐ Addressee

B. Received by (*Printed Name*) Karl Lutz

C. Date of Delivery 9-23-10

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (*Extra Fee*) ☐ Yes

2. Article Number
(*Transfer from service label*) 7009 3410 0000 8705 0190

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

**T. L. Harpster**
VP-Bell Bend Project-Development

**PPL Bell Bend, LLC**
38 Bomboy Lane, Suite 2
Berwick, PA 18603
Tel. 570.802.8111 FAX 570.802.8119
tlharpster@pplweb.com

September 20, 2010

Ms. Tracey Librandi Mumma
Pennsylvania Game Commission
Bureau of Land Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue
Harrisburg, PA 17110-9797

**BELL BEND NUCLEAR POWER PLANT**
**LARGE PROJECT SPECIES**
**OF SPECIAL CONCERN SCREEN**
**SALEM TOWNSHIP, LUZERNE COUNTY, PA**
**BNP-2010-207 Docket No. 52-039**

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TLH/dw

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11545 Rockville Pike
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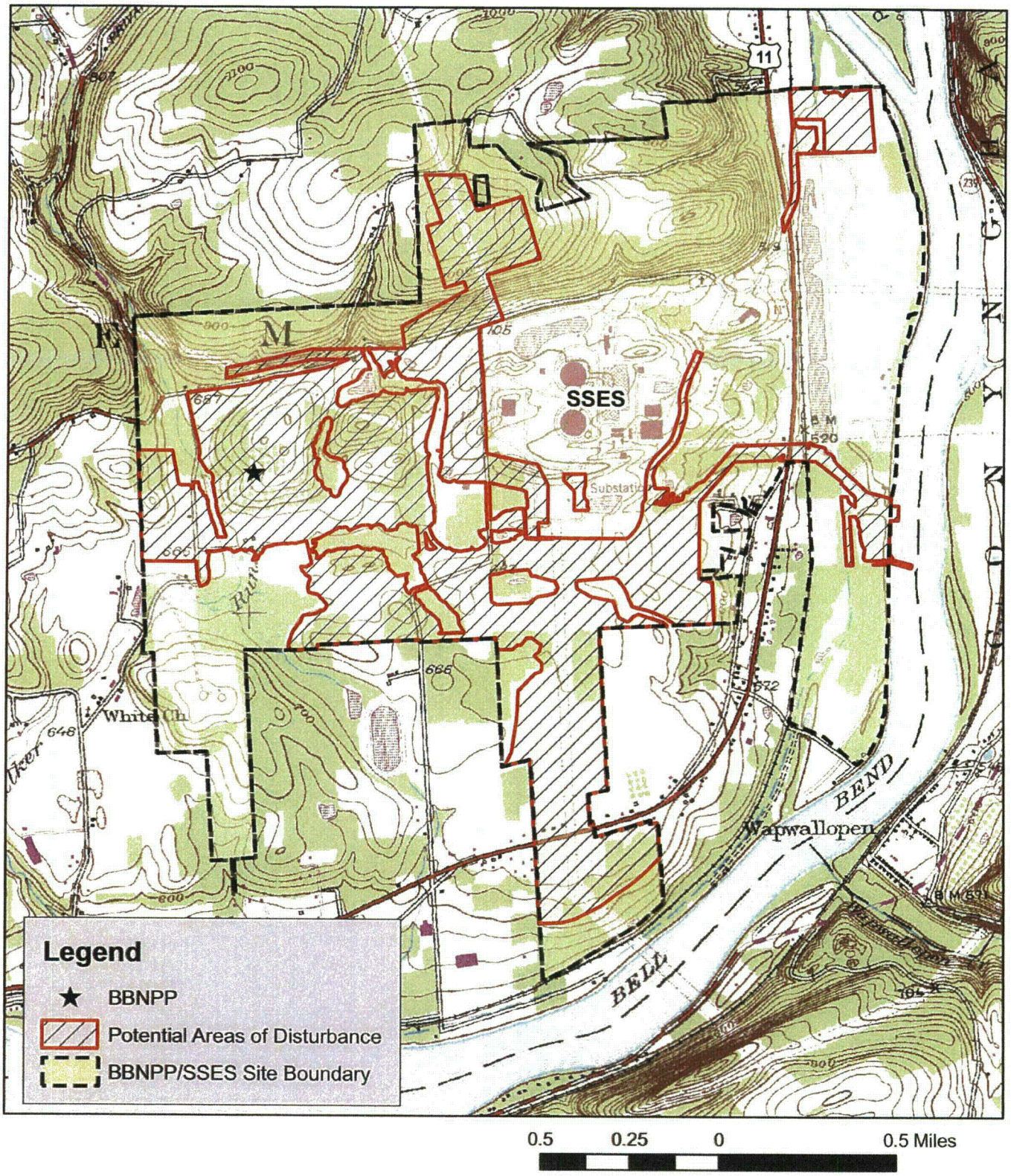
|---|---|---|
| bcc: | B. A. Wise | bawise@pplweb.com |
| | J. S. Fields | jsfields@pplweb.com |
| | R. Sgarro | rrsgarro@pplweb.com |
| | D. Klinch | David.Klinch@constellation.com |

Enclosure 1

Site Location Map

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**Bell Bend NPP**
**Site Location Map**

N

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

date: 07/27/10
prepared by: s.sherman
project: 21766.004

rev. date:
prepared for: b.lees
file name: Figure1.BBNPP_Site_USGS

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Attn: Ms. Tracey Librand Mumma
PA Game Commission
Bureau of Land Development
Division of Environmental Planning
and Habitat Protection
2001 Elmerton Ave.
Harrisburg, PA 17110-9797

*COMPLETE THIS SECTION ON DELIVERY*

A. Signature
X K. Kenz
☐ Agent
☐ Address

B. Received by (*Printed Name*)

C. Date of Delive
9-22-1

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandi
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (*Extra Fee*) ☐ Y

2. Article Number
(*Transfer from service l*) 7009 3410 0000 8705 0183

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1

**T. L. Harpster**
VP-Bell Bend Project-Development

**PPL Bell Bend, LLC**
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Berwick, PA 18603
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September 20, 2010

Ms. Pamela Shellenberger
U. S. Fish and Wildlife Service
Endangered Species Section
315 South Allen Street, Suite 322
State College, PA 16801

**BELL BEND NUCLEAR POWER PLANT**
**LARGE PROJECT SPECIES**
**OF SPECIAL CONCERN SCREEN**
**SALEM TOWNSHIP, LUZERNE COUNTY, PA**
**BNP-2010-208 Docket No. 52-039**

PPL Bell Bend, LLC is conducting an environmental evaluation for a potential nuclear power plant adjacent to the Susquehanna Steam Electric Station (SSES) site in Salem Township, Luzerne County, Pennsylvania. For screening purposes, the project area boundaries as shown on Figure 1 encompass the entire footprint of possible disturbance for the construction and maintenance of a nuclear power plant under consideration for the site, as well as the existing SSES site. The existing active SSES operating unit is within this boundary but will not be altered. This letter is a follow up to a similar letter sent March 26, 2008 and your agency's response dated April 21, 2008 with a reference USFWS Project #2008-0518.

Please note that the project team has initiated consultation with USFWS with respect to the project's impacts to Indiana bat at the proposed BBNPP.

PPL Bell Bend, LLC wishes to screen the entire area as shown on Figure 1 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 Bradley Wise at 610.774.6508 or bawise@pplweb.com.

Thank you for your assistance.

Respectfully,

Terry L Harpster

TLH/dw

Enclosures 1) Site Location Map
2) PNDI Review Form

cc: Ms. Stacey Imboden
Senior Project Manager
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD 20852

Ms. Jamie Davis
Office of Environmental Programs (3EA30)
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

Mr. Tom Shervinskie
Pa Fish & Boat Commission
450 Robinson Lane
Bellefonte, PA 16823

Ms. Jennifer Kagel
United States Fish & Wildlife Service
Pennsylvania Field Office
315 S. Allen St. #322
State College, PA 16801

Mr. Eugene Trowbridge
Pa Dept Environmental Resources
Northeast Regional Office
2 Public Square
Wilkes-Barre, PA 18711

Ms. Amy Elliott
U.S. Army Corps of Engineers - Baltimore District
State College Field Office
1631 South Atherton Street, Suite 102
State College, PA 16801

Ms. Paula B. Ballaron
Susquehanna River Basin Commission
1721 North Front Street
Harrisburg, PA 17102-0425

Mr. Thomas W. Beauduy
Susquehanna River Basin Commission
1721 North Front Street
Harrisburg, PA 17102-0425

| | | |
|---|---|---|
| bcc: | B. A. Wise | bawise@pplweb.com |
| | J. S. Fields | jsfields@pplweb.com |
| | R. Sgarro | rrsgarro@pplweb.com |
| | D. Klinch | David.Klinch@constellation.com |

Enclosure 1

Site Location Map

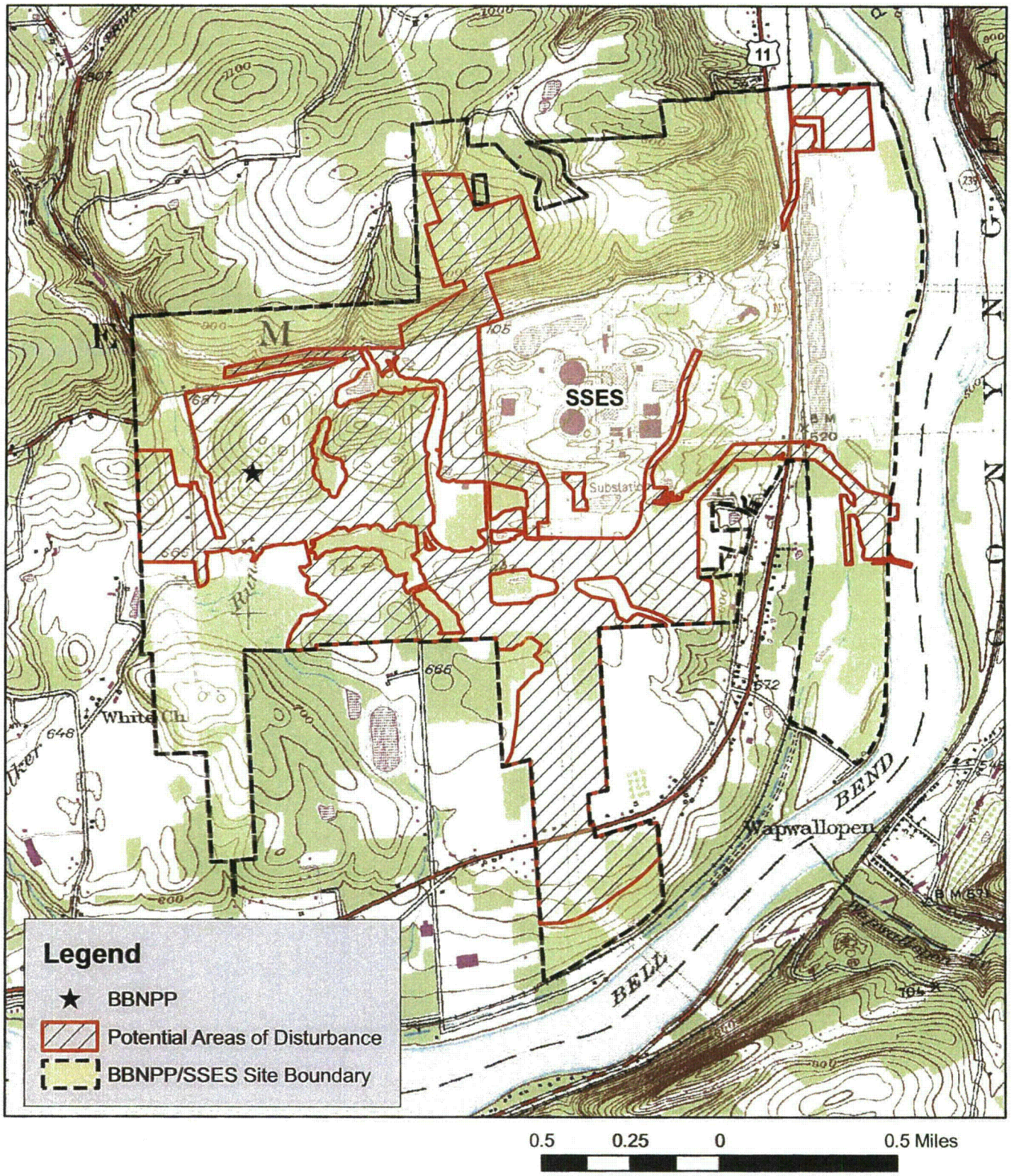



Figure 1.
**Bell Bend NPP**
**Site Location Map**

N

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

date: 07/27/10
prepared by: s.sherman
project: 21766.004

rev. date:
prepared for: b.lees
file name: Figure1.BBNPP_Site_USGS

Enclosure 2

PNDI Review Form

# 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: PPL Bell Bend, LLC
Address: 38 Bomboy Lane, Suite 2, Berwick, PA 18603
Phone Number: 570.802.8100 Fax Number: 570.802.8119

## Contact Person Information - if different from applicant

Name: Bradley A. Wise, Environmental Permitting Supervisor, PPL Bell Bend LLC
Address: Two North Ninth Street (GENPL4), Allentown, PA 18101-1179
Phone Number: (610) 774-6508 Fax Number: (610) 774-2618

## Project Information

Project Name: Bell Bend Nuclear Power Plant Project
Project Locations: Lat N 41d 5m 20.7s Lon W 76d 9m 4.5s
Municipality: Salem Township County: Luzerne
[X] 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

## Project Description

Proposed Project Activity (including All earth disturbance areas and current conditions)
The Bell Bend Nuclear Power Plant 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 adjacent to 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 suppport facilities and structures; landscaping; and subsequent operation and maintenance of plant facilities and grounds. Land use of areas potentially disturbed consists predominatly of active/former farmland and forest, to roadways, and natural vegetation (e.g., shrub-scrub).

Total Acres of Property: 1,700 Acreage to be Impacted: 700 acres **(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 0
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

**SENDER:** *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Attn. Ms. Pamela Shellenberger
U.S. Fish and Wildlife Service
Endangered Species section
315 South Allen St. Suite 322
State College, PA 16801

*COMPLETE THIS SECTION ON DELIVERY*

A. Signature

X Diane B Thees ☐ Agent ☐ Addressee

B. Received by (*Printed Name*) C. Date of Delivery

Dianne B Thees 9/23/10

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (*Extra Fee*) ☐ Yes

2. Article Number (*Transfer from service label*) 7009 3410 0000 8705 0176

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-15

# Pennsylvania Fish & Boat Commission

*established 1866*

RECEIVED OCT 25 2010

**Division of Environmental Services**
**Natural Diversity Section**
450 Robinson Lane
Bellefonte, PA 16823-9620
*(814) 359-5237 Fax: (814) 359-5175*

October 14, 2010

**IN REPLY REFER TO**
SIR# 35087

BRADLEY WISE
PPL
TWO NORTH NINTH ST
BERWICK, PA 18603

**RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species**
**BELL BEND NUCLEAR POWER PLANT**
**UPDATE TO SIR 27486**
**SALEM Township, LUZERNE County, Pennsylvania**

Dear Mr. WISE:

I have examined the map accompanying your recent correspondence, which shows the location for the above referenced project. Based on records maintained in the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files, the following rare or protected species are known from the vicinity of the project site:

| Common Name | Scientific Name | PA Status |
|---|---|---|
| Northern cricket frog | *Acris crepitans* | endangered |
| Yellow lampmussel | *Lampsilis cariosa* | rare |
| Green floater | *Lasmigona subviridis* | rare |

The Northern cricket frog is a small (less than 2") frog species found in a wide variety of habitats including permanent bodies of water such as slow-moving streams, ponds, lakes, marshes, bogs, and swamps, but also semi-permanent ponds and seasonal forest pools.. Breeding occurs from May to August with metamorphosed froglets emerging July to September. The Northern cricket frog occurs in small, isolated populations in eastern Pennsylvania. These small populations are threatened by pollution, and filling/clearing of wetlands and breeding habitat.

If wetlands, waterways, or vernal pools are to be directly or indirectly impacted by the project activity, we will need to conduct a more thorough evaluation of the potential adverse impacts to the northern cricket frog. Please provide us with the following information to assist us with our review: detailed project plans including a project narrative, identification and delineation of wetlands or streams within the direct and indirect impact area, and color photographs (dated, labeled, and keyed to a map) of wetlands, vernal pools, or waterways expected to be impacted. A habitat assessment or presence/absence survey may be requested for the species of concern.

Freshwater mussels are the most imperiled taxonomic group in North America. Nearly half of the species known to occur in the Commonwealth are now extirpated (locally extinct) from Pennsylvania. We

are concerned about direct and indirect (i.e., runoff) effects that the proposed project may have on the species of concern. Freshwater mussel species are extremely vulnerable to physical (i.e., siltation, dredging, trenching, rip-rap) and chemical (i.e., pH, temperature, dissolved oxygen, organic contaminants, heavy metals) changes to their aquatic environment. Therefore, we recommend construction techniques that eliminate in-stream work, sedimentation and changes to water quality. I recommend that you avoid any in-stream disturbance or water quality degradation in the Susquehanna River during and after the project installation. Storm sewers and retention basins should be designed so as to minimize/remove all silt from the water before it is released into the river. Strict erosion and sedimentation control measures, as well as best management practices should be employed.

If wetlands or water bodies *are not* to be disturbed by the proposed activity, and provided that best management practices are employed and strict erosion and sedimentation control measures are maintained, I do not foresee any adverse impacts to the species of concern listed above or any other rare or protected species under Pennsylvania Fish and Boat Commission jurisdiction.

Note that this office performed no field inspection of the project area. Consequently, comments in this letter are not meant to address other issues or concerns that might arise concerning matters under Pennsylvania Fish and Boat Commission jurisdiction or that of other authorities. If you have any questions regarding this response, please contact Kathy Gipe at 814-359-5186 and **refer to the SIR number at the top of this letter**. Thank you for your cooperation and attention to this matter of nongame species conservation.

Sincerely,

Christopher A. Urban, Chief
Natural Diversity Section

CAU/KDG/mr

pennsylvania
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

RECEIVED NOV 01 2010

BUREAU OF FORESTRY

Date November 1, 2010 **PNDI Number: 21008**

Terry L. Harpster
PPL Bell Bend, LLC
38 Bomboy Lane, Suite 2
Berwick, PA 18603
FAX: 570-802-8119(Hard copy will not follow)
Re: Bell Bend Nuclear Power Plant
County: Luzerne Township: Salem

Dear Mr. Harpster,

Thank you for submission of the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt Number 21008 for review. PA Department of Conservation and Natural Resources screened this project for potential impacts to species and resources of concern under DCNR's responsibility, which includes plants, terrestrial invertebrates, natural communities, and geologic features only.
There are no plant species or geologic features of concern in your project area. There are two terrestrial invertebrates of concern that were known to be in the project area.

*Euphydras phaeton*, **Baltimore Checkerspot, habitat is wet meadows, bogs, and marshes with flight in June through August. Larval food is Turtlehead, Hairy Beardtongue, English plantain, Foxglove and White Ash and the adult food is nectar from Milkweed, Virburnums and Wild Rose.**
*Poanes massasolt*, **Mulberry Wing, habitat is freshwater marshes or bogs with flight in late June through mid August. Larval food is *Carex stricta* and adult food is any flower nectar.**

When more detailed project information becomes available, please submit this project to our office for further review of potential impacts to these terrestrial species.

This response represents the most up-to-date summary of the PNDI data files and is valid for one (1) year from the date of this letter. An absence of recorded information does not necessarily imply actual conditions on-site. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered. Should the proposed work continue beyond the period covered by this letter, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative and accurate map.

This finding applies to impacts to DCNR only. To complete your review of state and federally-listed threatened and endangered species and species of special concern, please be sure the U.S. Fish and Wildlife Service, PA Game Commission, and the Pennsylvania Fish and Boat Commission have been contacted regarding this project as directed by the online PNDI ER Tool found at www.naturalheritage.state.pa.us

Sincerely,

Richard Shockey, Environmental Review Manager FOR Chris Firestone, Wild Plant Program Mgr.
Ph: 717-772-0263 ~ c-rshockey@state.pa.us

COMMONWEALTH OF PENNSYLVANIA
**Pennsylvania Game Commission**

**2001 ELMERTON AVENUE**
HARRISBURG, PA 17110-9797

*"To manage all wild birds, mammals and their habitats for current and future generations."*

ADMINISTRATIVE BUREAUS:
ADMINISTRATION.....717-787-5670
HUMAN RESOURCES.....717-787-7836
FISCAL MANAGEMENT.....717-787-7314
CONTRACTS AND PROCUREMENT.....717-787-6594
LICENSING.....717-787-2084
OFFICE SERVICES.....717-787-2118
WILDLIFE MANAGEMENT.....717-787-5529
INFORMATION & EDUCATION.....717-787-6286
WILDLIFE PROTECTION.....717-783-6526
WILDLIFE HABITAT MANAGEMENT.....717-787-6818
REAL ESTATE DIVISION.....717-787-6568
AUTOMATED TECHNOLOGY SERVICES.....717-787-4076

www.pgc.state.pa.us

BUREAU OF WILDLIFE HABITAT MANAGEMENT
717-787-6818

RECEIVED DEC 28 2010

December 28, 2010 **Large Project Review**

Mr. Bradley A. Wise
PPL Bell Bend, LLC
Two North Ninth Street (GENGL4)
Allentown, Pennsylvania 18101-1179

Re: Bell Bend Nuclear Power Plant Project – Proposed Electrical Plant
Salem Township, Luzerne County, Pennsylvania

Dear Mr. Wise,

Thank you for submitting the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt Number Bell Bend Nuclear Power Plant Project for review. The Pennsylvania Game Commission (PGC) screened this project for potential impacts to species and resources of concern under PGC responsibility, which includes birds and mammals only.

**Potential Impact Anticipated**

PNDI records indicate species or resources of concern are located in the vicinity of the project. The PGC has received and thoroughly reviewed the information that you provided to this office, as well as PNDI data, and has determined that potential impacts to the following endangered species may be associated with your project:

| Scientific Name | Common Name | PA Status | Federal Status |
|---|---|---|---|
| *Myotis sodalis* | Indiana Bat | ENDANGERED | ENDANGERED |

**Next Steps**

Indiana bats are a federally listed endangered species under the jurisdiction of the U.S. Fish and Wildlife Service. As a result, our agency defers comments on potential impacts to Indiana bats to the U.S. Fish and Wildlife Service.

This response represents the most up-to-date summary of the PNDI data files and is valid for one (1) year from the date of this letter. An absence of recorded information does not necessarily

imply actual conditions on site. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered.

Should the proposed work continue beyond the period covered by this letter, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative and accurate map). If the proposed work has not changed and no additional information concerning listed species is found, the project will be cleared for PNDI requirements under this agency for an additional year.

This finding applies to impacts to birds and mammals only. To complete your review of state and federally-listed threatened and endangered species and species of special concern, please be sure that the U.S. Fish and Wildlife Service, the PA Department of Conservation and Natural Resources, and/or the PA Fish and Boat Commission have been contacted regarding this project as directed by the online PNDI ER Tool found at www.naturalheritage.state.pa.us.

Sincerely,

Olivia A. Braun
Environmental Planner
Division of Environmental Planning & Habitat Protection
Bureau of Wildlife Habitat Management
Phone: 717-787-4250, Extension 3128
Fax: 717-787-6957
e-Mail: OBraun@state.pa.us

A PNHP Partner

PNHP
Pennsylvania Natural Heritage Program

OAB/oab

cc: Pamela Shellenberger, U.S. Fish & Wildlife Service
Librandi Mumma, PGC
DuBrock, PGC
Brauning, PGC
Butchkoski, PGC
Turner, PGC
Terry L. Harpster, PPL
File

**T. L. Harpster**
VP-Bell Bend Project-Development

**PPL Bell Bend, LLC**
38 Bomboy Lane, Suite 2
Berwick, PA 18603
Tel. 570.802.8111 FAX 570.802.8119
tlharpster@pplweb.com

January 14, 2011

Ms. Kathy Gipe
Pennsylvania Fish and Boat Commission
Division of Environmental Services
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823

**BELL BEND NUCLEAR POWER PLANT**
**SIR #35087, SPECIES IMPACT REVIEW**
**NORTHERN CRICKET FROG**
**BNP-2011-004 Docket No. 52-039**

References: 1) PAFBC-2010-283, Christopher Urban, PFBC, to Bradley Wise, "Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species, Update to SIR 27486", October 14, 2010

PPL Bell Bend, LLC is providing herein a response to the Commission's correspondence of October 14, 2010 (SIR 35087, update to SIR 27486)(Reference 1). Specifically, PPL is providing information requested by the Commission to aid in the assessment of potential impact to the newly listed as "endangered" Northern cricket frog (*Acris crepitans*).

This letter provides a brief introduction to important characteristics of the project as related to Northern cricket frog habitat and associated impacts at the Bell Bend Nuclear Power Plant (BBNPP) site. Additionally, this letter provides the Commission with two project topical reports on terrestrial fauna (including amphibians) and wetlands at the site, Enclosures 1 and 2 respectively.

These reports describe the methods and findings of surveys completed between 2007 and 2010, and include faunal observations as well as the locations, types, and characteristics of wetlands and streams at the BBNPP site. As described in the Terrestrial Fauna report, biologists evaluating the BBNPP site reported hearing the call of a Northern cricket frog twice on a single day in November, 2007. The species has not been seen or observed otherwise at the BBNPP site or adjacent lands associated with the Susquehanna Steam Electric Station and Riverlands Nature Preserve. On-going field work by Dr. Brian Mangan of Kings College, and the staff of Ecology III have failed to find this species on-site. The locations of the observations were in the western part of the watershed of Walker Run, as shown in Enclosure 1.

As part of project siting and design, BBNPP has undergone an extensive wetland avoidance and minimization program, including substantial redesign of major project elements in response and coordination with state and federal regulatory agencies, including the Commission. The development of the project proposes less than 2 acres of direct wetland impact within the 1,991 acres of land supporting project development. In addition to the direct wetlands impacts, vegetation management, primarily associated with transmission line right-of-way maintenance, will permanently convert approximately 9 acres of wetlands from a mixed forested/emergent/scrub community to a low-growing emergent/scrub community. A mitigation

program for BBNPP, developed in coordination with state and federal agencies, including the Commission, provides for stream and wetland restoration and creation to offset unavoidable impacts of the project. The Commission contacts for the BBNPP project have been Tom Shervinskie and Mark Hartle.

Should you have any questions or require additional information, please don't hesitate to Brad Wise of my staff at (610) 774-6508 or bawise@pplweb.com.

Respectfully,

Terry L. Harpster

TLH/kw

Enclosures: 1) A Field Survey of Terrestrial Fauna at the Proposed Bell Bend Nuclear Power Plant Site Luzerne Country, Pennsylvania, Rev. 4, December, 2010 (Provided on DVD)

2) Wetlands Delineation and Exceptional Value Wetlands Analysis Report for the Proposed Bell Bend Nuclear Power Plant Site, Rev. 5, November, 2010. (Provided on DVD)

Enclosure 1

A Field Survey of Terrestrial Fauna at the Proposed Bell Bend Nuclear Power Plant Site
Luzerne Country, Pennsylvania, Rev. 4, December, 2010 (Provided on DVD).

Enclosure 2

Wetlands Delineation and Exceptional Value Wetlands Analysis Report for the Proposed Bell Bend Nuclear Power Plant Site, Rev. 5, November, 2010. (Provided on DVD)

**T. L. Harpster**
VP- Bell Bend Project-Development

**PPL Bell Bend, LLC**
38 Bomboy Lane, Suite2
Berwick, PA 18603
Tel. 570.802.8111 FAX 570.802.8119
tlharpster@pplweb.com

March 4, 2011

Ms. Kathy Gipe
Pennsylvania Fish and Boat Commission
Division of Environmental Services
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823

**BELL BEND NUCLEAR POWER PLANT**
**SIR #27486, SPECIES IMPACT REVIEW**
**FRESHWATER MUSSEL SURVEY**
**BNP-2011-049 Docket No. 52-039**

References: 1) PAFBC-2010-283, Christopher Urban, PFBC, to Bradley Wise, "Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species, Update to SIR 27486", October 14, 2010

PPL Bell Bend, LLC is providing herein a response to the Commission's correspondence of October 14, 2010 (Reference 1).

In response to your telephone request of February 14, we have enclosed the "Mussel Survey in the Susquehanna River in the Vicinity of the Proposed Bell Bend Nuclear Power Plant Site, Luzerne County, Pennsylvania" prepared by Normandeau Associates. While the survey was performed in October 2007, the report was revised to incorporate a figure change resulting from the Bell Bend Nuclear Power Plant (BBNPP) Plot Plan Change, hence its July 2010 revision date.

Should you have any questions or require additional information, please don't hesitate to contact Brad Wise of my staff at (610) 774-6508 or bawise@pplweb.com.

Respectfully,

Terry L. Harpster

TLH/kw

Enclosure: Mussel Survey in the Susquehanna River in the Vicinity of the at the Proposed Bell Bend Nuclear Power Plant Site, Luzerne County, Pennsylvania, Rev. 2, July 2010.

Enclosure

Mussel Survey in the Susquehanna River in the Vicinity of the at the Proposed Bell Bend Nuclear Power Plant Site, Luzerne County, Pennsylvania, Rev. 2, July 2010

# Pennsylvania Fish & Boat Commission

*established 1866*

**Division of Environmental Services**
**Natural Diversity Section**
450 Robinson Lane
Bellefonte, PA 16823-9620
*(814) 359-5237 Fax: (814) 359-5175*

RECEIVED MAR 14 2011

March 10, 2011

**IN REPLY REFER TO**
SIR# 35087

BRADLEY WISE
PPL
TWO NORTH NINTH ST
ALLENTOWN, PA 18101

**RE: Secondary Species Impact Review (SIR) #35087**
**BELL BEND NUCLEAR POWER PLANT**
**SALEM Township, LUZERNE County, Pennsylvania**

Dear Mr. WISE:

I have examined the map accompanying your recent correspondence, which shows the location for the above referenced project. Based on records maintained in the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files, the following rare or protected species are known from the vicinity of the project site:

| Common Name | Scientific Name | PA Status |
|---|---|---|
| Northern cricket frog | *Acris crepitans* | endangered |
| Yellow lampmussel | *Lampsilis cariosa* | rare |
| Green floater | *Lasmigona subviridis* | rare |

You sent additional information related to this project in response to our letter of October 14, 2010. According to our review of the wetland delineation report, the field survey of terrestrial fauna, and the proposed project plan, we do not anticipate adverse impacts from the proposed project to the northern cricket frog, which has not been confirmed on the site.

However, it has come to our attention that the proposed water withdrawal as well as the intake and outfall structures, have the potential to adversely impact the freshwater mussel species of concern. Preliminary mussel surveys confirmed the presence of rare mussels in the project area. These survey results were referenced in the wetland delineation report, but this office has not yet received the survey results. Additional mussel surveys and instream flow analysis are planned in 2011. The results of this work should be forwarded to this office for review of the potential impacts from the proposed project to the Commonwealth's freshwater mussel resources.

Note that this office performed no field inspection of the project area. Consequently, comments in this letter are not meant to address other issues or concerns that might arise concerning matters under Pennsylvania Fish and Boat Commission jurisdiction or that of other authorities. If you have any questions regarding this response, please contact Nevin Welte at 412-586-2334 and **refer to the SIR**

**number at the top of this letter**. Thank you for your cooperation and attention to this matter of nongame species conservation.

Sincerely,

Christopher A. Urban, Chief
Natural Diversity Section

CAU/NW/mr

Cc: Tom Shervinski, PFBC
Mark Hartle, PFBC
Eugene Trowbridge, PADEP
Jennifer Kagel, USFWS

**T. L. Harpster**
VP-Bell Bend Project-Development

**PPL Bell Bend, LLC**
38 Bomboy Lane, Suite 2
Berwick, PA 18603
Tel. 570.802.8111 FAX 570.802.8119
tlharpster@pplweb.com

October 7, 2011

Mr. Chris Firestone
Pennsylvania Department of Conservation and Natural Resources
Bureau of Forestry
Ecological Services
Section P.O. Box 8552
Harrisburg, PA 17105-8552

**BELL BEND NUCLEAR POWER PLANT**
**PLANT LARGE PROJECT SPECIES**
**OF SPECIAL CONCERN SCREEN UPDATE**
**SALEM TOWNSHIP, LUZERNE COUNTY, PA**
**BNP-2011-183 Docket No. 52-039**

This letter is the annual notification required for Pennsylvania Natural Diversity Inventory (PNDI) changes until a NRC Combined Operating License (COL) is issued for the proposed Bell Bend Nuclear Power Plant Project. The COL is currently expected to be issued in late 2014. This Update is for PNDI Number: 21008. Included for your review is a site location map (Enclosure 1), and Project Planning & Environmental Review Form (Enclosure 2).

PPL Bell Bend, LLC is conducting an environmental evaluation for this potential nuclear power plant adjacent to the Susquehanna Steam Electric Station (SSES) site in Salem Township, Luzerne County, Pennsylvania. For screening purposes, the project area boundaries as shown on Enclosure 1 encompass the entire footprint of possible disturbance for the construction and maintenance of a nuclear power plant under consideration for the site, as well as the operating SSES site.

PPL Bell Bend, LLC wishes to screen the entire area as shown on Enclosure 1 for species of special concern under jurisdiction of the Pennsylvania Department of Conservation and Natural Resources. Please provide all current and historical information concerning the occurrence of rare, threatened and endangered species, as well as any other ecological resources of special concern within the project area. 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).

If you have any questions or need additional information, please contact Bradley Wise at 610.774.6508 or bawise@pplweb.com.

Respectfully,

Terry L Harpster

TLH/kw

Enclosures: 1) Site Location Map
2) PNDI Review Form

cc: (w/ Enclosures)

Ms. Stacey Imboden
Senior Project Manager
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD 20852

Ms. Jamie Davis
Office of Environmental Programs (3EA30)
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

Mr. Tom Shervinskie
Pa Fish & Boat Commission
450 Robinson Lane
Bellefonte, PA 16823

Ms. Jennifer Kagel
United States Fish & Wildlife Service
Pennsylvania Field Office
315 S. Allen St. #322
State College, PA 16801

Mr. Eugene Trowbridge
Pa Dept of Environmental Resources
Northeast Regional Office
2 Public Square
Wilkes-Barre, PA 18711

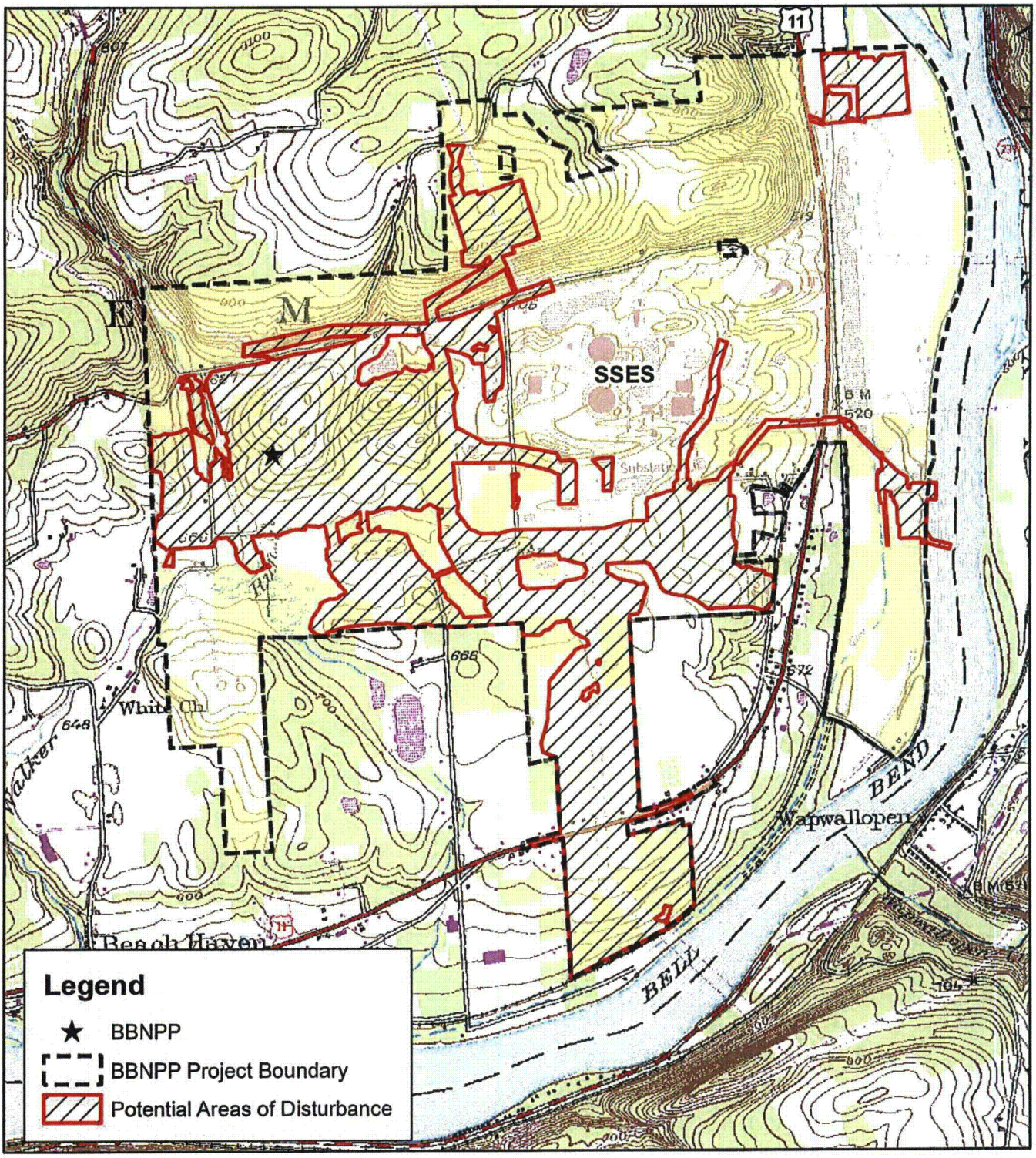
Ms. Amy Elliott
U.S. Army Corps of Engineers - Baltimore District
State College Field Office
1631 South Atherton Street, Suite 102
State College, PA 16801

Ms. Paula B. Ballaron
Susquehanna River Basin Commission
1721 North Front Street
Harrisburg, PA 17102-0425

Mr. Thomas W. Beauduy
Susquehanna River Basin Commission
1721 North Front Street
Harrisburg, PA 17102-0425

Enclosure 1

Site Location Map




0.5 0.25 0 0.5 Miles

Figure 1.
**Bell Bend NPP**
**Site Location Map**

N

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

date: 07/27/10
prepared by: s.sherman
project: 22474.000

rev. date: 09/30/10, 09/06/11
prepared for: b.lees
file name: Figure1.BBNPP_Site_USGS

Enclosure 2

PNDI Review Form

# 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: PPL Bell Bend, LLC
Address: 38 Bomboy Lane, Suite 2, Berwick, PA 18603
Phone Number: 570.802.8100 Fax Number: 570.802.8119

## Contact Person Information - if different from applicant

Name: Bradley A. Wise, Environmental Permitting Supervisor, PPL Bell Bend LLC
Address: Two North Ninth Street (GENPL4), Allentown, PA 18101-1179
Phone Number: (610) 774-6508 Fax Number: (610) 774-2618

## Project Information

Project Name: Bell Bend Nuclear Power Plant Project
Project Locations: Lat N 41d 5m 20.7s Lon W 76d 9m 4.5s
Municipality: Salem Township County: Luzerne
[X] 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

## Project Description

Proposed Project Activity (including All earth disturbance areas and current conditions)
The Bell Bend Nuclear Power Plant 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 adjacent to 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 suppport facilities and structures; landscaping; and subsequent operation and maintenance of plant facilities and grounds. Land use of areas potentially disturbed consists predominatly of active/former farmland and forest, to roadways, and natural vegetation (e.g., shrub-scrub).

Total Acres of Property: 2,055 Acreage to be Impacted: 687 acres **(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 0
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

**T. L. Harpster**
VP-Bell Bend Project-Development

**PPL Bell Bend, LLC**
38 Bomboy Lane, Suite 2
Berwick, PA 18603
Tel. 570.802.8111 FAX 570.802.8119
tlharpster@pplweb.com

October 7, 2011

Mr. Christopher A. Urban
Pennsylvania Fish and Boat Commission
Division of Environmental Services
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823

**BELL BEND NUCLEAR POWER PLANT**
**PLANT LARGE PROJECT SPECIES**
**OF SPECIAL CONCERN SCREEN UPDATE**
**SALEM TOWNSHIP, LUZERNE COUNTY, PA**
**BNP-2011-184 Docket No. 52-039**

This letter is the annual notification required for Pennsylvania Natural Diversity Inventory (PNDI) changes until a NRC Combined Operating License (COL) is issued for the proposed Bell Bend Nuclear Power Plant Project. The COL is currently expected to be issued in late 2014. This Update is for PNDI Number: SIR 27486. Included for your review is a site location map (Enclosure 1), and Project Planning & Environmental Review Form. (Enclosure 2)

PPL Bell Bend, LLC is conducting an environmental evaluation for this potential nuclear power plant adjacent to the Susquehanna Steam Electric Station (SSES) site in Salem Township, Luzerne County, Pennsylvania. For screening purposes, the project area boundaries as shown on Enclosure 1 encompass the entire footprint of possible disturbance for the construction and maintenance of a nuclear power plant under consideration for the site, as well as the operating SSES site.

PPL Bell Bend, LLC wishes to screen the entire area as shown on Enclosure 1 for species of special concern under jurisdiction of the Pennsylvania Fish and Boat Commission. Please provide all current and historical information concerning the occurrence of rare, threatened and endangered species, as well as any other ecological resources of special concern within the project area. 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).

If you have any questions or need additional information, please contact Bradley Wise at 610.774.6508 or bawise@pplweb.com.

Respectfully,

Terry L Harpster

TLH/kw

Enclosures: 1) Site Location Map
2) PNDI Review Form

cc: (w/ Enclosures)

Ms. Stacey Imboden
Senior Project Manager
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD 20852

Ms. Jamie Davis
Office of Environmental Programs (3EA30)
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

Mr. Tom Shervinskie
Pa Fish & Boat Commission
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Ms. Jennifer Kagel
United States Fish & Wildlife Service
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Pa Dept of Environmental Resources
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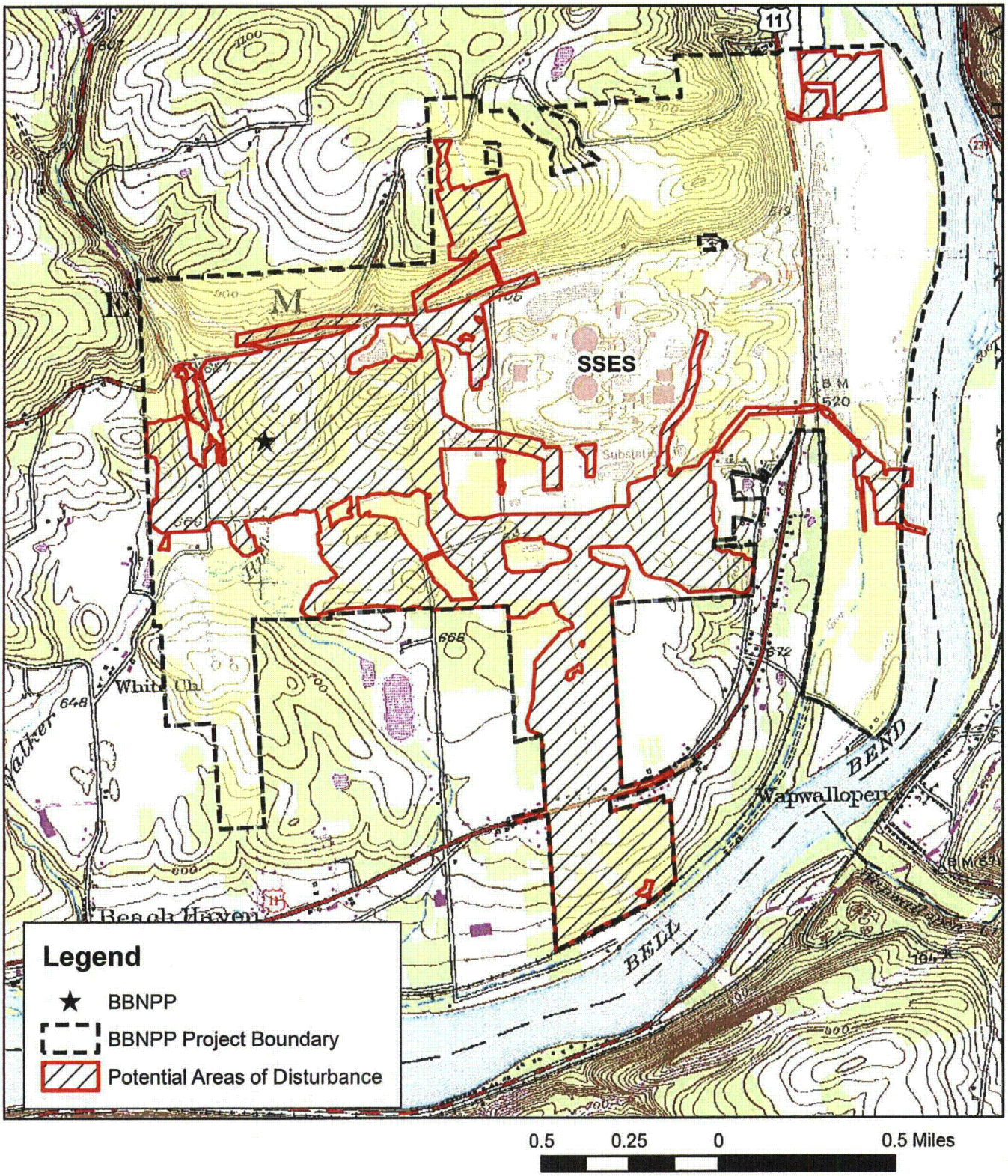
Enclosure 1

Site Location Map




0.5 0.25 0 0.5 Miles

Figure 1.
**Bell Bend NPP**
**Site Location Map**

N

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

date: 07/27/10
prepared by: s.sherman
project: 22474.000

rev. date: 09/30/10, 09/06/11
prepared for: b.lees
file name: Figure1.BBNPP_Site_USGS

Enclosure 2

PNDI Review Form

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Phone Number: (610) 774-6508 Fax Number: (610) 774-2618

## Project Information

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Municipality: Salem Township County: Luzerne
[X] 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

## Project Description

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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

**T. L. Harpster**
VP-Bell Bend Project-Development

**PPL Bell Bend, LLC**
38 Bomboy Lane, Suite 2
Berwick, PA 18603
Tel. 570.802.8111 FAX 570.802.8119
tlharpster@pplweb.com

October 7, 2011

Ms. Tracey Librandi Mumma
Pennsylvania Game Commission
Bureau of Land Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue
Harrisburg, PA 17110-9797

**BELL BEND NUCLEAR POWER PLANT**
**PLANT LARGE PROJECT SPECIES**
**OF SPECIAL CONCERN SCREEN UPDATE**
**SALEM TOWNSHIP, LUZERNE COUNTY, PA**
**BNP-2011-185 Docket No. 52-039**

This letter is the annual notification required for Pennsylvania Natural Diversity Inventory (PNDI) changes until a NRC Combined Operating License (COL) is issued for the proposed Bell Bend Nuclear Power Plant Project. The COL is currently expected to be issued in late 2014. This is a Large Project Review. Included for your review is a site location map (Enclosure 1), and Project Planning & Environmental Review Form (Enclosure 2).

PPL Bell Bend, LLC is conducting an environmental evaluation for this potential nuclear power plant adjacent to the Susquehanna Steam Electric Station (SSES) site in Salem Township, Luzerne County, Pennsylvania. For screening purposes, the project area boundaries as shown on Enclosure 1 encompass the entire footprint of possible disturbance for the construction and maintenance of a nuclear power plant under consideration for the site, as well as the operating SSES site.

PPL Bell Bend, LLC wishes to screen the entire area as shown on Enclosure 1 for species of special concern under jurisdiction of the Pennsylvania Game Commission. Please provide all current and historical information concerning the occurrence of rare, threatened and endangered species, as well as any other ecological resources of special concern within the project area. 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).

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Respectfully,

Terry L Harpster

TLH/kw

Enclosures: 1) Site Location Map
2) PNDI Review Form

cc: (w/ Enclosure)

Ms. Stacey Imboden
Senior Project Manager
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD 20852

Ms. Jamie Davis
Office of Environmental Programs (3EA30)
U.S. Environmental Protection Agency
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Enclosure 1

Site Location Map

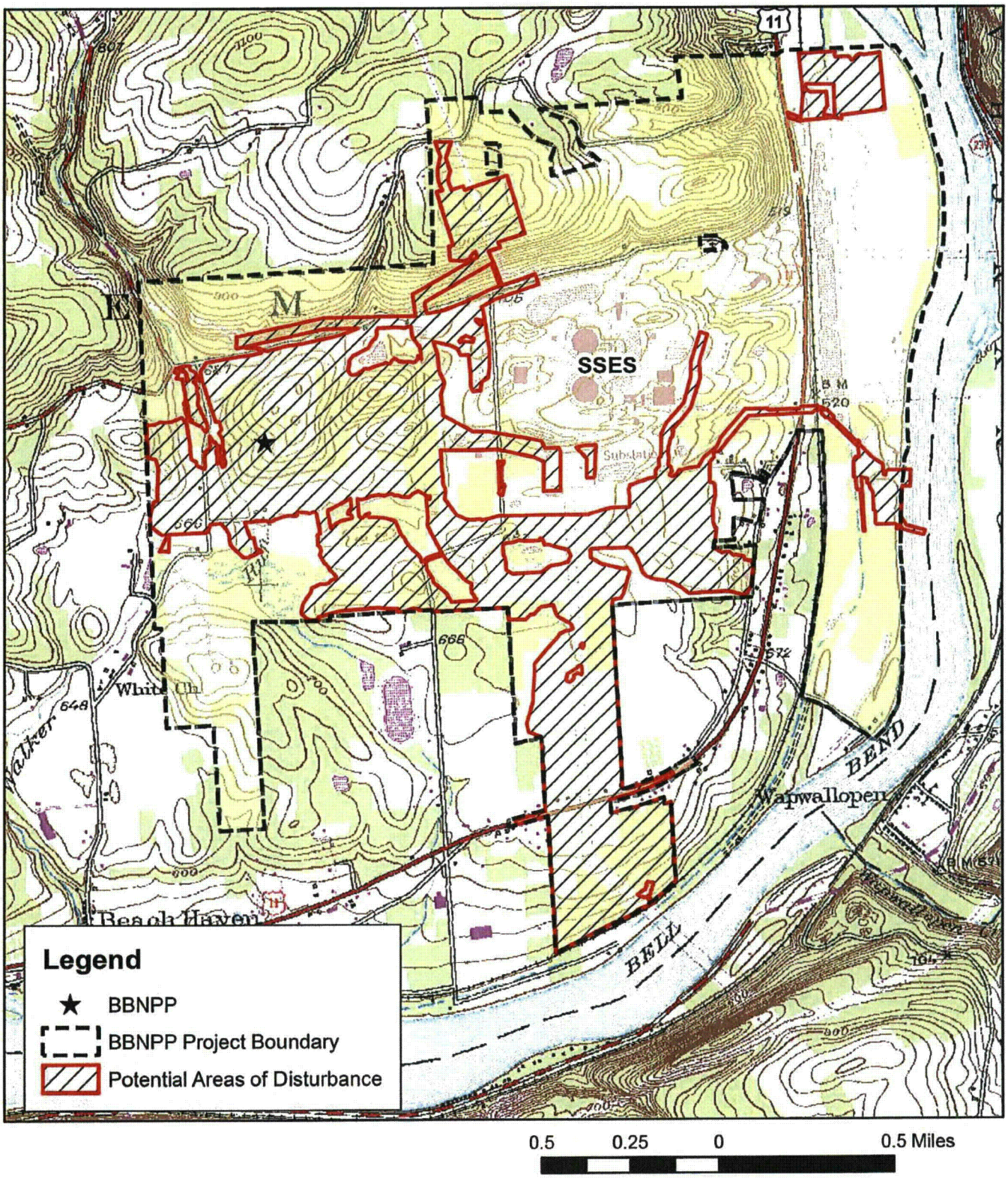


Figure 1.
**Bell Bend NPP**
**Site Location Map**

N

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

date: 07/27/10
prepared by: s.sherman
project: 22474.000

rev. date: 09/30/10, 09/06/11
prepared for: b.lees
file name: Figure1.BBNPP_Site_USGS

Enclosure 2

PNDI Review Form

# Pennsylvania Natural Diversity Inventory

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Phone Number: (610) 774-6508 Fax Number: (610) 774-2618

## Project Information

Project Name: Bell Bend Nuclear Power Plant Project
Project Locations: Lat N 41d 5m 20.7s Lon W 76d 9m 4.5s
Municipality: Salem Township County: Luzerne
[X] 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

## Project Description

Proposed Project Activity (including All earth disturbance areas and current conditions)
The Bell Bend Nuclear Power Plant 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 adjacent to 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 suppport facilities and structures; landscaping; and subsequent operation and maintenance of plant facilities and grounds. Land use of areas potentially disturbed consists predominatly of active/former farmland and forest, to roadways, and natural vegetation (e.g., shrub-scrub).

Total Acres of Property: 2,055 Acreage to be Impacted: 687 acres **(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
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**T. L. Harpster**
VP-Bell Bend Project-Development

**PPL Bell Bend, LLC**
38 Bomboy Lane, Suite 2
Berwick, PA 18603
Tel. 570.802.8111 FAX 570.802.8119
tlharpster@pplweb.com

October 7, 2011

Ms. Pamela Shellenberger
U. S. Fish and Wildlife Service
Endangered Species Section
315 South Allen Street, Suite 322
State College, PA 16801

**BELL BEND NUCLEAR POWER PLANT**
**PLANT LARGE PROJECT SPECIES**
**OF SPECIAL CONCERN SCREEN**
**SALEM TOWNSHIP, LUZERNE COUNTY, PA**
**BNP-2011-186 Docket No. 52-039**

This letter is the annual notification required for Pennsylvania Natural Diversity Inventory (PNDI) changes until a NRC Combined Operating License (COL) is issued for the proposed Bell Bend Nuclear Power Plant Project. The COL is currently expected to be issued in late 2014. This letter is a follow up to similar letters sent March 26, 2008 and September 20, 2010 with a reference to USFWS Project #2008-0518. Included for your review is a site location map (Enclosure 1), and Project Planning & Environmental Review Form (Enclosure 2).

PPL Bell Bend, LLC is conducting an environmental evaluation for this potential nuclear power plant adjacent to the Susquehanna Steam Electric Station (SSES) site in Salem Township, Luzerne County, Pennsylvania. For screening purposes, the project area boundaries as shown on Enclosure 1 encompass the entire footprint of possible disturbance for the construction and maintenance of a nuclear power plant under consideration for the site, as well as the operating SSES site.

Please note that the project team has initiated consultation with U.S. Fish and Wildlife Service (USFWS) with respect to the project's potential impacts to the Indiana bat in the vicinity of the proposed BBNPP.

PPL Bell Bend, LLC wishes to screen the entire area as shown on Enclosure 1 for species of special concern under jurisdiction of the USFWS. 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).

If you have any questions or need additional information, please contact Bradley Wise at 610.774.6508 or bawise@pplweb.com.

Respectfully,

Terry L Harpster

TLH/kw

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cc: (w/ Enclosure)

Ms. Stacey Imboden
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11545 Rockville Pike
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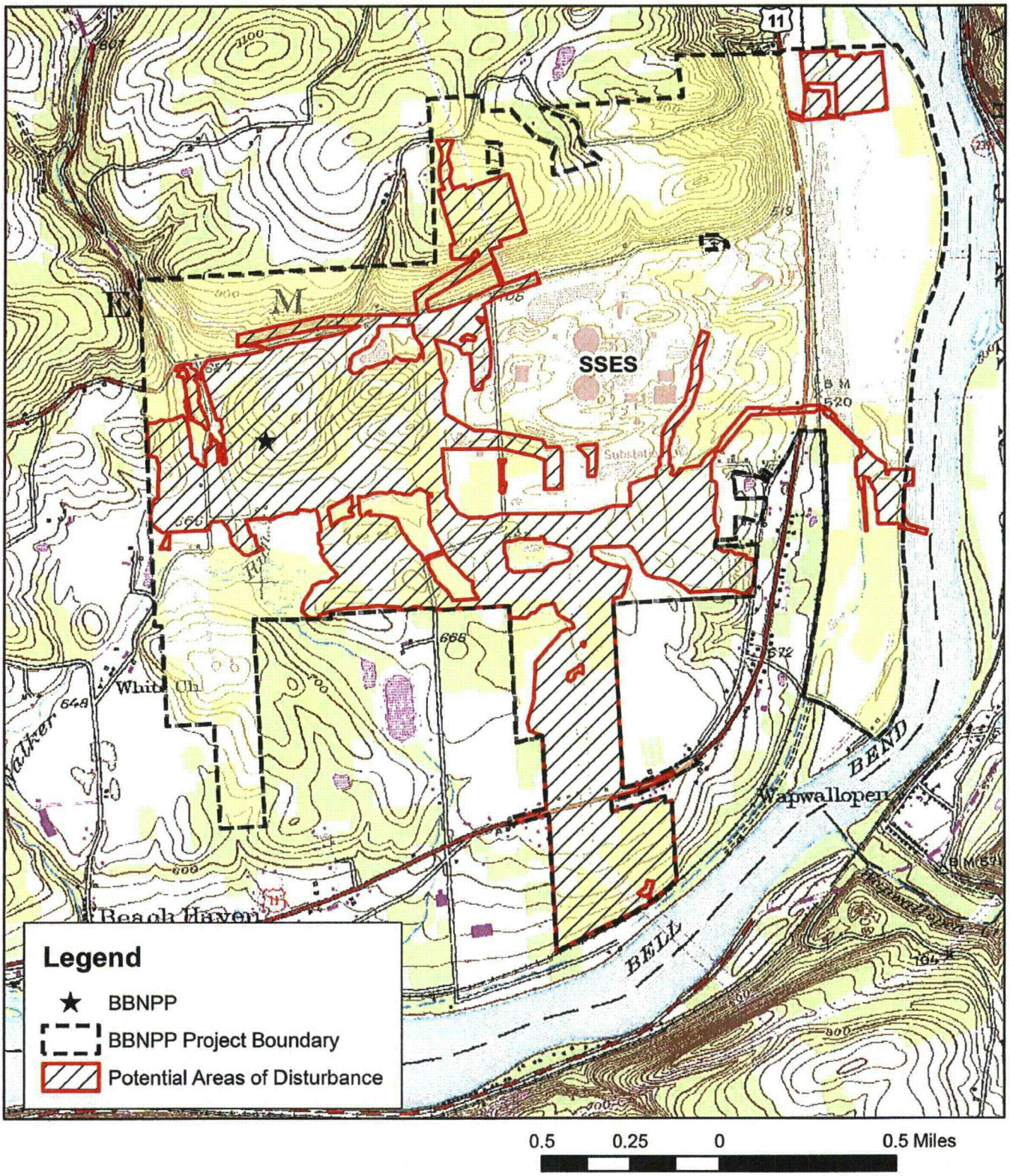
Enclosure 1

Site Location Map

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US Fish and Wildlife Service
Endangered Species Biologist
315 South Allen St., Suite 322
State College, PA 16801
no faxes please

pennsylvania
DEPARTMENT OF CONSERVATION
AND NATURAL RESOURCES

BUREAU OF FORESTRY

October 24, 2011

**PNDI Number: 21544**

**Terry Harpster**
**PPL Bell Bend LLC**
358 Bomboy Lane, Suite 2
Berwick, PA 18603
FAX: 570-802-8119 (hard copy will not follow)

Re: Bell Bend Nuclear Power Plant
Salem Twp., Luzerne County

Dear Mr. Harpster,

Thank you for your submission of the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt Number **21544** for review. PA Department of Conservation and Natural Resources screened this project for potential impacts to species and resources of concern under DCNR's responsibility, which includes plants, terrestrial invertebrates, natural communities, and geologic features only.

**No Impact Anticipated**

PNDI records indicate there are no plant species or geologic features of concern in your project area. There are two terrestrial invertebrates of concern previously found onsite.

*Euphydryas phaeton* (Baltimore Checkerspot, S3) is a butterfly species of concern known from previous surveys to be found onsite. It inhabits moist areas such as wet meadows, bogs, and marshes. The larvae of this species use Turtlehead, Hairy Beardtongue, English plantain, Foxglove and White Ash as host plants; adult food sources are nectar from Milkweed, Virburnums and Wild Rose.

*Poanes massasoit* (Mulberry Wing, S2) is another butterfly species of concern known from previous collection on the project area. Habitat includes freshwater marshes or bogs. The larvae of this species use *Carex stricta* and other sedges as host plants; adult food source is flower nectar.

As a voluntary conservation measure, DCNR suggests using these host and food species in your eventual revegetation plan. This would provide additional habitat for these species. As these species utilize bog and wet, marshy areas as habitat, continue to avoid impacting wetlands onsite. DCNR has determined that no impact is likely to occur to species of special concern under our jurisdiction as a result of this project. If more information becomes available, or plans change to impact wetlands, please contact DCNR for further coordination.

This response represents the most up-to-date summary of the PNDI data files and is valid for one (1) year from the date of this letter. An absence of recorded information does not necessarily imply actual conditions on-site. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered. Should the proposed work continue beyond the period covered by this letter, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative and accurate map).

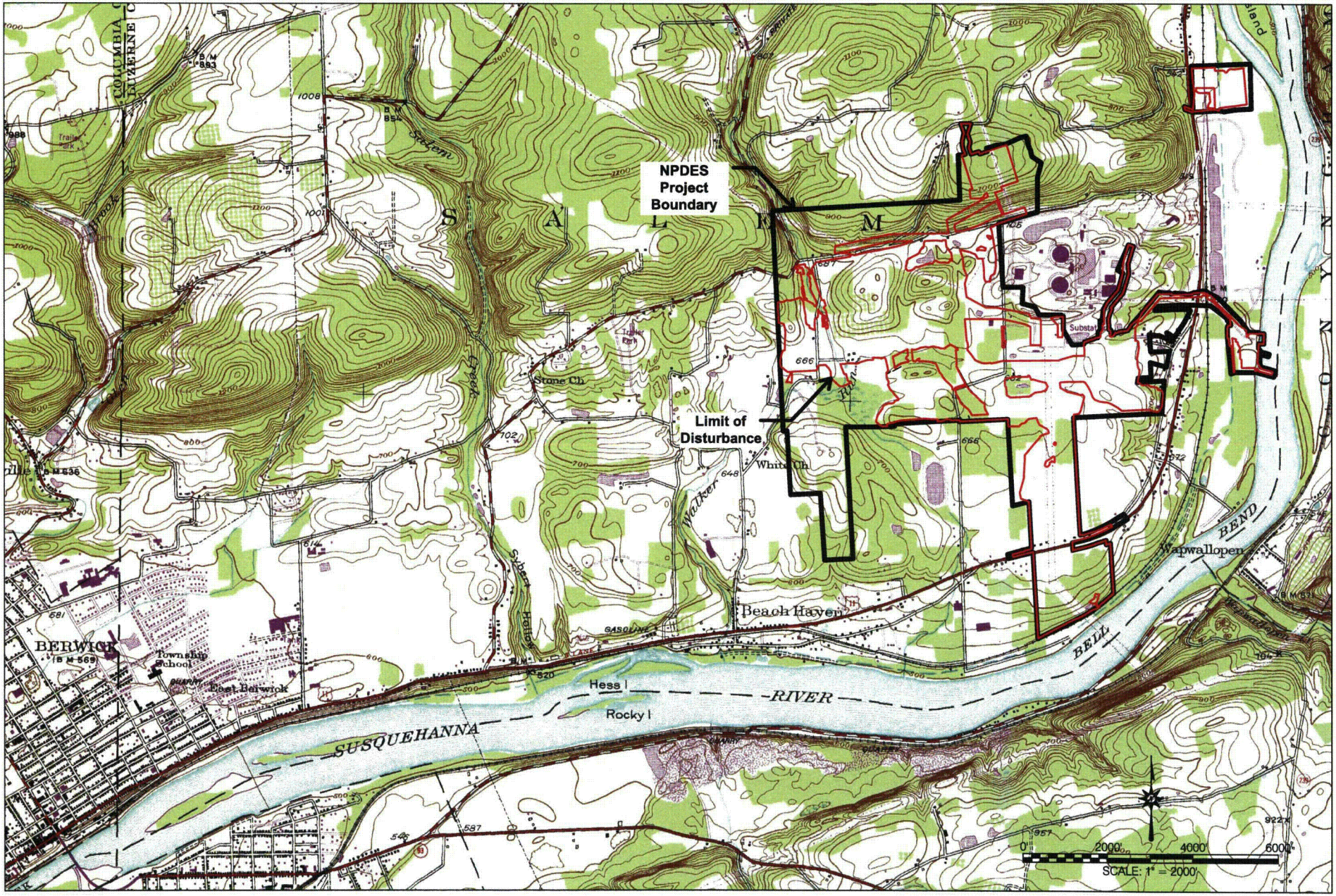
This finding applies to impacts to DCNR only. To complete your review of state and federally-listed threatened and endangered species and species of special concern, please be sure the U.S. Fish and Wildlife Service, PA Game Commission, and the Pennsylvania Fish and Boat Commission have been contacted regarding this project as directed by the online PNDI ER Tool found at www.naturalheritage.state.pa.us.

Sincerely,

Rebecca H. Bowen

Rebecca H. Bowen, Environmental Review Manager FOR Chris Firestone, Wild Plant Program Mgr.
Ph: 717-772-0258 ~ c-rbowen@state.pa.us

# □e□tion □
# Pro□e□t Lo□ation Ma□




PA 042324

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315 North Street | Lititz, PA 17543

Land Studies

**Project Location Map**

Location: 41° 06' 25" N 76° 09' 55" W
Source: USGS 7.5 minute Quadrangle - Berwick, PA

Client:

**Bell Bend Nuclear Power Plant**

Salem Township
Luzerne County, Pennsylvania

| Revisions | | |
|---|---|---|
| No. | Date | Description |
| 1 | 1/17/11 | Add LOD |
| 2 | 6/7/11 | Remove LOD, Add Buffer |
| 3 | 10/13/11 | Update LOD w/GIS Shapefile |

| | |
|---|---|
| Project Number: | E-728-LB |
| Drawn By: | EPJ |
| Checked By: | BE |
| Date: | AUGUST 2010 |
| Scale: | 1" = 2000' |
| Drawing Number: | BB-LM-001 |
| Sheet Number: | 1 OF 1 |

# □e□tion □
# Pro□e□t □e□□ri□tion

# Project Description

PPL Bell Bend Nuclear Power Plant
Salem Township, Luzerne County, PA

## 1. Project Summary

PPL Bell Bend, LLC (the Applicant) proposes to construct a new nuclear power plant, the Bell Bend Nuclear Power Plant ("BBNPP" or "the Project"), at a site adjacent to the existing Susquehanna Steam Electric Station (SSES) in Salem Township, Luzerne County, Pennsylvania. The purpose of the BBNPP is to generate 1,600 MWe of nuclear baseload electrical supply to address the growing demand for electricity in the PJM Interconnection, LLC market area. The Applicant is in the process of designing, siting and licensing the new nuclear facility, and this Joint Permit Application (JPA) is intended to support the required permitting for the unavoidable encroachments and obstructions to Waters of the Commonwealth and Waters of the United States. These unavoidable impacts will affect the North Branch of the Susquehanna River (NBSR) and adjacent wetlands and an unnamed tributary, as well as Walker Run (a second order tributary to the NBSR), its tributaries, and wetlands within the Walker Run watershed.

The Project Boundary consists of approximately 2,055 acres (ac) in Luzerne County, Pennsylvania, near the west bank of the NBSR, approximately 5 miles northeast of Berwick, Pennsylvania. Of these 2,055 ac, approximately 687 ac will be altered to support construction.

## 2. Alternatives, Avoidance, and Minimization

Alternatives to the proposed project were examined in detail including the no-action alternative, energy generation alternatives, and alternative locations for the nuclear facility. The detailed Alternatives Analysis is included in Section Q of this JPA. No alternatives were determined to be preferable to a nuclear power plant at the Bell Bend location. The site selection analysis included numerous environmental and public interest criteria.

The Applicant performed a thorough avoidance and minimization analysis on the Bell Bend site. Numerous iterations of the site layout were developed, each successive layout with fewer impacts to stream and wetland features. The unavoidable impacts

resulting from plant components were minimized to the fullest extent practicable. For a detailed description of the avoidance and minimization actions taken by the Applicant see the Alternatives Analysis in Section Q of this JPA. The BBNPP design, as presented in this application, is considered by the applicant to be the Least Environmentally Damaging Practical Alternative (LEDPA) in accordance with the 404(b)1 guidelines established by the U.S. Environmental Protection Agency.

### 3. Impacts to Jurisdictional Waters

Because the jurisdiction and classification of impacts differs slightly between the Pennsylvania Department of Environmental Protection (DEP) and the United States Army Corps of Engineers (ACOE), impact totals also differ by agency. Based on DEP standards, the proposed project will permanently impact 1.58 ac palustrine forested wetland (PFO), 0 ac of scrub shrub wetland (PSS), and 0.99 ac of emergent wetland (PEM). Temporary impacts from excavation and associated earth disturbance will impact 7.33 ac of wetland. Indirect wetland impacts resulting from tree clearing will affect 7.93 ac. Permanent stream impacts total 997 linear feet (LF). Based on ACOE standards the proposed project will permanently impact 0.51 ac PFO, 0 ac of PSS, and 0.74 ac of PEM. Temporary impacts from excavation and associated earth disturbance will impact 8.52 ac of wetland. Indirect wetland impacts resulting from tree clearing will affect 9.00 ac. Permanent stream impacts total 742 linear feet (LF). (See Section J, Enclosures D3 and D4)

The following proposed work will result in wetland or stream impacts to jurisdictional wetlands and watercourses associated with the construction of the BBNPP. Fill placement for the purpose of facility construction represents direct impacts to jurisdictional wetlands and waters. Fill placement within wetlands and stream channels is required for construction of the cooling water intake system (CWIS), grading around the power block, switchyard expansion, and bridge supports. Temporary wetland impacts result from bridge construction, excavation in wetlands to bury the intake and blowdown lines, as well as construction dewatering. Forest clearing needed to construct bridge and utility crossings will also result in indirect impacts due to the loss of wetland functions. Power plant components resulting in wetland and stream impacts are summarized below. Enclosure D of the Environmental Assessment in Section J of this JPA provides a complete description of project impacts. Wetland and watercourse

impact tables that provide a detailed breakdown of impact acreages by Jurisdiction (DEP or ACOE), wetland type PFO, PSS or PEM, and impact type (permanent, temporary, or indirect) are included as Enclosures D3 and D4. Each impact is identified by a letter which can be located on the Wetland and Watercourse Impact Map, Enclosures D1 and D2.

## 3.1 Cooling Systems

The Circulating Water System (CWS) and Essential Service Water System (ESWS) are the two major cooling systems used by the BBNPP. The planned CWS is a closed-cycle, wet cooling system using two natural draft cooling towers to dissipate waste heat during station operation. The ESWS is closed-loop and is used for normal operations, refueling, shutdown/cool down, anticipated operational events, design basis accidents and severe accidents. Make-up water for these systems is needed to compensate for evaporative losses, drift, and blowdown discharge. The NBSR will provide normal makeup to the CWS and ESWS system via the CWS Intake Structure. Makeup to the ESWS during design basis accidents and severe accidents is provided from an onsite pond. No makeup from the NBSR is required during these events. This use of NBSR water (both withdrawal and consumptive use) will be subject to separate regulatory review and approval by the Susquehanna River Basin Commission (SRBC).

### 3.1.1 Intake Structure Building and Access

The intake structure will be constructed to withdraw water from the NBSR. The structure will be located approximately 300 ft downstream of the existing SSES intake structure along the west bank of the NBSR. The building will be 124-feet long by 90-feet wide with three individual pump bays. In addition, an access drive and a parking lot are needed to access the intake structure. The intake structure was sited to utilize a large pool within the NBSR. Siting options for the intake structure were limited due to the location of the pool, wetlands, streams, cultural resources and existing SSES infrastructure adjacent to the NBSR. On-site avoidance and minimization was used to the fullest extent practicable to avoid these resources. See the Alternatives Analysis, Section Q of this JPA for a full description of the avoidance and minimization process.

Construction of the intake structure and associated access drive and parking lot (Impact K) will impact 617 LF of the North Branch Canal (NBC) outfall channel. Building

construction and associated grading will permanently fill 0.98 ac of wetland. This is the largest fill impact of the BBNPP project and is water dependent.

### 3.1.2 Intake Structure Dredging

As part of the intake structure construction, dredging of the NBSR will be required to create a forebay adjacent to the building where water intake will occur (Impact N). Dredging will involve installation of a circular cofferdam of interlocking sheet pile extending approximately 120 LF from the existing shoreline into the NBSR and approximately 220 LF measured parallel to the shoreline. The area within the cofferdam will be dewatered and dredged by hydraulic or mechanical methods, and the existing shoreline will be excavated to create an approximately 100-foot by 100-foot forebay. The total dredged area is expected to be 0.61 ac and will temporarily impact 220 LF of channel. After this work is completed the temporary cofferdam will be removed allowing the forebay area to flood. Periodic maintenance dredging of the NBSR will be required to maintain adequate depth of the forebay area.

It is expected that approximately 17,000 to 25,000 cubic yards (c.y.) of in-place NBSR bottom substrate will be removed to accommodate the proposed intake and blowdown in-water structures. A bulking factor of 1.4 is assumed to account for expansion of the silty gravel material following removal; producing a total estimated volume of material for disposal of 24,000 to 35,000 c.y. Testing was completed within the dredge envelope to determine suitability for disposal as clean fill. The results of this testing are presented in Appendix A, Items 30 and 31. Dredge material will be disposed of within the BBNPP site at one or more of the laydown areas to the north and southeast of the BBNPP power block, or on lands at the perimeter of the facility where it may be used as non-structural fill. The capacity of these areas is more than sufficient to accommodate the expected 24,000-35,000 c.y. volume. Additional information about the handling of dredged material is provided in Appendix A, Item 25. This is a water dependent impact.

### 3.1.3 Blowdown Structure River Dredging

The blowdown diffuser pipe will be 24 inch carbon steel, 24 inch RCP or 26 inch HDPE. It will have a series of 72 - 4" diameter portals spaced 1'6" on center. It will extend approximately 325 ft from the shoreline on a slight downstream angle. The diffuser portion will begin 203 ft as measured perpendicular to the shoreline. The pipe will be

anchored to a concrete pad 116.5 ft long by 7 ft wide set on the river bottom and covered with riprap. A temporary cofferdam confining an area approximately 50 feet wide by 350-foot long, extending into the river will be used during installation of the blowdown line to dewater the area and contain sediment. The planned dredged area is 0.46 ac and will temporarily impact 50 LF of channel (Impact O). The dredged material will be handled as described above and in Appendix A, Item 25. This is a water dependent impact.

### 3.1.4 Underground Intake and Blowdown Lines

Two intake systems and blowdown pipelines will carry water to and from the BBNPP for operation. The Raw Water Supply System (RWSS) intake will be 20 inch carbon steel pipe, the Circulating Water System Makeup Water Supply (CWSMWS) intake will be 32 inch carbon steel pipe and the blowdown line will be 26 inch HDPE. These lines will be combined into a single trench, along with associated communications and electrical conduits. These lines will cross wetlands and the NBC at the Riverlands property causing 0.78 ac of temporary wetland impact and 47 LF of temporary stream impacts (Impact M). These impacted areas will be restored to their original grade and seeded with native wetland vegetation immediately following backfilling of the trench. This is a water dependent impact.

### 3.1.5 Cooling Water Intake

A water intake is necessary for plant operation. It is estimated that the BBNPP CWSMWS and RWSS will withdraw 25,729 gallons per minute (gpm) on average from the NBSR to replace evaporative loss, drift, and blowdown. Maximum CWS and RWSS cooling water makeup demand is approximately 28,179 gpm. The CWSMWS provides water to the cooling towers and the RWSS provides treated water to the power plant and the normal makeup to the ESWS. The impacts caused by the consumptive use of the NBSR are regulated by the Susquehanna River Basin Commission (SRBC) (Impact S). PPL is actively working with the SRBC to obtain approval for the withdrawal and will plan for any necessary mitigation. This is a water dependent impact.

### 3.1.6 River Discharge (Blowdown Line)

Plant discharge will consist of blowdown from the CWS cooling towers. Blowdown water discharges to a Combined Waste Water Retention Pond allowing retention time for settling of suspended solids as well as additional cooling and chemical treatment of the wastewater, if required, prior to discharge to the NBSR. The concentrations of chemicals and suspended solids discharged will be in conformance with the National Pollutant Discharge Elimination System (NPDES). Blowdown from the cooling towers is returned to the NBSR through a submerged multi-port diffuser. The pipe will be 24 inch carbon steel, 24 inch RCP or 26 inch HDPE. Blowdown to the Susquehanna River will total approximately 8,665 gpm with a maximum discharge flow of 9,367 gpm (Impact T). This is a water dependent impact.

## 3.2 Bridges

All bridges are numbered on the plan set included in Section F of the JPA. Unless otherwise noted, the bridges will have concrete beam spans and concrete piers and abutments. All bridges will span the entire extent of the 100-year floodplain, existing wetlands, and in most cases have been designed to sustain an additional 50 ft buffer. Permanent wetland impacts resulting from the bridges will be limited to the pier footings and the "shadow" of the bridge deck over the wetlands. Bridge construction will also result in temporary impacts due to footing excavation, construction access, and temporary crane pads. Almost all bridges will cause indirect wetland impacts due to tree clearing necessary to accommodate construction and to protect the long-term integrity of the bridge structures.

A new vehicle bridge (Bridge 1, Impact F) will be constructed south of the BBNPP facility and east of Confers Lane and will span a large wetland complex. This bridge is necessary to provide access to the parking area from Route 11. The bridge will be 57 ft wide by 500 feet long and will span the entire width of the wetlands. Only the pier footing will directly impact the wetland. The design specifies 5 piers within the wetland with 85.5 ft spacing. The bridge piers will permanently impact 0.09 ac of wetland.

A new vehicle bridge and pipe bridge (Bridge 2 and Pipe Bridge 6, Impact D) will be constructed across the unnamed tributary to Walker Run southeast of the BBNPP facility (one structure serving two purposes). The bridge is necessary to convey the intake and

blowdown pipelines and provide vehicular access to the power plant from Route 11. The bridge is a total of 82 ft wide by 410 ft long and will span the entire width of the wetland, 100-year floodplain, and 50-ft exceptional value (EV) wetland buffer. Only the pier footings will directly impact the wetland. The bridge design specifies 3 piers within the wetland spaced approximately 103 feet apart. The bridge piers will permanently impact 0.08 ac of wetland.

A new vehicle bridge (Bridge 3, Impact B) will be constructed over the unnamed tributary to Walker Run directly south of the BBNPP facility. This bridge is necessary to access the parking areas and the power block from North Market Street and from Route 11. The bridge will be 57 ft wide by 408 ft long and will span the entire width of the wetlands, 100-year floodplain, and 50-ft EV wetland buffer. Only the pier footings will directly impact the wetland. The design specifies 2 piers within the wetland spaced at approximately 102 ft. The piers will permanently impact 0.02 ac of wetland.

A new railroad bridge (Bridge 5, Impact E) will be constructed over the unnamed tributary to Walker Run southeast of the BBNPP facility. This bridge is necessary to gain rail access to the BBNPP site. The bridge will be 25 ft wide by 535 ft long and will span the entire width of the wetlands, 100-year floodplain, and 50-ft EV wetland buffer. Only the pier footings will directly impact the wetland. The bridge design specifies 3 piers within the wetland spaced at 89 ft. The piers will permanently impact 0.03 ac.

A new vehicle bridge (Bridge 4, Impact A) will be constructed over Walker Run southeast of the facility. This bridge is necessary for access to the power plant and parking areas. The bridge is 400 ft long by 57 ft wide and will span the 100-year floodplain. No wetlands exist at this location therefore the piers will not cause any permanent wetland impacts.

A pipe bridge (Bridge 7, Impact C) will be constructed over the unnamed tributary to Walker Run. The crossing is needed for domestic water, sanitary sewer, and electrical lines. The bridge will be a four span pre-fabricated metal truss bridge. The bridge will be 8 ft wide by 340 ft long and will span the entire width of the wetlands, 100-year floodplain, and 50-ft EV wetland buffer. Only the pier footings will directly impact the wetland. The bridge design specifies 3 supports within the wetland with a spacing of 85 feet. The piers will permanently impact 0.01 acres of wetland.

A railroad culvert will be constructed over the unnamed tributary to Lake Took-A-While east of the SSES (Impact G). A 125 ft, 48-inch reinforced concrete culvert with concrete endwalls will be installed on a 4.32% grade to convey the stream under the proposed rail line. The pipe invert will be depressed six inches below the stream bed elevation. Rip-rap outfall protection is proposed to stabilize the outfall of the culvert. The culvert is necessary to gain rail access to the BBNPP site. The culvert crossing will impact 125 LF of stream.

## 3.3 Power Block

Clearing and grading will be necessary for the construction of the power block, including reactor, turbine and associated structures. Grading around the power block will impact 0.12 ac of isolated wetland (Impact I). This wetland is Waters of the Commonwealth but not Waters of the United States and is not EV. Significant plot plan changes were made throughout the design process to avoid EV wetland impacts within the Walker Run watershed from power block construction.

## 3.4 Switchyard Expansion

The existing SSES 500KV switchyard will be expanded to support the BBNPP. The northeast corner will be extended, filling 0.02 ac of isolated emergent wetlands (Waters of the Commonwealth) and an additional 0.04 ac of jurisdictional wetlands (Waters of the US and Waters of the Commonwealth) located adjacent to the existing switchyard for switchyard expansion and grading (Impact J).

## 3.5 Transmission Lines

Transmission line construction will be limited to the onsite construction area. No offsite transmission lines or corridors are needed. The BBNPP plant switchyard will be electrically interconnected to the 500 kV transmission system via two independent circuits. One circuit will connect the BBNPP plant switchyard to the existing Susquehanna 500 kV switchyard, and a separate circuit will connect to a new substation associated with the proposed Susquehanna-Roseland 500 kV Line, which is an independent project. Two 500 kV lines on individual towers will be constructed. The transmission lines are needed to convey electric power generated by the BBNPP power block to existing or proposed transmission lines that connect to the regional power grid.

Additionally, an existing 230 kV transmission line will be relocated on the site to make way for other plant structures.

Forested areas located in rights-of ways, or within 100 feet of a proposed line where new right-of-way is proposed, will be cleared of trees. 5.93 total acres of forested wetland will be indirectly impacted by clearing for transmission lines (Impacts P, Q, and R). These wetlands will be maintained permanently as scrub shrub or emergent cover.

## 3.6 Teardrop Wetland Outfall Culvert Replacement

A 428 ft long 36-inch diameter reinforced concrete pipe is proposed to convey the drainage from the teardrop wetland underneath formerly farmed agricultural fields (Impact H). The culvert and headwaters are Waters of the Commonwealth but not Waters of the United States. This structure is designed to replace an existing 567 ft, 8-inch PVC pipe and grassed swale that currently conveys the tile drain system underneath the adjacent fallow fields. This flow could not be daylighted due to the grading required to site the BBNPP infrastructure. The proposed structure is designed to convey the 100-year peak runoff. The pipe invert will be depressed twelve inches below the channel inverts at both ends and will outlet onto a rip-rap apron to prevent scour at the outfall. This structure is considered maintenance/modification of an existing culvert and is not included in the mitigation calculations.

## 3.7 ESWEMS Pond, Cooling Towers, and Power Block Dewatering

Dewatering is needed during excavation and fill placement for the power block, the essential service water emergency makeup system (ESWEMS) pond, and the cooling towers. These plant components are safety-related plant features and must have a foundation placed on competent bedrock. The excavation to bedrock and placement of structural fill to design elevations must be done in a dry condition, therefore, dewatering wells, sumps, and sump pumps will be used during foundation construction, which may extend up to two years. Groundwater flow models have indicated the potential for temporary groundwater drawdown in Wetlands 11 and 12 as a result of construction dewatering associated with the ESWEMS pond (Impact L). No other impacts are anticipated as a result of construction dewatering. Dewatering will cause about 6 ac of temporary wetland impacts. A plan to minimize these impacts and maintain existing

hydrologic conditions during construction has been developed and is presented in Section R of this JPA.

### 3.8 Stormwater Discharges

A post construction stormwater management (PCSM) plan has been developed for the BBNPP site. This plan calls for 20 level spreader discharges from stormwater basins (Impact U). These discharges will not directly impact jurisdictional waters, however many will be located adjacent to streams and wetlands. An additional 18 inch pipe will discharge into the NBSR near the intake structure at the Riverlands. BMPs are planned to minimize any potential physical, chemical or biological indirect impacts resulting from stormwater quantity and quality. Detailed stormwater management information is provided in Section M of the JPA and the Post Construction Stormwater Management Plan submitted with the NPDES stormwater permit application.

## 4. Additional Project Impacts

### 4.1 On-Site Project Impacts

BBNPP construction will require land cover alteration of non-jurisdictional upland features within the 2,055 acre Project Boundary. Table 1 provides an overview of the pre- and post-construction land use areas, generally conforming to United States Geologic Survey (USGS) cover type classifications.

**Table 1: Land Alteration by Cover Type**

| Land Use Type | Pre-Construction Area (acres) | Post-Construction Area (acres) |
|---|---|---|
| Urban or Built-Up | 220.8 | 859.6 |
| Forest | 1141.7 | 730.4 |
| Barren | 21.5 | 19.2 |
| Wetlands | 159.0 | 157.6 |
| Water | 71.9 | 71.8 |
| Agricultural | 440.0 | 216.3 |
| Total Site Boundary | 2054.9 | 2054.9 |

The BBNPP will occupy areas that currently include both farmland and forest. Structures and construction activities will be located to minimize impacts on the

remaining forest. A total of approximately 234 acres of forested habitat will be cleared, of which 224.5 acres are upland and 9.51 are wetland. Impacts from this activity include potential habitat disruption and loss of water quality, shading, and windbreak benefits supporting local wetland and upland habitat quality. The proposed clearing will increase the fragmentation of the existing forest cover. Forested buffers (50 foot minimum width) will be maintained adjacent to EV streams and wetlands, where possible, to protect these resources during construction and operation of the BBNPP, and to reduce the potential for any unintentional impacts.

The Indiana Bat is a federally endangered species with known hibernacula in the vicinity of the BBNPP site. No Indiana Bats were caught during bat mist surveys or acoustic monitoring completed within the project boundary. The Applicant is working with the U.S. Fish and Wildlife Service to minimize the risk of potential impacts and to develop a mitigation strategy. See Section E of this JPA for correspondence regarding the Indiana Bat.

Project impacts to the other protected species are expected to be minimal. Two protected mussel species were detected; one Green Floater was collected in the NBSR during macroinvertebrate studies and numerous Yellow Lampmussels were collected during a separate mussel survey. In addition, Pennsylvania Natural Diversity Index (PNDI) search results included two protected butterfly species which could be present within the project boundary. PPL has initiated dialogue with the appropriate State agencies to minimize and mitigate any potential impacts resulting from BBNPP construction and operation (see Section E).

Cultural resources on–site will be affected by extensive clearing and grading. In addition the NBC will be temporarily impacted by the intake and blowdown pipeline installations. PPL will continue to coordinate with the PHMC on cultural resource investigations. All cultural resource clearances will be obtained from PHMC prior to commencing work on BBNPP. See Section D of this JPA for correspondence to date regarding cultural resources. All Cultural Resource studies are provided in JPA Appendix C.

## 4.2 Off-Site Project Impacts

BBNPP has determined that it is possible for all excavated material to be utilized on-site in a balanced cut-fill design based on the current grading plan. No off-site excess fill disposal will be required

# 5. Proposed Mitigation

The following three on-site, in-kind mitigation projects are proposed to compensate for impacts to jurisdictional waters as part of the BBNPP mitigation strategy described in Section R of the JPA.

1. Implement a stream and floodplain restoration project on two reaches of Walker Run creating and enhancing wetlands, improving stream functions, and improving wild trout habitat as well as mitigating for permanent stream impacts.
2. Remove a section of Confers Lane, which is to be abandoned, creating additional wetlands and restoring a hydrologic connection between two EV wetlands.
3. Restore the North Branch Canal, enhance wetlands at the PPL Riverlands near the proposed intake structure, and extend the existing recreational trail system

As a result of these projects 6.8 ac of wetland will be enhanced, 8.23 ac of wetland will be created, and 2,213 ft of stream will be created or enhanced. The mitigation projects will also compensate for indirect impacts to wetland functions and values. Forested wetlands created or converted will total 14.60 ac, exceeding the amount cleared.

In addition PPL will mitigate for temporary impacts resulting from construction dewatering. Mitigation measures will include the introduction of water to affected wetlands from a storage reservoir constructed to store pumped groundwater. A temporary spray irrigation system will apply water to the wetlands as needed to maintain pre-construction hydrologic conditions. Daily wetland monitoring will be conducted during construction to allow real-time flow corrections to maintain conditions reflecting the established baseline.

A multi-faceted Indiana Bat mitigation plan is proposed to compensate for lost potential habitat resulting from the tree clearing needed to support facility construction and grading. The mitigation plan will focus on ways to create, improve, and protect on- and

off-site Indiana Bat habitat. The mitigation plan is being developed in conjunction with the U. S. Fish and Wildlife Service and other commenting agencies.

## 6. Public Benefit, Health, Safety, and Environment Summary

The proposed project will benefit the public within the PJM Market Area by providing an additional 1,600 MWe of baseload power to support a region with anticipated growth and projected power limitations. The project is considered by PPL to be the Least Environmentally Damaging Practical Alternative to meet the project purpose.

Locally, jobs and an increased tax base will result from construction and operation of the proposed power plant. All safety-related requirements will be met according to Nuclear Regulatory Commission regulations. All other requirements, including environmental requirements, of state and federal law will be met. The anticipated impacts to jurisdictional waters have been avoided and minimized to the fullest extent practicable and do not alter unique habitats. All impacted lands on the BBNPP site are similar in nature and function to non-impacted areas on the site and in the vicinity of the property. All impacts to jurisdictional waters will be mitigated on-site. Any potential actions affecting threatened, endangered, or rare species will be cleared by each respective agency and minimized and mitigated according to agency requirements. Impacts to cultural resources and any cumulative environmental impacts have been avoided to the fullest extent practicable.

The Applicant believes that the details described in this JPA demonstrate that impacts will be avoided, minimized, and mitigated to the fullest extent practicable, and that the public benefits of this project outweigh the impacts resulting from this project.

# □e□tion □
# □ro□ion and □edi□ ent □ontrol Plan

1. Erosion and Sediment Control Plan

Status

On November 12, 2010 an application for an NPDES Individual Permit for Discharges of Stormwater Associated with Construction Activities for the Bell Bend Project was submitted to the Luzerne Conservation District and PA Department of Environmental Protection. The application contained an Erosion and Sediment Control Plan (E&S Plan) which was also included in the JPA submittal dated June 2011. Technical review comments on the E&S plan were issued by the Luzerne Conservation District on December 9, 2010.

PPL submitted a revised NPDES Stormwater permit application and E&S plan, which incorporated Luzerne Conservation District comments, on September 15, 2011. Subsequent comments pertaining to the E&S plan were issued by Luzerne Conservation District on October 27, 2011. These comments were addressed and revised plans and narrative were resubmitted to the Luzerne Conservation District on November 11, 2011.

Copies of the E&S Plan and Narrative as contained in the November 11, 2011 revised E&S submittal is provided herein. Any future revisions of the E&S Plan will be filed for inclusion in this application record when issued by PPL. Final approval of the E&S Plan by the Luzerne Conservation District will be filed as part of the application record when received.

**Pennoni Associates Inc.**
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# BINDER 5 OF 6

# EROSION AND SEDIMENTATION CONTROL PLAN NARRATIVE

## Bell Bend Nuclear Power Plant
## Salem Township
## Luzerne County, PA

**For:**
**PPL Bell Bend, LLC**
38 Bomboy Lane
Suite 2
Berwick, PA 18603

**Report Number**
PPLS0902-1500-02

**Issue Date**
November 12th, 2010

**Revision Date – Rev 2**
November 4th, 2011

**Revision Date – Rev 1**
September 15th, 2011

**PPLS0902**

**Binder 5 of 6** – Erosion and Sedimentation Control Plan Narrative

## Table of Contents



**Appendicies**



**Binder 6 of 6** – Erosion and Sedimentation Control Plan Narrative (Continued)

## I. EXECUTIVE SUMMARY

The purpose of this erosion and sedimentation control plan is to provide the contractor with general guidelines and specific details for minimizing erosion and sedimentation during and after the construction of the project. The plan consists of this narrative and accompanying drawings and is part of an individual NPDES Permit for Discharges of Stormwater Associated with Construction Activities. PPL Bell Bend, LLC is proposing to construct a Nuclear Power generating plant in Salem Township, Luzerne County Pennsylvania. See Appendix A for the location map.

The sedimentation controls proposed consist of Silt Barrier Fence, Super Silt Fence, Sediment Basins, Slope Protection, Rock Filter Berms, and Rock Construction Entrances, Pump Water Filter Bags and Coffer Dams. The Silt Barrier Fence will be used along the toe of the soil stockpiles and the toe of the fill slopes at locations shown on the E&S plans to prohibit sediment from leaving the construction area. The Super Silt Fabric Fence will be placed around the designated wetlands on site. The installation of the Super Silt Fabric Fence will protect these wetland areas during construction activities. The anticipated starting date for the project is April 2013 and the anticipated completion date for construction will be in December of 2019

The person responsible for the preparation of this report and the Erosion and Sedimentation Control Plan is Chad M. Lello, Registered Professional Engineer, who is experienced in the development of Erosion and Sedimentation Control Plans.

## II. EXISTING LAND USE AND SITE FEATURES

The PPL Bell Bend project NPDES Boundary is 1218 acres which is in a rural/residential community that contains various types of ground cover such as: wooded areas, paved roadways, agricultural land, grass fields, an existing power plant and numerous wetland areas. The nearest named waterway is Walker Run which runs through the site. Walker Run is classified as Cold Water Fishery-Migratory Fishery (CWF-MF) by the classifications set forth by the Chapter 93 Water Quality Standards, Title 25. A portion of the site drains towards the Susquehanna River which is classified as a Warm Water Fishery (WWF-MF) by the classifications set forth by the Chapter 93 Water Quality Standards, Title 25.

## III. PROPOSED LAND USE AND SITE FEATURES

PPL Bell Bend, LLC is proposing to construct a new Nuclear Power plant. The proposed construction will disturb a total of approximately 687 Ac. The earth moving activities will consist of constructing a main access road off of US11, other access and security roads, a railroad spur, parking lots, utilities, buildings and two cooling towers that will support the proposed power plant.

## IV. ANALYSIS OF PROJECT IMPACT ON DOWNSTREAM WATERCOURSES

Stormwater runoff is proposed to be conveyed in a drainage system consisting of inlets, culverts, swales, and pipes that ultimately outlet to numerous aboveground infiltration/detention basins and subsurface infiltration/detention basins. The stormwater basins are designed to remove the stormwater volume difference between the two-year pre-developed and post-developed storm events. The basins are also designed to control stormwater discharge rates up to the 100-year storm. Many of the basins are designed to outlet to level spreaders and rip-rap aprons. Therefore, the project will have a minimum impact on the downstream water courses resistance to erosion.

## V. SOILS

See Appendix B for a soils map. The soils on the site are listed by the United States Department of Agriculture and the Natural Resource Conservation Service as:

**ASF – Arnot-Rock outcrop complex, Steep –** This steep and very steep soil is on convex mountain sides and hillsides. Runoff is rapid, and the hazard of erosion is slight. These soils are low in natural fertility, and content of organic matter is low. Most limitations for non-farm use are related to slope, the stones, the rock outcrop, and the depth to bedrock. The Capability Subclass for this soil is VIIs.

**At – Atherton silt loam, gray subsoil variant, 0 to 3 percent slopes –** This is a nearly level soil in low lying, uniformly concave positions. Runoff is very slow, ponding is common and the hazard of erosion is slight. These soils are medium in natural fertility, and content of organic matter is moderate. Most limitations for non-farm use are related to the high water table, the slow permeability, and ponding. The Capability Subclass for this soil is IVw.

**BrA – Braceville gravelly loam, 0 to 3 percent slopes –** This nearly level soil is in smooth, slightly concave positions on glacial outwash terraces. Runoff is slow and the hazard of erosion is slight. This Braceville soil is medium to low in natural fertility and low in content of organic matter.
Most limitations for nonfarm use are related to the seasonal high water table and the moderately slow permeability. The Capability Subclass for this soil is IIw.

**BrB – Braceville gravelly loam, 3 to 8 percent slopes –** This gently sloping soil is in smooth, slightly concave positions on glacial outwash terraces. Runoff is slow to medium, and the hazard of erosion is moderate. This Braceville soil is medium to low in natural fertility and low in content of organic

matter. Most limitations for nonfarm use are related to the seasonal high water table and the moderately slow permeability. The Capability Subclass for this soil is IIw.

**BrC – Braceville gravelly loam, 8 to 15 percent slopes –** This gently sloping soil is in smooth, slightly concave positions on glacial outwash terraces. Runoff is medium, and the hazard of erosion is moderate. This Braceville soil is medium to low in natural fertility and low in content of organic matter. Most limitations for nonfarm use are related to the seasonal high water table, the moderately slow permeability and slope. The Capability Subclass for this soil is IIIe.

**ChA – Chenango gravelly loam, 0 to 3 percent slopes –** This nearly level soil is in broad, smooth, slightly convex positions on glacial outwash terraces. Runoff is slow to very slow, and the hazard of erosion is slight. This soil is low in natural fertility and low in content of organic matter. Most limitations for nonfarm use are related to moderately rapid to rapid permeability and the possibility of ground water contamination. The Capability Subclass for this soil is IIs.

**ChB – Chenango gravelly loam, 3 to 8 percent slopes –** This gently sloping soil is in broad, smooth to slightly undulating, convex positions on glacial outwash terraces. Runoff is slow and the hazard of erosion is moderate. This soil is low in natural fertility and low in content of organic matter. Most limitations for nonfarm use are related to moderately rapid to rapid permeability and the possibility of ground water contamination and the content of coarse fragments. The Capability Subclass for this soil is IIs.

**ChC – Chenango gravelly loam, 8 to 15 percent slopes –** This sloping soil is in smooth or rolling, convex positions on glacial outwash terraces. Runoff is medium to very slow and the hazard of erosion is moderate. This soil is low in natural fertility and low in content of organic matter. Most limitations for nonfarm use are related to moderately rapid to rapid permeability and the possibility of ground water contamination and the content of coarse fragments. The Capability Subclass for this soil is IIIe

**Ho – Holly silt loam, 0 to 3 percent slopes –** This is a nearly level soil on smooth or slightly concave flood plains. Runoff is slow and the hazard of erosion is slight. This soil is subject to frequent flooding. This soil is medium in natural fertility and moderate in content of organic matter. Most limitations for nonfarm use are related to the season high water table and frequent flooding. The Capability Subclass for this soil is IIIw.

**OlB – Oquaga and Lordstown channery silt loams, 3 to 8 percent slopes –** This gently sloping soil is on convex tops of the hills, knolls and mountain ridges of broad rolling mountaintops and intermountain basins. Runoff is medium, and the hazard of erosion is moderate. This soil is medium in natural fertility and low in content of organic matter. Most limitations for nonfarm use are related to the depth to bedrock. The Capability Subclass for this soil is IIe.

**OlC – Oquaga and Lordstown channery silt loams, 8 to 15 percent slopes –** This sloping soil is on the convex rounded tops, crests, and sides of and sides of hills, knolls and on the mountain ridges of broad rolling mountaintops and intermountain basins. Runoff is medium to rapid and the hazard of erosion is moderate. This soil is medium in natural fertility and low in content of organic matter. Most limitations for nonfarm use are related to the depth to bedrock and slope. The Capability Subclass for this soil is IIIe.

**OlD – Oquaga and Lordstown channery silt loams, 15 to 25 percent slopes –** This moderately steep soil is on the sides of hills, knolls, and mountain ridges of broad, rolling mountaintops and intermountain basins. Runoff is rapid, and the hazard of erosion is moderate. This soil is medium in natural fertility and low in content of organic matter.
Most limitations for nonfarm use are related to the depth to bedrock and slope. The Capability Subclass for this soil is IVe.

**OpB – Oquaga and Lordstown extremely stony silt loams, 3 to 8 percent slopes –** This gently sloping soil is on the convex tops of hills, knolls, and mountain ridges of broad mountaintops and intermountain basins. Runoff is medium, and the hazard of erosion is slight. This soil is medium in natural fertility and moderate in content of organic matter. Most limitations for nonfarm use are related to the depth to bedrock surface stoniness. The Capability Subclass for this soil is VIIs.

**OpD – Oquaga and Lordstown extremely stony silt loams, 8 to 25 percent slopes –** This sloping and moderately steep soil is on convex, rounded tops, crests and sides of hills; on knolls; and on the mountain ridges of broad rolling mountaintops and intermountain basins. Runoff is medium to rapid, and the hazard of erosion is slight. This soil is medium in natural fertility and moderate in content of organic matter. Most limitations for nonfarm use are related to the depth to bedrock surface stoniness, and slope. The Capability Subclass for this soil is VIIs.

**OXF – Oquaga and Lordstown extremely stony silt loams, steep –** This steep and very steep soil is on the sides of hills, mountain ridges, and valleys of broad, rolling mountaintops and intermountain basins. Runoff is rapid to very rapid, and the hazard of erosion is slight. This soil is medium in

natural fertility and moderate in content of organic matter. Most limitations for nonfarm use are related to slope, the depth to bedrock and surface stoniness. The Capability Subclass for this soil is VIIs.

**Ps – Pope Soils, 0 to 5 percent slopes –** These nearly level to gently sloping soils are on smooth, slightly convex high bottom flood plains. Runoff is slow, and the hazard of erosion is none to slight. These soils are high in natural fertility and low in content of organic matter. Most limitations for nonfarm use are related to the flood hazard. The Capability Subclass for this soil is I.

**RdA – Rexford loam, 0 to 3 percent slopes –** This nearly level soil is in smooth, concave positions on glacial outwash terraces. Runoff is slow and the hazard of erosion is none to slight. This soil is medium to low in natural fertility and low in content of organic matter. Most limitations for nonfarm use are related to the seasonal high water table and slow permeability. The Capability Subclass for this soil is IIIw.

**RdB – Rexford Loam, 3 to 8 percent slopes –** This gently sloping soil is in smooth, slightly concave positions on glacial outwash terraces. Runoff is slow and the hazard of erosion is slight. This soil is medium to low in natural fertility and low in content of organic matter. Most limitations for nonfarm use are related to the seasonal high water table and slow permeability. The Capability Subclass for this soil is IIIw.

**WeB – Weikert and Klinesville channery slit loams, 3 to 8 percent slopes –** This gently sloping soil is on the convex tops of hills, knolls and ridges. Runoff is medium, and the hazard of erosion is moderate. This soil low in natural fertility and low in content of organic matter. Most limitations for nonfarm use are related to the depth to bedrock and the content of coarse fragments. The Capability Subclass for this soil is IIIe.

**WeC – Weikert and Klinesville channery slit loams, 8 to 15 percent slopes –** This sloping soil is on the convex, rounded tops, crests, and sides of hills, knolls and ridges. Runoff is medium to rapid, and the hazard of erosion is moderate. This soil is low in natural fertility and low in content of organic matter. Most limitations for nonfarm use are related to the depth to bedrock and slope. The Capability Subclass for this soil is IVe.

**WeD – Weikert and Klinesville channery slit loams, 15 to 25 percent slopes –** This moderately steep soil is on the sides of hills, knolls, and ridges. Runoff is rapid to very rapid, and the hazard of erosion is moderate. This soil is low in natural fertility and low in content of organic matter. Most

limitations for nonfarm use are related to the depth to bedrock and slope. The Capability Subclass for this soil is VIe.

**WmB – Wellsboro very stony silt loam, 3 to 8 percent slopes –** This gently sloping and soil is on smooth, slightly concave uplands of broad, rolling mountaintops and intermountain basins. Runoff is slow, and the hazard of erosion is slight. This soil is medium in natural fertility and moderate in content of organic matter. Most limitations for nonfarm use are related to the seasonal high water table, the slow permeability and the surface stoniness. The Capability Subclass for this soil is VIs.

**WyD – Wyoming gravelly loam, 15 to 25 percent slopes –** This moderately steep soil is in broad, smooth or hilly, convex positions on the sides of glacial outwash moraines, kames, and eskers. Runoff is medium to rapid, and the hazard of erosion is moderate. This soil is low in natural fertility and low in content of organic matter. Most limitations for nonfarm use are related slope, the rapid permeability, the content of coarse fragments, and the possibility of groundwater contamination. The Capability Subclass for this soil is IVe.

**WyF – Wyoming gravelly loam, 25 to 60 percent slopes –** This steep to very steep soil is in broad, smooth or complex, convex positions on the sides of glacial outwash moraines, kames, and eskers. Runoff is rapid, and the hazard of erosion is moderate. This soil is low in natural fertility and low in content of organic matter. Most limitations for nonfarm use are related to the slope, the rapid permeability, and the content of coarse fragments. The Capability Subclass for this soil is VIIe.

**The soil limitations shall be addressed as follows:**

**Stoniness:** When filter fence cannot be properly anchored in stony soils, alternate sediment barriers such as straw bales or rock berms shall be utilized. Alternate measures shall be installed in accordance with PADEP's Erosion and Sedimentation Pollution Control Program Manual.

**Surface Stoniness:** When filter fence cannot be properly anchored in stony soils, alternate sediment barriers such as straw bales or rock berms shall be utilized. Alternate measures shall be installed in accordance with PADEP's Erosion and Sedimentation Pollution Control Program Manual.

**Coarse Fragments:** When filter fence cannot be properly anchored in stony soils, alternate sediment barriers such as straw bales or rock berms shall be utilized. Alternate measures shall be installed in accordance with PADEP's Erosion and Sedimentation Pollution Control Program Manual.

**Slope:** Stabilize all disturbed area per BMP's.

**Depth to Bedrock:** Extensive rock removal and additional suitable fill may be required.

**Rock Outcrop:** Extensive rock removal and additional suitable fill may be required.

**Seasonal High Water Table:** Where necessary, temporary dewatering facilities will be required. Limit construction in areas of seasonal high water tables to the dry season as needed and/or feasible. When soils become unsuitable or saturated from the water table, excavate and replace the soil with low permeability soils.

**High Water Table:** Where necessary, temporary dewatering facilities will be required. Limit construction in areas of seasonal high water tables to the dry season as needed and/or feasible. When soils become unsuitable or saturated from the water table, excavate and replace the soil with low permeability soils.

**Slow Permeability:** Dewater area using the pump filter bag.

**Moderately Slow Permeability:** Dewater area using the pump filter bag.

**Rapid Permeability:** In the event of a contaminant spill, isolate and contain the spill and clean up immediately. Excavation of the contaminated soil and replacement with suitable soil may be required.

**Ponding:** Dewater area using the pump filter bag.

**Frequent Flooding:** Dewater area using the pump filter bag.

**Groundwater Contamination:** Due Diligence and testing may be required in those areas of concern. Selecting vegetative species tolerant to wet conditions; tiling vegetated areas; and implementing combinations of these and/or other methods.

## VI. SEQUENCE OF EARTHMOVING OPERATIONS

All earth disturbance activities shall proceed in accordance with the following sequence. Each stage will be completed in compliance with Chapter 102 regulations before any following stage is initiated. Clearing and grubbing shall be limited to only those areas described in each stage.

At least 7 days before starting any earth disturbance activities, the operator shall invite all contractors involved in those activities, the land owner, all appropriate municipal officials, the erosion and sediment control plan preparer, and a representative from the Luzerne Conservation District to a pre-construction meeting. Also, at least 3 working days before starting any earth

disturbance activities, all contractors involved shall notify the Pennsylvania One Call System, Inc. at 1-800-242-1776 for buried utility locations.

Before implementing any revisions to the approved erosion and sediment control plan or revisions to other plans which may affect the effectiveness of the approved E&S control plan, the operator must receive approval of the revisions from the Luzerne Conservation District.

At least 7 days before starting any tree clearing activities between April 1 and November 15 notify the U. S. Fish and Wildlife Service (USFWS). Tree clearing during this period will be limited to trees with a diameter at breast height less than 5 inches due to potential impact to foraging Indiana Bats, or in accordance with Final Bat Management Plan as approved by USFWS.

The operator shall remove from the site, recycle, or dispose of all building materials and wastes in accordance with the department's solid waste management regulations at 25 Pa Code 260.1 et seq. and 287.1 et seq.

Before disposing of soil or receiving borrow for the site, the operator must assure that each spoil or borrow area has an erosion and sediment control plan approved by the Luzerne Conservation District, and which is being implemented and maintained according to Chapter 102 regulations. The operator shall also notify the Luzerne Conservation District in writing of all receiving spoil and borrow areas when they have been identified.

Erosion Control Mulch Blanket must be installed on all disturbed areas within 50 feet of Waters of the Common Wealth.

Upon temporary cessation of an earth disturbance activity or any stage or phase of an activity where a cessation of earth disturbance activities will exceed 4 days, the site shall be immediately seeded, mulched, or otherwise protected from accelerated erosion and sedimentation pending future earth disturbance activities.

Upon stabilization of contributory areas, permanent vegetated swales used as erosion and sedimentation swales to convey sediment laden run-off shall be regraded and immediately stabilized with the proposed lining/seeding as shown on the plans.

Seeding and mulching of fill slopes shall occur in regular vertical increments every 15 feet to promote early stabilization of the fill slope.

Before installing any critical stages including Post Constriction Stormwater Management BMPs , a licensed professional or designer must be present on-site to ensure that installations are done properly and per plan details.

All BMP construction and site disturbance shall have immediate temporary stabilization, or permanent stabilization installed upon completion as shown on the plans and as directed.

All interior slopes of sediment basins shall be stabilized above the sediment storage zone with slope matting as shown on the plans.

Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to eliminate the potential for accelerated erosion and/or sediment pollution.
The general sequence of earthmoving activities for the construction of the PPL Bell Bend Nuclear Power Plant Project is as follows, Please reference the Construction Sequence Also Set for Construction Area Map (CS9000) and Phasing Maps (CS9001-CS9010):

**PHASE I (CS9001)**

Each stage of the sequence must be completed prior to initiation of the next stage of the sequence of earth moving operations within this phase.

1. Field-mark the limits of disturbance, all Waters of the Commonwealth, sensitive resources to be saved, and proposed infiltration areas for Phase I (Construction Areas 3 & 10 on Map CS9000).
2. Initial site access and parking will be at existing rock construction entrance 1A found on Beech Grove Rd (Construction Area 3 , CS8101).
3. Install rock construction entrance 1B along Beech Grove Rd (CS8101). Install rock construction entrance 1C along Confers Lane (CS8124).
4. Install all perimeter control: silt fence and orange construction fence as shown on plans for Phase I.
5. Clear and grub areas of construction within the limits of disturbance for Phase I.
6. Rough grade transmission line right-of-way and install retaining walls within right-of-way.

7. Construct Transmission line Access Roads and laydown space, installing swales and storm drainage pipes from lowest to highest invert as shown on the plans.

8. Swale matting and rock filters shall be installed immediately as grading is completed per the details shown on CS8501.

9. Perform local excavations for transmission tower foundations (Construction Area 10 on Map CS9000).

10. Install transmission tower foundations for the relocation of the 230KV transmission lines (Construction Area 10).

11. Install new transmission lines (Construction Area 10) and remove existing transmission lines crossing through the Power Block Area (Construction Area 3) as shown on the plans.

12. Permanently seed all areas disturbed by the construction, including the access road and laydown space. An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.

13. Upon achieving final stabilization remove rock filters and perimeter controls including silt fence (Construction Area 10).

14. Stabilize the areas where temporary BMPs were located. Dispose of any sediment as outlined in the maintenance notes (Construction Area 10).

**PHASE II (CS9002)**

Each stage of the sequence must be completed prior to initiation of the next stage of the sequence of earth moving operations within this phase.

1. Field-mark the limits of disturbance, all Waters of the Commonwealth, sensitive resources to be saved, and proposed infiltration areas for Phase II (Construction Area 1 & 2 on Map CS9000).

2. Install rock construction entrances 2A and 2B. (Construction Area 1, CS8119) Install rock construction entrances 2C, 2D (Construction Area 2, CS8113) and associated construction laydown areas as shown on plans. Construction Laydown areas shall include construction parking.

3. Install all perimeter controls: super silt fence, silt fence and orange construction fence as shown on the plans (Construction Area 1 & 2).

4. Clear and grub areas of construction within the limits of disturbance for Phase II.

5. Install Sediment Basins 3, 8, 9 and 21 with all related appurtenances, including but not limited to E&S Swales, skimmers, baffles, slope matting and silt fence on all cut/fill slopes. Stabilize interior and exterior slopes of basin embankments immediately upon completion of basin construction. Swale construction shall progress from the discharge point upslope and shall be immediately stabilized as constructed per the details shown on CS8501.

6. Strip organic material from the areas of construction within the limits of Phase II (Construction Area 1 & 2) and haul to the top soil stockpile in Construction Area 1.

7. Begin construction of Bridge 4 (STA 905+50) (Construction Area 1). The general sequence of earthmoving activities for the construction of Bridge #4 is as follows:

    A. Field-mark the limits of disturbance.

    B. Install rock construction entrance as shown on plans.

    C. Install all perimeter control: silt fence and orange construction fence.

    D. Clear and grub areas of construction within the limits of disturbance.

    E. Install temporary wetland crossing matting.

    F. Construct crane pad.

        i. Areas where temporary crane pads disturb existing wetlands shall be restored after bridge installation as follows:

            1. Excavate rock base and remove geotextile separation fabric.

            2. De-compact wetland soil using a four-foot ripping hook mounted on a track hoe. The crane pad shall be removed in sections to allow equipment to work from the pad surface and reach into the disturbed wetland area to avoid additional traffic in the disturbed or adjacent wetlands.

            3. Verify that at least 8-inches of suitable topsoil is present in in the disturbed wetland area. If sufficient topsoil is not present, unsuitable soil shall be removed and replaced with topsoil amended with leaf compost or other suitable organic material at a ratio of 2 parts topsoil to 1-part compost. Final grade shall be consistent with the final grade of the surrounding wetland.

            4. Seed the disturbed area with the floodplain seed mixture, as for the river mitigation area (LSI plans dated 10-29-10) at a rate of 20 lbs/acre.

G. Perform local excavations for abutment 2. Dewater excavation site with pumped water filter bags. Multiple bags may be needed for each excavation site due to high water table and wetland flow.

H. Immediately grade disturbed area surrounding abutment 2 and install erosion control matting on all slopes greater than 3:1.

I. Permanently seed all areas disturbed by the construction. An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movement.

J. Continue installing piers and dewatering excavation site with pier 4, working west to abutment 1. Replace wetland crossing matting as needed.

K. After abutment #1 is stable and seeded, remove wetland crossing matting and restore wetlands with the following process:

   i. De-compact wetland soil using a four-foot ripping hook mounted on a track hoe.

   ii. Verify that at least 8-inches of suitable topsoil is present in the disturbed wetland area.

   iii. Seed the disturbed area with the floodplain seed mixture, as specified for the river mitigation area at a rate of 20 lbs/acre.

L. Remove perimeter controls including silt fence and wetland barrier.

M. Stabilize the areas where temporary BMPs were located. Dispose of any sediment as outlined in the maintenance notes.

8. Close Confers Lane at locations shown on the plans.

9. Begin rough grading in area west of North Market Street (Construction Area 1) moving cut material to SUPP Road area north of US11 (Construction Area 2). Begin rough grading of SUPP Road progressing inward (STA 0+00 to STA 41+12.85).

10. As rough grading of SUPP Road is achieved, install geotextile fabric followed by installation of aggregate sub base as shown on the plans.

11. Install plant utility service lines from south abutment for Bridge 6, along Main Access Road to the intersection of Main Access Road and SUPP Road (Construction Area 2). Install temporary pipe closures at termination points. Trench excavation shall be placed uphill of the trench and immediately stabilized once backfilled.

12. Ensure perimeter controls and interior controls are installed and functioning properly prior to continuing rough grading of Main Access Road (STA 151+00 to STA 175+00). As rough grading of access road is achieved, install geotextile fabric followed by installation of aggregate sub base as shown on the plans.

13. Install rail bed (STA 536+00 to STA 555+00).

14. Begin construction of Bridge 2, 5 & 6 The general sequence of earthmoving activities for the construction of bridges #2, 5 and 6 are as follows:

    A. Field-mark the limits of disturbance.

    B. Install rock construction entrance as shown on plans.

    C. Install all perimeter control: silt fence and orange construction fence.

    D. Clear and grub areas of construction within the limits of disturbance.

    E. Install temporary wetland crossing matting.

    F. Construct crane pad.

        i. Areas where temporary crane pads disturb existing wetlands shall be restored after bridge installation as follows:

            1. Excavate rock base and remove geotextile separation fabric.

            2. De-compact wetland soil using a four-foot ripping hook mounted on a track hoe. The crane pad shall be removed in sections to allow equipment to work from the pad surface and reach into the disturbed wetland area to avoid additional traffic in the disturbed or adjacent wetlands.

            3. Verify that at least 8-inches of suitable topsoil is present in in the disturbed wetland area. If sufficient topsoil is not present, unsuitable soil shall be removed and replaced with topsoil amended with leaf compost or other suitable organic material at a ratio of 2 parts topsoil to 1-part compost. Final grade shall be consistent with the final grade of the surrounding wetland.

            4. Seed the disturbed area with the floodplain seed mixture, as for the river mitigation area (LSI plans dated 10-29-10) at a rate of 20 lbs/acre.

    G. Perform local excavations for abutment 2. Dewater excavation site with pumped water filter bags. Multiple bags may be needed for each excavation site due to high water table and wetland flow.

H. Immediately grade disturbed area surrounding abutment 2 and install erosion control matting on all slopes greater than 3:1.

I. Permanently seed all areas disturbed by the construction. An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movement.

J. Continue installing piers and dewatering excavation site with the next pier, working north to abutment 1. Replace wetland crossing matting as needed.

K. After abutment #1 is stable and seeded, remove wetland crossing matting and restore wetlands with the following process:

   i. De-compact wetland soil using a four-foot ripping hook mounted on a track hoe.

   ii. Verify that at least 8-inches of suitable topsoil is present in the disturbed wetland area.

   iii. Seed the disturbed area with the floodplain seed mixture, as specified for the river mitigation area at a rate of 20 lbs/acre.

L. Remove perimeter controls including silt fence and wetland barrier.

M. Stabilize the areas where temporary BMPs were located. Dispose of any sediment as outlined in the maintenance notes.

15. Ensure perimeter controls and interior controls are installed and functioning properly prior to continuing rough grading of Access Road A (STA 339+00 to STA 335+19.70). As rough grading is achieved, install geotextile fabric followed by installation of aggregate sub base as shown on the plans.

16. Begin construction of Bridge 1 (STA 339+00). The general sequence of earthmoving activities for the construction of Bridge 1 is as follows:

A. Field-mark the limits of disturbance, all Waters of the Commonwealth, sensitive resources to be saved, and proposed infiltration areas.

B. Install rock construction entrance as shown on plans.

C. Install all perimeter control: silt fence and orange construction fence.

D. Clear and grub areas of construction within the limits of disturbance.

E. Install temporary wetland crossing matting. If flowing water is encountered, temporary sandbag cofferdams should be installed so that construction can commence in dry conditions.

F. Construct crane pad.

   i. Areas where temporary crane pads disturb existing wetlands shall be restored after bridge installation as follows:

      1. Excavate rock base and remove geotextile separation fabric.

      2. De-compact wetland soil using a four-foot ripping hook mounted on a track hoe. The crane pad shall be removed in sections to allow equipment to work from the pad surface and reach into the disturbed wetland area to avoid additional traffic in the disturbed or adjacent wetlands.

      3. Verify that at least 8-inches of suitable topsoil is present in in the disturbed wetland area. If sufficient topsoil is not present, unsuitable soil shall be removed and replaced with topsoil amended with leaf compost or other suitable organic material at a ratio of 2 parts topsoil to 1-part compost. Final grade shall be consistent with the final grade of the surrounding wetland.

      4. Seed the disturbed area with the floodplain seed mixture, as for the river mitigation area (LSI plans dated 10-29-10) at a rate of 20 lbs/acre.

G. Perform local excavations for abutment 2. Dewater excavation site with pumped water filter bags. Multiple bags may be needed for each excavation site due to high water table and wetland flow.

H. Immediately grade disturbed area surrounding abutment 2 and Install erosion control matting on all slopes greater than 3:1.

I. Permanently seed all areas disturbed by the construction. An area shall be considered to have achieved final stabilization when It has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movement.

J. Continue installing piers and dewatering excavation site starting with pier 4, working west to abutment 1. Replace wetland crossing matting as needed.

K. After abutment #1 is stable and seeded, remove wetland crossing matting and restore wetlands with the following process:

i. De-compact wetland soil using a four-foot ripping hook mounted on a track hoe.

ii. Verify that at least 8-inches of suitable topsoil is present in the disturbed wetland area.

iii. Seed the disturbed area with the floodplain seed mixture, as specified for the river mitigation area at a rate of 20 Lbs/acre.

L. Remove perimeter controls including silt fence and wetland barrier.

M. Stabilize the areas where temporary BMPs were located. Dispose of any sediment as outlined in the maintenance notes.

17. Install perimeter controls and interior controls in the area of the shops and warehouses located between Access Road A and Main Access Road.

18. Install stormwater Basin 3.1 making sure to install Silt Fence on the upslope side of the excavation pit to eliminate sediment laden water from entering the excavation pit.

19. Install foundations for structures located within the limits of disturbance for the Access Road area as shown on the plans.

20. As rough grading progresses, install perimeter controls on cut/fill slopes as shown on the plans and install storm drain system piping and connect to infiltration Basin 3.1. Install filter bags at all catch basin inlets.

21. Install water, sanitary sewer and electrical services to structures located in Construction Area 2. Terminate sewer line at the Sanitary Sewer Lift Station (Construction Area 2). Install temporary pipe closures.

22. Ensure perimeter controls and interior controls are installed and functioning properly in Construction Area 2 along SUPP Rd.

23. Ensure Sediment Basin 3 is remains correctly installed will all related appurtenances.

24. Ensure perimeter controls and interior controls are installed and functioning properly prior to continuing rough grading along west side of SUPP Road (STA 13+27 to STA 41+00) establishing area for future top-soil stockpile area.

25. As sufficient stabilization occurs remove Sediment Basins 8 & 9.

26. Finalize proposed development where Sediment Basins 8 & 9 were removed under perimeter controls as shown on the plans.

27. Once rough grading is complete in Construction Area 1, begin installation of infiltration Basin 8, followed by installation of infiltration Basin 9 making sure to install Silt Fence on the upslope side of the excavation pit to eliminate sediment laden water from entering the excavation pit.

28. Install foundation for Sanitary Sewer Lift Station in the area east of North Market Street as shown on the plans (Construction Area 1).

29. Install foundations for structures located in the area west of North Market Street as shown on the plans (Construction Area 1).

30. Install storm drain system piping and connect to infiltration basins 8 & 9 (Construction Area 1). Install filter bags at all catch basin inlets.

31. Install water, sanitary sewer, and electrical services to structures located in the area west of North Market Street.

32. Continue installation of water and sanitary sewer lines under North Market Street and terminate at the Sanitary Sewer Lift Station (Construction Area 1). Install temporary pipe closures.

33. Final grade entrance road and parking areas west of North Market Street and install sub-base pavement as shown on the plans.

34. Stabilize construction parking and lay-down areas, install geotextile fabric and aggregate sub base (Construction Area 1 & 2).

35. Permanently seed perimeter graded slopes, swales and drainage trenches and clean all water conveyance facilities in area west of North Market Street and northwest quadrant of Access Road area (Construction Area 1 & 2). An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.

36. Remove perimeter controls from the area west of North Market Street (Construction Area 1) as shown on plans that include: super silt fence and silt fence and inlet filter bags as shown on plans.

37. Stabilize the areas where temporary BMPs were located west of North Market Street (Construction Area 1). Dispose of any sediment as outlined in the maintenance notes.

**PHASE III (CS9003)**

Each stage of the sequence must be completed prior to initiation of the next stage of the sequence of earth moving operations within this phase.

1. Perimeter BMPs for phase II, including but not limited to silt fences and orange construction fence, remain in-place in the area along SUPP Road.

2. Field-mark the limits of disturbance, all Waters of the Commonwealth, sensitive resources to be saved, and proposed infiltration areas for Phase III (Construction Area 3 & 4).

3. Install perimeter controls for Phase III: super silt fence and silt fence as shown on plans (Construction Area 3 & 5).

4. Install Sediment Basins 10 and 10A with all related appurtenances, including but not limited to E&S Swales, skimmers, baffles, slope matting and silt fence on all cut/fill slopes. Stabilize interior and exterior slopes of basin embankments immediately upon completion of basin construction. Swale construction shall progress from the discharge point upslope and shall be immediately stabilized as constructed per the details shown on CS8501.

5. Clear and grub the Power Block area within the limits of disturbance (Construction Area 3). Relocate existing utilities in the areas of construction (Construction Area 3). Remove abandoned transmission towers and associated foundations.

6. Begin rough grading of Access Road V east of Bridge 4.

7. Install perimeter controls around the top-soil stock pile area west of North Market Street (Construction Area 1) as show on plans.

8. Strip organic material from the Power Block area within the limits of disturbance (Construction Area 3) and haul to the designated top-soil stock pile area west of North Market Street (Construction Area 1).

9. Begin construction of Bridge 3 (Construction Area 3&4). The general sequence of earthmoving activities for the construction of Bridge 3 is as follows.

    A. Field-mark the limits of disturbance, all Waters of the Commonwealth, sensitive resources to be saved, and proposed infiltration areas.

    B. Install rock construction entrance as shown on plans.

    C. Install all perimeter control: silt fence and orange construction fence.

D. Install sandbag cofferdam to extend past the 100 year storm floodplain elevation. Install 2 36" CMP as shown on plans. Pipes should be depressed 6" from stream bed bottom.

E. Clear and grub areas of construction within the limits of disturbance.

F. Install temporary wetland crossing matting.

G. Construct crane pad.

   ii. Areas where temporary crane pads disturb existing wetlands shall be restored after bridge installation as follows:

      1. Excavate rock base and remove geotextile separation fabric.

      2. De-compact wetland soil using a four-foot ripping hook mounted on a track hoe. The crane pad shall be removed in sections to allow equipment to work from the pad surface and reach into the disturbed wetland area to avoid additional traffic in the disturbed or adjacent wetlands.

      3. Verify that at least 8-inches of suitable topsoil is present in in the disturbed wetland area. If sufficient topsoil is not present, unsuitable soil shall be removed and replaced with topsoil amended with leaf compost or other suitable organic material at a ratio of 2 parts topsoil to 1-part compost. Final grade shall be consistent with the final grade of the surrounding wetland.

      4. Seed the disturbed area with the floodplain seed mixture, as for the river mitigation area (LSI plans dated 10-29-10) at a rate of 20 lbs/acre.

H. Perform local excavations for abutment 2. Dewater excavation site with pumped water filter bags. Multiple bags may be needed for each excavation site due to high water table and wetland flow.

I. Immediately grade disturbed area surrounding abutment 2 and install erosion control all slopes greater than 3:1.

J. Permanently seed all areas disturbed by the construction. An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movement.

K. Continue installing piers and dewatering excavation site starting with pier 2, working north to abutment 1. Replace wetland crossing matting as needed.

L. After abutment #1 is stable and seeded, remove wetland crossing matting and restore wetlands with the following process:

   i. De-compact wetland soil using a four-foot ripping hook mounted on a track hoe.

   ii. Verify that at least 8-inches of suitable topsoil is present in the disturbed wetland area.

   iii. Seed the disturbed area with the floodplain seed mixture, as specified for the river mitigation area at a rate of 20 Lbs/acre.

M. Remove perimeter controls including silt fence and wetland barrier.

N. Stabilize the areas where temporary BMPs were located. Dispose of any sediment as outlined in the maintenance notes.

10. Begin construction of Bridge 7 (Construction Area 3&4). The general sequence of earthmoving activities for Bridge 7 is as follows:

A. Field-mark the limits of disturbance, all Waters of the Commonwealth, sensitive resources to be saved, and proposed infiltration area.

B. Install rock construction entrance as shown on plans.

C. Install all perimeter controls: silt fence and orange construction fence.

D. Clear and grub areas of construction within the limits of disturbance.

E. Install temporary wetland crossing matting.

F. Construct crane pad.

   i. Areas where temporary crane pads disturb existing wetlands shall be restored after bridge installation as follows:

      1. Excavate rock base and remove geotextile separation fabric.

      2. De-compact wetland soil using a four-foot ripping hook mounted on a track hoe. The crane pad shall be removed in sections to allow equipment to work from the pad surface and reach into the disturbed wetland area to avoid additional traffic in the disturbed or adjacent wetlands.

      3. Verify that at least 8-inches of suitable topsoil is present in in the disturbed wetland area. If sufficient topsoil is not present, unsuitable soil shall be removed and replaced with topsoil amended with leaf compost or other suitable organic material at a ratio of 2 parts topsoil to 1-part compost. Final grade shall be consistent with the final grade of the surrounding wetland.

4. Seed the disturbed area with the floodplain seed mixture, as for the river mitigation area (LSI plans dated 10-29-10) at a rate of 20 lbs/acre.

G. Perform local excavations for abutment 2. Dewater excavation site with pumped water filter bags. Multiple bags may be needed for each excavation site due to high water table and wetland flow.

H. Immediately grade disturbed area surrounding abutment 2 and install erosion control matting on all slopes greater than 3:1.

I. Permanently seed all areas disturbed by the construction. An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movement.

J. Continue installing piers and dewatering excavation site starting with pier 2, working north to abutment 1. Replace wetland crossing matting as needed.

K. After abutment #1 is stable and seeded, remove wetland crossing matting and restore wetlands with the following process:

   i. De-compact wetland soil using a four-foot ripping hook mounted on a track hoe.

   ii. Verify that at least 8-inches of suitable topsoil is present in the disturbed wetland area.

   iii. Seed the disturbed area with the floodplain seed mixture, as specified for the river mitigation area at a rate of 20 lbs/acre.

L. Remove perimeter controls including silt fence and wetland barrier.

M. Stabilize the areas where temporary BMPs were located. Dispose of any sediment as outlined in the maintenance notes.

11. Install perimeter controls for Construction Area 4: super silt fence and silt fence as shown on plans.

12. Install Sediment Basins 1 and 1A with all related appurtenances, including but not limited to E&S Swales, skimmers, baffles, slope matting and silt fence on all cut/fill slopes. Stabilize interior and exterior slopes of basin embankments immediately upon completion of basin construction. Swale construction shall progress from the discharge point upslope and shall be immediately stabilized as constructed per the details shown on CS8501.

13. Clear and grub the Parking Lot area within the limits of disturbance (Construction Area 4).

14. Begin rough grading of Access Road B south of Bridge 3 to gain access to Construction Area 4.

15. Begin rough grading in Power Block area (Construction Area 3) moving cut material to SUPP Road, filling remaining low spots from Phase II. Excess cut material from the Power Block area may be hauled to Area 4 to begin filling the Parking Lot area, or Area 2 south of US11.

16. As rough grading progresses, complete construction of Wall No. 1A and No. 1B as shown on the plans.

17. Once rough grading is achieved in remaining Construction Area 2 areas north of US11, final grade access roads and install sub-base pavement as shown on plans.

18. Stabilize construction lay-down areas along SUPP Road and Main Access Road, install geotextile fabric and aggregate sub base (Construction Area 2) and perimeter controls on all cut/fill slopes as shown on the plans.

19. Permanently seed perimeter graded slopes, swales and drainage trenches and clean all water conveyance facilities in the Access Road area (Construction Area 2). An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.

20. Ensure all perimeter and interior controls for Area 3 in the area of Infiltration Basin 12 are installed and functioning property.

21. Install Sediment Basin 12 with all related appurtenances, including but not limited to E&S Swales, skimmers, baffles, slope matting and silt fence on all cut/fill slopes. Stabilize interior and exterior slopes of basin embankments immediately upon completion of basin construction. Swale construction shall progress from the discharge point upslope and shall be immediately stabilized as constructed per the details shown on CS8501.

22. Begin rough grading of Main Access Road North of Bridges 2, 5 & 6 to Sta. 118+00. Installing E&S swales from the discharge point working upslope and as shown on the plans. E&S Swales shall be immediately stabilized with linings as shown on the plans.

23. Once rough grading is complete in Area 3 east of the Tear Drop wetland, begin installation of Infiltration Basin 12 making sure to install Silt Fence on the upslope side of the excavation pit to eliminate sediment laden water from entering the excavation pit.

24. Establish rough grade in the area of Infiltration Basin 12 and install storm drain system piping connecting to Infiltration Basin 12 in the Power Block area (Construction Area 3). Stabilize construction lay-down area, install geotextile fabric and aggregate sub base. Install filter bags at all

catch basin inlets. Stabilize side slopes along Beach Grove Road and adjacent wetland areas by seeding.

25. As sufficient stabilization occurs in Construction Area 3 east of the Tear drop wetland remove Sediment Basin 12.

26. Finalize proposed development where Sediment Basin 12 was removed under perimeter controls as shown on the plans.

27. Install Tear Drop Culvert adjacent to existing PVC pipe.

28. Remove existing PVC pipe and begin rough grade of Access Road W along with construction of Wall No. 3A and Wall No. 3B.

29. Continue rough grading in Power Block area filling low areas behind retaining walls 1A and 3B (Construction Area 3).

30. As sufficient stabilization occurs in Construction Area 3 west of the Tear drop wetland remove Sediment Basins 10 & 10A.

31. Finalize proposed development where Sediment Basin 10 and 10A were removed under perimeter controls as shown on the plans.

32. Once rough grading is complete in Area 3 west of the Tear Drop wetland, begin installation of infiltration Basins 10.1 and 10.4 making sure to install Silt Fence on the upslope side of the excavation pit to eliminate sediment laden water from entering the excavation pit.

33. Continue rough grading in Power Block area filling low areas behind retaining walls 1B and 3A (Construction Area 3). Excess cut material may be used to fill low spots in the Batch Plant area (Construction Area 5) or hauled to the permanent spoils area.

34. As rough grading of Access Road V progresses in the Power Block area (STA 910+00 to 921+24.44), install storm drain system piping and connect to infiltration basin 10.4. Install filter bags at all catch basin inlets.

35. Install water and sewer service lines between east abutment for Bridge 4 and north abutment for Bridge 7 (AREA 3). Install temporary pipe closures.

36. Install remaining water and sewer service lines between east and west abutments for Bridge 4 and connect to previously installed piping.

37. Final grade Access Roads W and V in southern Power Block area between Bridge 3 and Bridge 5 (STA 910+00 to 921+00 & 800+00 to 817+00) and install sub-base pavement as shown on plans (AREA 3).

38. Permanently seed perimeter graded slopes, swales and drainage trenches and clean all water conveyance facilities in the area in the area east of North Market Street (Construction Area 1) and the area between Bridge 3 and Bridge 4 (Construction Area 3). An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.

39. When superstructure for Bridge 6 is complete, install plant utility service lines across Bridge 6 from temporary termination point at south abutment to Power Block area (Construction Area 3). Install temporary pipe closures.

40. While rough grading occurs in the Power Block area, Construction in Area 5 may begin.

41. Field-mark the limits of disturbance, all Waters of the Commonwealth, sensitive resources to be saved, and proposed infiltration areas for Construction Area 5.

42. Install rock construction entrance 3A for rail construction (Construction Area 5) as shown on the plans.

43. Install all perimeter and interior controls as shown on the plans. As installation occurs modify the existing perimeter controls between Construction Areas 2 and 5 to encompass both areas.

44. Install Sediment Basins 6 and 18 with all related appurtenances, including but not limited to baffles, skimmer, slope matting and silt fence on all cut/fill slopes. Stabilize interior and exterior slopes of basin embankments immediately upon completion of basin construction. Swale construction shall progress from the discharge point upslope and shall be immediately stabilized as constructed per the details shown on CS8501.

45. Begin to clear and grub Batch Plant area within the limits of disturbance. Relocate existing utilities in the areas of construction (Construction Area 5).

46. Install perimeter controls around top-soil stock pile area west of access road (Construction Area 2) as show on plans.

47. Strip organic material from the Batch Plant area within the limits of disturbance (Construction Area 5) and haul to the top-soil stock pile area west of SUPP Road.

48. Install plant utility service lines from temporary termination points along north access road to the northeast limit of disturbance for the Batch Plant area (Construction Area 5). Install temporary pipe closures.

49. Begin rough grading of Main Access Road (Sta. 175+00 to 2900+00) installing E&S swales from discharge point working upslope. Swales shall be immediately stabilized with lining as shown on the plans.

50. Grade and stabilized construction laydown areas adjacent to Main Access Road in Construction Area 5. Stabilization of this area shall include but will not be limited to installing geotextile fabric and aggregate subbase material and perimeter controls at the base of all cut/fill slopes.

51. As rough grading of Main Access Road is achieved in Batch Plant area (STA 175+00 to STA 2900+00) (Construction Area 5), install geotextile fabric followed by installation of aggregate sub base as shown on the plans.

52. Ensure all perimeter and interior controls are install and functioning properly in Construction Area 5 in the area of the rail road culvert.

53. Install sandbag coffer dam, pump and hose in Tributary 3 to Lake Took-A While as shown on the plans and details.

54. Construct 48" Rail Road Culvert as shown on the plans.

55. Remove sand bag coffer dam, pump and hose; stabilize the areas where BMPs were located. Dispose of any sediment as outlined in the maintenance notes.

56. Install rail bed (STA 500+00 to STA 536+00) and stabilize slopes as shown on the plans with slope matting/vegetation. Perimeter controls shall be placed on all cut/fill slopes as well.

57. Install foundations for structures located in the Batch Plant area as shown on the plans (Construction Area 5).

58. Install remaining conveyance system for Basin 18. Install filter bags at all catch basin inlets.

59. Install water, sanitary sewer, and electrical services to structures located in the Batch Plant area.

60. Final grade access roads in Batch Plant area (STA 175+00 to STA 2900+00) and install sub-base pavement as shown on plans (Construction Area 5).

61. Stabilize construction lay-down areas in the Batch Plant area; install geotextile fabric and aggregate sub base (Construction Area 5).

62. As stabilization occurs in the Batch Plant area (Construction Area 5), convert Sediment Basin 18 to Infiltration Basin 18 as shown on the plans. Conversion process shall include but will not be limited to dewatering the sediment storage zones of the sediment basin and removing all accumulated sediment. Remove the sediment basin skimmer and construct orifices for stormwater detention. If skimmer does not completely dewater the basin use a pumped water filter bag. Remove baffles. Adjust final grade of basin bed to no less than two feet below sediment basin bed. Proper care shall be taken to reduce any unnecessary compaction of the infiltration bed. Stabilize interior and exterior slopes of basin embankments immediately upon completion of basin construction.

63. As sufficient stabilization occurs in Construction Area 5 south of the batch plant, remove Sediment Basin 6 and begin installation of Infiltration Basin 6 making sure to install Silt Fence on the upslope side of the excavation pit to eliminate sediment laden water from entering the excavation pit.

64. Finalize proposed development where Sediment Basin 6 was removed under perimeter controls as shown on the plans.

65. Permanently seed graded slopes, swales and drainage trenches and clean all water conveyance facilities in the Batch Plant area (Construction Area 5). An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.

66. Remove all perimeter controls from the area east of North Market Street (Construction Area 1), the Access Road area (Construction Area 2) and the Batch Plant area (Construction Area 5) that include: super silt fence, silt fence, and inlet filter bags as shown on plans.

67. Stabilize the areas where temporary BMPs were located in the area east of North Market Street (Construction Area 1), the Access Road area (Construction Area 2) and the Batch Plant area (Construction Area 5). Dispose of any sediment as outlined in the maintenance notes.

68. As grading is finalized in Area 2, south of US 11 all slopes shall be stabilized with slope matting, vegetation and perimeter controls on all cut/fill slopes. An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.

69. Convert Sediment Basin 21 to Infiltration Basin 21 as shown on the plans. Conversion process shall include but will not be limited to dewatering the sediment storage zones of the sediment basin and removing all accumulated sediment. Remove the sediment basin skimmer and construct orifices for

stormwater detention. If skimmer does not completely dewater the basin use a pumped water filter bag. Remove baffles. Adjust final grade of basin bed to no less than two feet below sediment basin bed. Proper care shall be taken to reduce any unnecessary compaction of the infiltration bed. Stabilize interior and exterior slopes of basin embankments immediately upon completion of basin construction.

**PHASE IV (CS9004)**

Each stage of the sequence must be completed prior to initiation of the next stage of the sequence of earth moving operations within this phase.

1. Ensure all field-markings of limits of disturbance, Waters of the Commonwealth and sensitive resources to be saved are adequate for Phase IV.

2. BMPs for Phase III, including but not limited to silt fences, orange construction fence, sediment basins 1, 1A, and 3, remain in-place in the Power Block area, Parking lot, and stock pile(Construction Areas 2, 3 and 4). The perimeter controls as shown on the plans will remain in place until construction of primary power plant structures has progressed sufficiently to permit backfill operations and final grading in the area. Ensure all are installed and functioning properly. BMPs to remain in place include silt fence, Sediment Basins 1 and 1A.

3. Begin mass excavation of the power block and ESWEMS Pond. As excavation progresses install temporary excavation dewatering features, including but not limited to pumped water filter bags, temporary dewatering pond, stilling basin, dewatering pump, and spray irrigation plan. See DE-WATER plan Appendix F.

4. As rough grading of the Power Block area progresses, clear the Parking area within the limits of disturbance (Construction Area 4). Relocate existing utilities in the in the areas of construction (Construction Area 4).

5. Strip organic material from the Parking area within the limits of disturbance (Construction Area 4). Haul organic material to the permanent spoils area as shown on the plans.

6. Begin rough grading in the Parking area (Construction Area 4) moving cut material from the Power Block area (Construction Area 3) to fill low spots.

7. Install foundations for structures located in the Parking area as shown on the plans (Construction Area 4).

8. As rough grading continues in the Parking area (Construction Area 4), Install storm drain system piping and connect to infiltration basin 9. Install filter bags at all catch basin inlets.

9. Install water and sanitary sewer services in the Parking area from Sanitary Sewer Lift Station and Water Meter House to the south abutment for Bridge 7. Install temporary pipe closures at termination points.

10. Install water, sanitary sewer, and electrical services to structures located in the Parking area (Construction Area 4).

11. As rough grading of access roads and parking lots are achieved in the Parking area (Construction Area 4), install geotextile fabric followed by installation of aggregate sub base as shown on the plans.

12. As rough grading in the Parking lot progresses, install Infiltration Basins 1.1, 1.2, 1.3 and detention basin 1.5 making sure to install Silt Fence on the upslope side of the excavation pit to eliminate sediment laden water from entering the excavation pit.

13. When superstructure for Bridge 7 is complete, install water and sewer services between the north and south abutments for Bridge 7 and connect to previously installed piping.

14. Final grade Parking area and install sub-base pavement as shown on plans (Construction Area 4).

15. As sufficient site stabilization occurs, remove Sediment Basins 1 and 1A. Finalize proposed development where Sediment Basins 1 and 1A were removed under perimeter controls as shown on the plans.

16. Permanently seed graded slopes in the Parking area (Construction Area 4) including swales and drainage trenches and clean all water conveyance facilities. An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.

17. Remove all perimeter controls from the Parking area (Construction Area 4) that include: super silt fence, silt fence and inlet filter bags as shown on plans.

18. Stabilize the areas where temporary BMPs were located in the Parking area (Construction Area 4). Dispose of any sediment as outlined in the maintenance notes.

19. Install plant utility service lines in the Power Block area (Construction Area 3). Install temporary pipe closures at all termination points.

20. Complete rough grading in the eastern half of the Power Block, final grading access roads (STA 117+00 to STA 145+00). Install geotextile fabric followed by installation of aggregate sub base (AREA 3)

21. Install rail bed (STA 562+00 to 591+00) and stabilize slopes as shown on the plans with slope matting/vegetation. Perimeter controls shall be placed on all cut/fill slopes as well.

22. Install access road sub-base pavement (STA 117+00 to STA 145+00) as shown on plans.

23. Permanently seed graded slopes and large open areas in eastern half of Power Block area (Construction Area 3) including swales and drainage trenches. Clean all installed water conveyance facilities in the eastern half of the Power Block area. An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.

24. Continue rough grading in the western half of the Power Block area (Construction Area 3)

25. Stabilize construction lay-down areas in the northwest quadrant of the Power Block; install geotextile fabric and aggregate sub base (Construction Area 3).

26. Permanently seed graded slopes, swales and drainage trenches and clean all installed water conveyance facilities in the northwest quadrant of the Power Block area (Construction Area 3). An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.

27. Remove perimeter controls from the Power Block area and parking lot area as shown on the plans (Construction Area 3 & 4) that include: super silt fence, silt fence, silt dike and inlet filter bags as shown on plans.

28. Stabilize the areas where temporary BMPs were located in the Power Block area. Dispose of any sediment as outlined in the maintenance notes.

**PHASE V (CS9005)**

Each stage of the sequence must be completed prior to initiation of the next stage of the sequence of earth moving operations within this phase.

1. Field-mark the limits of disturbance, all Waters of the Commonwealth, sensitive resources to be saved, and proposed infiltration areas for Phase V (Construction Area 9).

2. Install rock construction entrance 5A (Along Thomas Rd.) as shown on the plans.

3. Install all perimeter controls for Phase V: super silt fence and silt fence as shown on plans (Construction Area 9).

4. Clear the access road area from Thomas Road to the Susquehanna No 1 500kV Switchyard area within the limits of disturbance (Construction Area 9). Relocate existing utilities in the in the areas of construction (Construction Area 9).

5. Strip organic material from the access road area from Thomas Road to the Susquehanna No 1 500kV Switchyard within the limits of disturbance (Construction Area 9). Haul organic material to stock pile location as shown on the plans.

6. Rough grade the access road from Thomas Road to the Susquehanna No 1 500KV Switchyard (Construction Area 9). As rough grading of access road is achieved, install geotextile fabric followed by installation of aggregate sub base as shown on the plans. Perimeter BMPs shall be installed on all disturbed cut/fill slopes.

7. As construction progresses from Thomas Road toward the 500KV Switchyard area install vegetated swales beginning at the discharge point and working up slope, stabilized along the way with lining as shown on the plan.

8. Permanently seed graded slopes, swales and drainage trenches along the access road from Thomas Road to the Susquehanna No 1 500kV Switchyard (Construction Area 9). An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.

9. Install Sediment Basins 15 and 15 A with all related appurtenances, including but not limited to slope matting and silt fence on all cut/fill slopes. Stabilize interior and exterior slopes of basin embankments immediately upon completion of basin construction.

10. Clear the Susquehanna No 1 500kV Switchyard area within the limits of disturbance (Construction Area 9).

11. Strip organic material from the Susquehanna No 1 500kV Switchyard within the limits of disturbance (Construction Area 9).

12. Begin rough grading in the Susquehanna No 1 500kV Switchyard (Construction Area 9).

13. While rough grading in the Susquehanna No 1 500kV Switchyard area progresses, install Infiltration Basin 15.3 making sure to install Silt Fence on the upslope side of the excavation pit to eliminate sediment laden water from entering the excavation pit.

14. Install foundations for structures located in the Susquehanna No 1 500kV Switchyard area as shown on the plans (Construction Area 9).

15. Install storm drain system piping and connect to Infiltration Basin 15.3. Install filter bags at all catch basin inlets.

16. Stabilize the Susquehanna No 1 500kV Switchyard area with crushed stone as shown on the plans (Construction Area 9).

17. Final grade the access road from Thomas Road to the Susquehanna No 1 500kV Switchyard area and install crushed stone surfacing material.

18. Permanently seed perimeter graded slopes, swales and drainage trenches and clean all water conveyance facilities in the Susquehanna No 1 500kV Switchyard area (Construction Area 9). An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.

19. As sufficient stabilization occurs remove Sediment Basins 15 and 15A.

20. Finalize proposed development where Sediment Basins 15 & 15A were removed under perimeter controls as shown on the plans.

21. Remove all perimeter controls from the Susquehanna No 1 500kV Switchyard area and from along the access road to the switchyard (Construction Area 9) that include: super silt fence, silt fence and inlet filter bags as shown on plans.

22. Stabilize the areas where temporary BMPs were located in the Susquehanna No 1 500kV Switchyard area and along the access road (Construction Area 9). Dispose of any sediment as outlined in the maintenance notes.

**PHASE VI (CS9006)**

Each stage of the sequence must be completed prior to initiation of the next stage of the sequence of earth moving operations within this phase.

1. Field-mark the limits of disturbance, all Waters of the Commonwealth, sensitive resources to be saved, and proposed infiltration areas for Phase VI (Construction Area 8).
2. Install rock construction entrance 6A as shown on the plans.
3. Install all perimeter controls: super silt fence and silt fence as shown on plans (Construction Area 8).
4. Clear areas of construction within the limits of disturbance for Phase VI (Construction Area 8).
5. Strip organic material from the areas of construction within the limits of phase VI (Construction Area 8).
6. Stabilize the construction laydown by place Geotextile fabric and aggregate sub base per PHMC required mitigation.
7. Seed perimeter graded slopes, swales and drainage trenches within the area of construction for Phase VI (Construction Area 8) as shown on the plans. An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.
8. Remove perimeter controls from the Construction Lay-down area (Construction Area 8) as shown on plans that include: super silt fence and silt fence as shown on plans.
9. Stabilize the areas where BMPs were located for the development of the Construction Lay-down area (Construction Area 8). Dispose of any sediment as outlined in the maintenance notes.

**PHASE VII (CS9007)**

Each stage of the sequence must be completed prior to initiation of the next stage of the sequence of earth moving operations within this phase.

1. Field-mark the limits of disturbance, all Waters of the Commonwealth, sensitive resources to be saved, and proposed infiltration areas for phase VII (Construction Area 6).
2. Install rock construction entrance 7A as shown on the plans.
3. Install all perimeter controls: super silt fence and silt fence as shown on plans (Construction Area 6).
4. Clear areas of construction within the limits of disturbance for Phase VII (Construction Area 6).

5. Strip organic material from the areas of construction within the limits of Phase VII (Construction Area 6) and haul to top soil disposal area shown on the plans.

6. Install temporary dredge material pond and related cut/fill perimeter controls

7. Install cofferdam for the Intake Structure in Susquehanna River and dewater to temporary dredge pond.

8. Excavate area for Intake Structure placing all dredge material from river bottom in temporary dredge pond.

9. Install foundations for Intake Structure and rough grade site area. Please cut/fill perimeter controls as shown on the plans and as required.

10. As construction of Intake Structure progresses, excavate trench and install plant utility service lines from the Intake Structure to west side of canal (Construction Area 6). Install temporary pipe closures at termination points.

11. Rough grade areas of trench excavation once plant utility lines are installed.

12. Install cofferdam for Blow-down Line Diffuser in Susquehanna River and dewater to temporary dredge pond.

13. Excavate trench and install Blow-down Line Diffuser in the Susquehanna River (Construction Area 6).

14. Once Blow-down Line is installed, rough grade areas of trench excavation and stabilize disturbed areas as shown on the plans and place perimeter controls on cut/fill slopes as shown on the plans and as required.

15. As rough grade for the access road to the Intake Structure (STA 5000+00 to STA 5003+45) is achieved, install geotextile fabric followed by installation of aggregate sub base as shown on the plans.

16. As rough grade for the Intake Structure yard area is achieved, install aggregate sub base as shown on the plans.

17. Install sub-base pavement for the Intake Structure access road (STA 5000+00 to STA 5003+45) and associated Intake Structure yard area as shown on plans.

18. Install rip-rap shore protection along river banks as shown on the plans (Construction Area 6).

19. Remove cofferdams and install rip-rap shore protections in any remaining areas where cofferdam is removed.

20. Excavate dewatered dredge material from the temporary dredge material pond and haul to the permanent spoils area as shown on the plans.

21. Remove the temporary dredge material pond hauling any excess materials to the permanent spoils area, as shown on the plans, and grade the area.

22. Perform canal restoration activities; the canal restoration construction sequence is as follows:

**Construction notes:**

A. At least 7 days before starting any earth disturbance activities the operator shall invite all contractors involved in those activities including but not limited to: the landowner, all appropriate municipal officials, the erosion and sediment control plan preparer, and a representative from the Luzerne Conservation District for an on-site pre-construction meeting. Also, at least 3 days before starting any earth disturbance activities, all contractors involved in those activities shall notify the Pennsylvania one call system incorporated at 1-800-242-1776 for buried utilities locations.

B. It is the responsibility of the contractor to contact the Luzerne Conservation District 72 hours prior to construction and 72 hours prior to leaving the site.

C. Excess clean excavated material shall be hauled from the site immediately and disposed of within the BBNPP project area.

D. If water needs to be pumped from the excavated area, it shall be pumped through a pumped water filter bag discharging over non-disturbed areas.

E. 8" of topsoil shall be spread throughout the disturbed area to achieve final grade and provide a suitable planting media.

F. An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movement.

G. All earth disturbance activities shall proceed in accordance with the following sequence. Each stage shall be completed before any following stage is initiated. Clearing and grubbing shall be limited only to those areas described in each stage.

H. The installation of the pipe, manhole, inlet and outfall structures may take place at any time during the construction of the Riverlands mitigation project, however the installation of the pipe and drainage network must be complete and functioning prior to the filling of the tributary from station 7+25 to 11+50 for the construction of the proposed intake structure. The construction

of the drainage network must begin with the outfall structure at the river, working uphill to the manhole and the inlet structure at pipe station 7+25.

I. The repair and maintenance of the Riverlands wetland control structure may be conducted at any time as the procedure is unaffected by the following sequence. See sheet 5 for the original construction details.

J. Limit of disturbance shall be staked out in the field.

K. Install orange construction fence where LOD is adjacent to existing wetlands to prevent additional disturbance to these wetlands.

L. Install stabilized construction entrance

M. Install fabric filter sock as shown on the plan

N. Perform necessary clearing and grubbing within proposed limit of disturbance.

O. Install sandbags in upstream and downstream culverts, as shown on the plan, and set up pump around. Install pumps to de-water canal reconnection area. Care must be exercised to prevent the disturbance and pumping of sediment. Filter bags must be used unless pumping clear water (see detail e-4 on sheet 9 for filter bag installation).

P. Begin grading at canal station 7+50 and work upstream to station 4+50.

Q. Remove existing weir (station 5+00) and backfill existing channel with structural fill. Material placed to fill the existing diverted canal and form the restored canal embankment shall be placed in 6" lifts and compacted to at least 95% standard proctor density. Blend grading surrounding existing weir and tie into existing contours. A minimum of 8" of topsoil must be spread on all fill locations, with the exception of the proposed paths, to obtain final grade.

R. Fill tow path (stations 0+00 to 2+50) and construct walking path.

S. Fill entrenched stream channel to an elevation of 499.00 working from the upstream forked reach downstream to the proposed inlet structure at pipe station 7+25. Use small tracked equipment to avoid compacting the soils (both native and filled material). Add amended topsoil from the proposed inlet structure pad fill (pipe station 7+25) upstream to the location of the proposed weir removal (station 5+00).

T. Excavate crossing to solid base material and fill with structural fill material. Install base for stop log structure. Install stop log structure and pipe.

U. Remove existing canal diversion embankment (canal station 4+50 to 3+50) and reconstruct canal berm as shown on the grading plan and profiles. Material placed to fill the existing diverted canal and form the restored canal embankment shall be placed in 6" lifts and compacted to at least 95% standard proctor density.

V. Set grade control structure stop logs to an elevation of 507.20' and remove coffer dams and pumps.

W. Seed and stabilize all disturbed areas with appropriate seed mix per the seeding restoration table and the landscape plan. Erosion control matting (biod-mat 70 or equivalent) must be installed in areas indicated on the E&S plan sheet

X. Remove invasive species prior to planting.

Y. Install proposed riparian vegetation as indicated on landscaping plan.

Z. Remove stabilized construction entrance.

AA. Remove fabric filter sock after all upslope disturbed areas have achieved a minimum of 70% vegetative cover. Stabilize any areas disturbed while removing these BMPs with the proposed stabilization seed mix and mulch.

23. Seed perimeter graded slopes, swales and drainage trenches within the area of construction for Phase VII (Construction Area 6) as shown on the plans. An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.

24. Remove perimeter controls from the Intake Structure area (Construction Area 6) that include: super silt fence, silt fence and silt dike as shown on plans.

25. Stabilize the areas where temporary BMPs were located for the development of the Construction Lay-down area (Construction Area 6). Dispose of any sediment as outlined in the maintenance notes.

**PHASE VIII (CS9008)**

Each stage of the sequence must be completed prior to initiation of the next stage of the sequence of earth moving operations within this phase.

1. Field-mark the limits of disturbance, all Waters of the Commonwealth, sensitive resources to be saved, and proposed infiltration areas for Phase VIII (Construction Area 7).

2. Install all perimeter and interior controls: super silt fence and silt fence as shown on plans (Construction Area 7).

3. Clear areas of construction within the limits of disturbance for Phase VIII (Construction Area 7).

4. Strip organic material from the areas of construction within the limits of Phase VIII (Construction Area 7) and haul to the permanent spoils area shown on the plans.

5. Excavate trench east of US11 and install plant utility service lines from the termination points at canal restoration area (Construction Area 6) to US11. Install temporary pipe closures at termination points.

6. Install plant utility services as shown on the plans.

7. Excavate trench west of US11 and install plant utility service lines from the Batch Plant area to US11 completing the plant utility service line installation.

8. Rough grade areas of trench excavation.

9. Restore any disturbed areas along the east and west sides of US11 as shown on the plans.

10. Seed graded areas, swales and drainage trenches within the area of construction for Phase VIII (Construction Area 7) as shown on the plans. An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.

11. Remove perimeter controls from areas of construction for Phase VIII (Construction Area 7) that include: super silt fence and silt fence as shown on plans.

12. Stabilize the areas where temporary BMPs were located (Construction Area 7). Dispose of any sediment as outlined in the maintenance notes.

**PHASE IX (CS9009)**

Each stage of the sequence must be completed prior to initiation of the next stage of the sequence of earth moving operations within this phase.

1. Begin construction of the Power Block structures.

2. As construction of the Power Block structures progresses, construct retaining wall 4 as shown on the plans.

3. As backfill operations within the Power Block mass excavation progress, remove dewatering features as necessary and stabilize the areas where these BMPs were located. Dispose of any sediment as outlined in the maintenance notes.

4. Once the area behind retaining wall 4 is backfilled, install rail bed (STA 591+00 to 606+55.30) (Construction Area 3) and stabilize slopes as shown on the plans with slope matting/vegetation. Perimeter controls shall be placed on all cut/fill slopes as well.

5. Install remaining section of the access road in northwest quadrant of Power Block area (STA 100+00 to STA 117+00) (Construction Area 3).

6. As installation of the access road progresses (STA 100+00 to STA 117+00), install geotextile fabric followed by installation of aggregate sub base.

7. Install permanent storm water drainage piping and catch basins within the Power Block area.

8. Install plant roads within the Power Block area.

9. As installation of plant roads progresses, install geotextile fabric followed by installation of aggregate sub base.

10. Final grade all roads within the Power Block area and install sub-base pavement as shown on the plans.

11. Stabilize areas within the Power Block area; install geotextile fabric and aggregate sub base.

12. Seed graded areas, swales and drainage trenches within the area of construction for Phase IX (Construction Area 3) as shown on the plans. An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.

13. Remove perimeter controls from areas of construction for Phase IX (Construction Area 3) that include: super silt fence and silt fence as shown on plans.

14. Stabilize the areas where temporary BMPs were located (Construction Area 3). Dispose of any sediment as outlined in the maintenance notes.

15. Seed graded areas, swales and drainage trenches associated with the stock piles in Areas 1 and 2 as shown on the plans. An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements.

16. After stabilization occurs for the stock pile in Construction Area 2, convert Sediment Basin 3 to Infiltration Basin 3.2 as shown on the plans. Conversion process shall include but will not be limited

to dewatering the sediment storage zones of the sediment basin and removing all accumulated sediment. Remove the sediment basin skimmer and construct orifices for stormwater detention. If skimmer does not completely dewater the basin use a pumped water filter bag. Remove baffles. Adjust final grade of basin bed to no less than two feet below sediment basin bed. Proper care shall be taken to reduce any unnecessary compaction of the infiltration bed. Stabilize interior and exterior slopes of basin embankments immediately upon completion of basin construction.

17. Remove perimeter controls from both stock piles; including super silt fence and silt fence as shown on plans.

18. Stabilize the areas where temporary BMPs were located (Construction Area 3). Dispose of any sediment as outlined in the maintenance notes.

**PHASE X (CS9010)**

**Construction sequence Confers Lane:**

**Construction notes:**

At least 7 days before starting any earth disturbance activities the operator shall invite all contractors involved in those activities including but not limited to: the landowner, all appropriate municipal officials, the erosion and sediment control plan preparer, and a representative from the Luzerne Conservation District for an on-site pre-construction meeting. Also, at least 3 days before starting any earth disturbance activities, all contractors involved in those activities shall notify the Pennsylvania one call system incorporated at 1-800-242-1776 for buried utilities locations.

It is the responsibility of the contractor to contact the Luzerne Conservation District 72 hours prior to construction and 72 hours prior to leaving the site.

Clean excavated material shall be hauled from the site and disposed of within the project area.

If water needs to be pumped from the excavated area, it shall be pumped through a pumped water filter bag discharging over non-disturbed areas.

The operator shall remove from the site, recycle, or dispose of all building materials and wastes in accordance with the department's solid waste management regulations at 25 Pa. Code 260.1 et seq., 271.1 et seq., and 287.1 et seq. The contractor shall not illegally bury, dump, or discharge any building material or wastes at the site.

Graded areas within the proposed wetland shall be stabilized with the proposed conservation seed mix prior to plantings.

An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movement.

All earth disturbance activities shall proceed in accordance with the following sequence. Each stage shall be completed before any following stage is initiated. Clearing and grubbing shall be limited only to those areas described in each stage.

**Construction stages:**

1. Stake out limit of disturbance in the field.
2. Install orange construction fence where Limit of Disturbance is adjacent to existing wetlands to prevent additional disturbance to these wetlands.
3. Install filter sock as shown on the plan
4. Perform necessary clearing and grubbing within proposed limit of disturbance.
5. Remove existing pavement and stone base.
6. Excavate proposed wetland area to proposed sub-grade elevations. Scarify subsoil to a depth of at least eight (8) inches.
7. Add compost and topsoil mixture with a ratio of 75% clean, native soil and 25% compost. Soil/compost shall be thoroughly mixed.
8. Place soil/compost mixture on wetland to proposed final grade elevations (1' min.).
9. Seed disturbed area with floodplain seed mix, per the landscape plan. Mulch seeded area with straw at 3 tons per acre.
10. Install proposed vegetation within graded wetland per the landscape plan and details.
11. Remove filter sock after disturbed areas have achieved a minimum of 70% vegetative cover. Stabilize any areas disturbed while removing this bmp with the proposed stabilization seed mix and mulch.

**Construction sequence Walker Run:**

**Construction notes:**

At least 7 days before starting any earth disturbance activities the operator shall invite all contractors involved in those activities including but not limited to: the landowner, all appropriate municipal officials, the erosion and sediment control plan preparer, and a representative from the Luzerne Conservation district for an on-site pre-construction meeting. Also, at least 3 days before starting any earth disturbance activities, all contractors involved in those activities shall notify the Pennsylvania one call system incorporated at 1-800-242-1776 for buried utilities locations.

It is the responsibility of the contractor to contact the Luzerne Conservation District 72 hours prior to construction and 72 hours prior to leaving the site.

Excavated material shall be temporarily stockpiled at location shown on plan. Filter fabric fence shall be installed around the base of stockpile as shown on plan. Stockpiled material shall be hauled from the site and transported to an approved off-site spoil area located within existing PP&L maintenance facility dump site.

Excavated topsoil shall be stockpiled separate from other excavated material within the temporary stockpile area. A 6" thick layer of topsoil shall be spread throughout proposed floodplain area to achieve final grade.

Graded areas along an 8- to 10-foot wide (approximate) swath along the stream channel shall be stabilized with 6" thick (approximate) 4'x5' sod mats by the end of each workday. Sod shall be harvested from areas within the proposed limit of disturbance prior to excavation. Erosion control fabric shall be used to stabilize stream banks in place of sod mats if necessary. The proposed conservation seed mix shall be applied prior to installing erosion control fabric.

Graded areas within the proposed floodplain shall be stabilized with erosion control fabric. Erosion control fabric shall be installed in overlapping strips perpendicular to the direction of flood flows. The proposed conservation seed mix shall be applied to graded areas prior to installing erosion control fabric.

An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movement.

All earth disturbance activities shall proceed in accordance with the following sequence. Each stage shall be completed before any following stage is initiated. Clearing and grubbing shall be limited only to those areas described in each stage.

**Construction stages:**

1. Limit of disturbance shall be staked out in the field.
2. Install rock construction entrance (R.C.E).
3. Install rock filter at designated location.
4. Perform necessary clearing and grubbing within proposed limit of disturbance.
5. Grade right stream bank and excavate floodplain along 8-foot wide (approximate) swath parallel to existing stream channel.
6. Stabilize 8-foot swath (approximate) with sod mats.
7. Excavate remaining floodplain to proposed sub-grade elevations.
8. Spread topsoil on floodplain to proposed final grade elevations.
9. Seed (conservation seed mix - ernmx-114) and stabilize graded floodplain with erosion control fabric.
10. Remove rock construction entrances (R.C.E.).
11. Seed (stabilization seed mix) and mulch all remaining disturbed areas outside of graded floodplain limits.
12. Install proposed riparian vegetation within graded floodplain.
13. Remove filter fabric fence and rock filter after uphill disturbed areas have achieved a minimum of 70% vegetative cover. Stabilize any areas disturbed while removing these temporary BMPs with the proposed stabilization seed mix and mulch.

Note: Install all Erosion and Sedimentation control devices as required by the narrative, plan, and field conditions. These measures shall be maintained during construction and until the permanent ground cover is established in the disturbed areas. To maximize the effectiveness of this plan, the

contractor shall arrange an on-site review with personnel from the Luzerne Conservation District to determine how to best implement the plan.

## VII. EROSION CONTROL MEASURES

In addition to the construction requirements outlined above, the following materials and devices shall be installed as shown on the plans. Temporary measures shall be taken during rough grading or any earth disturbance. Construction and installation details for these devices are contained on the attached plans.

All BMPs shall be installed in accordance with the approved Erosion and Sedimentation Control Plan. Each BMP shall be installed as necessary prior to grading or excavation, and remain until adequate vegetative cover is established.

Straw mulch shall be installed in all disturbed areas immediately following seeding operations.

All construction activities shall be performed using appropriate equipment and methods that are considered standard for this type of activity or as specifically required by the specifications.

The contractor is required to conduct his work in complete compliance with the requirements of this plan and the rules and regulations of the following governmental agencies:

- The Pennsylvania Department of Environmental Protection.
- The Luzerne Conservation District.
- The U.S. Department of Agriculture Natural Resources Conservation Service (USDANRCS)

During construction all areas involved with the contractor's operation will be kept clean, and dust shall be controlled by mechanical and/or hand sweeping, calcium spreading or other approved methods on a daily basis or as required. PPC Plans must be adhered to by the contractor as required.

## VIII. SEEDING

The only control measure remaining for site restoration and longterm protection is the seeding and mulching of the proposed site.

<u>FOR TEMPORARY MEASURES</u>

SEED FORMULA: PennDOT Formula E

100% Annual Ryegrass

1. Apply ground limestone at 1 ton per acre.
2. Apply Formula E seed at 48 lbs per acre.
3. Apply hay or straw mulch at 3 tons per acre.
4. Perform seeding between March 15 and October 15.

FOR FINAL MEASURES

**For Slopes 3:1 or flatter-**

SEED FORMULA: PennDOT Formula B

20% Perennial Ryegrass Mixture
30% Creeping Red Fescue or Chewings Fescue
40% Kentucky Bluegrass Mixture

1. Apply ground limestone at 10 tons per acre.
2. Apply fertilizer (100 lbs of N, 200 lbs P2O5 and 200 lbs of K2O) at 500 lbs per acre
3. Apply Formula B seed at 101.6 lbs per acre.
4. Apply hay or straw mulch at 3 tons per acre.
5. Perform seeding between March 15 and June 1, and August 1 and October 15.

**For slopes greater than 3:1-**

SEED FORMULA: PennDOT Formula D

70% Tall Fescue
30% Creeping Red Fescue or Chewings Fescue

1. Apply ground limestone at 10 tons per acre.
2. Apply fertilizer (100 lbs of N, 200 lbs P2O5 and 200 lbs of K2O) at 500 lbs per acre
3. Apply Formula B seed at 101.6 lbs per acre.
4. Apply hay or straw mulch at 3 tons per acre.
5. Perform seeding between March 15 and June 1, and August 1 and October 15.

## IX. MAINTENANCE

It will be the permittee/co-permittee's responsibility for maintenance of the erosion control measures during construction. Permanent erosion control for the site after construction will be the responsibility of the landowner. The following maintenance measures should be taken:

In general, check all erosion and sediment control measures weekly, and after each rainfall event.

Sediment will be excavated, spread on site, stabilized, and dried for use in site grading.

Sediment removed from the E&S control facilities shall be disposed of in landscaped areas outside of steep slopes, wetlands, floodplains or drainage swales and immediately stabilized, or placed in topsoil stockpiles.

Silt Fence Barriers will be cleaned when sediment accumulates to one-half their height.

All seeded areas will be checked regularly to ensure that a good stand is maintained. Areas should be fertilized and reseeded as necessary.

All mulched areas shall be frequently checked and closely monitored with respect to their effectiveness in controlling erosive storm runoff velocities and sediment transport. Areas will be re-mulched as often as necessary until adequate ground cover is established.

Silt fences and filter barriers shall be inspected immediately after each rainfall, and at least daily, during prolonged rainfall. Any required repairs shall be made immediately.

Should the fabric on the silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier still be necessary, the fabric shall be replaced promptly. Sediment deposits should be removed after each storm event and/or when deposits reach approximately one-half the height of the barrier.

Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform to the existing grade, prepared and seeded.

Sediment Basins shall be inspected on a weekly basis and after each runoff event. A clean out stake shall be placed near the center of each basin. Accumulated sediment shall be removed when it has reached the clean out elevation on the stake and restore the basin to its original dimensions. Dispose of materials removed from the basin in the manner described in the E&S Plan.

Rock Construction Entrances shall be inspected daily or after periods of heavy muddy usage. If rock voids become full of sediment remove rock and replace with clean rock.

## X. SUMMARY

In view of the numerous provisions proposed to control sedimentation and erosion, no serious sedimentation or erosion is anticipated to occur from this proposed construction operation. If unforeseen conditions require use of temporary or permanent controls other than those on the approved E&S Pollution Control Plan, the Luzerne Conservation District must be notified as soon as possible for on-site inspection/review.

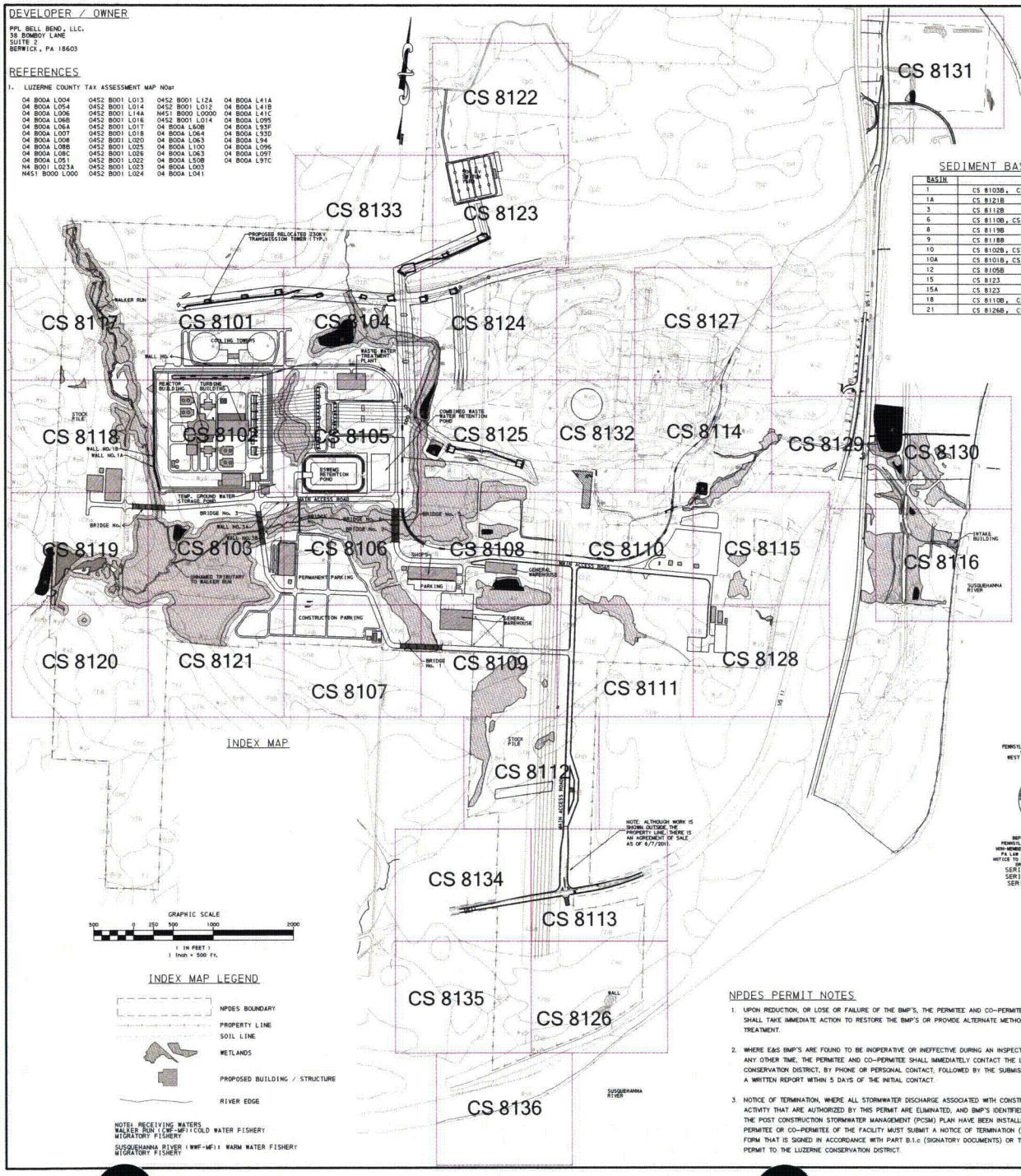
## DEVELOPER / OWNER

PPL BELL BEND, LLC.
38 BOMBOY LANE
SUITE 2
BERWICK, PA 18603

## REFERENCES

1. LUZERNE COUNTY TAX ASSESSMENT MAP NOs:

| | | | |
|---|---|---|---|
| 04 B00A L004 | 04S2 B001 L013 | 04S2 B001 L12A | 04 B00A L41A |
| 04 B00A L054 | 04S2 B001 L014 | 04S2 B001 L012 | 04 B00A L41B |
| 04 B00A L006 | 04S2 B001 L14A | N4S1 B000 L0000 | 04 B00A L41C |
| 04 B00A L06B | 04S2 B001 L016 | 04S2 B001 L014 | 04 B00A L095 |
| 04 B00A L06A | 04S2 B001 L017 | 04 B00A L60B | 04 B00A L93F |
| 04 B00A L00T | 04S2 B001 L018 | 04 B00A L064 | 04 B00A L93D |
| 04 B00A L008 | 04S2 B001 L020 | 04 B00A L063 | 04 B00A L94 |
| 04 B00A L08B | 04S2 B001 L025 | 04 B00A L10D | 04 B00A L096 |
| 04 B00A L08C | 04S2 B001 L026 | 04 B00A L063 | 04 B00A L097 |
| 04 B00A L051 | 04S2 B001 L022 | 04 B00A L50B | 04 B00A L9TC |
| N4 B001 L023A | 04S2 B001 L023 | 04 B00A L003 | |
| N4S1 B000 L000 | 04S2 B001 L024 | 04 B00A L041 | |




INDEX MAP

GRAPHIC SCALE
500 0 250 500 1000 2000
( IN FEET )
1 inch = 500 ft.

## INDEX MAP LEGEND

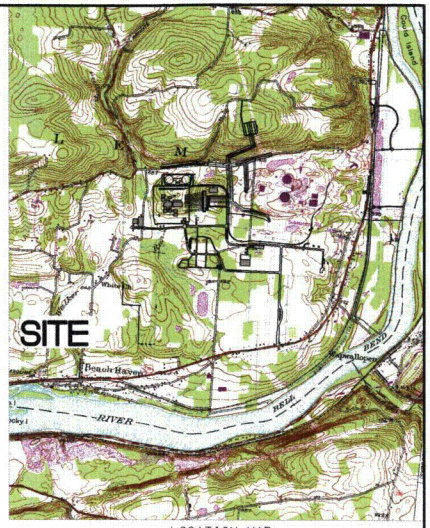
- NPDES BOUNDARY
- PROPERTY LINE
- SOIL LINE
- WETLANDS
- PROPOSED BUILDING / STRUCTURE
- RIVER EDGE

NOTE: RECEIVING WATERS
WALKER RUN (CWF-MF) (COLD WATER FISHERY MIGRATORY FISHERY)

SUSQUEHANNA RIVER (WWF-MF) (WARM WATER FISHERY MIGRATORY FISHERY)

## SEDIMENT BASIN CHART

| BASIN | SHEET |
|---|---|
| 1 | CS 8103B, CS 8106B |
| 1A | CS 8121B |
| 3 | CS 8112B |
| 6 | CS 8110B, CS 8115B, CS 8128B |
| 8 | CS 8119B |
| 9 | CS 8118B |
| 10 | CS 8102B, CS 8103B |
| 10A | CS 8101B, CS 8117 |
| 12 | CS 8105B |
| 15 | CS 8123 |
| 15A | CS 8123 |
| 18 | CS 8110B, CS 8115B |
| 21 | CS 8126B, CS 8135B |




LOCATION MAP
BERWICK QUADRANGLE
SCALE: 1"=2000'

## GENERAL NOTES

1. BOUNDARY INFORMATION SHOWN HEREON WAS OBTAINED BY A BOUNDARY SURVEY PERFORMED BY PENNONI ASSOCIATES, INC. ; WHICH TOOK PLACE DURING MAY 2010 AND AUGUST 2010.
2. PENNONI ASSOCIATES, INC. DOES NOT GUARANTEE THE LOCATION OF SUB-SURFACE STRUCTURES OR SURFACES THAT ARE NOT VISIBLE AT THE TIME OF SURVEY.
3. CONTOUR INTERVAL SHOWN IS 2' AND IS BASED ON NAVD88 DATUM.
4. TOPOGRAPHIC AND PLANIMETRIC INFORMATION SHOWN IS FROM SURVEYS PREFORMED BY AEROCON PHOTOGRAMMETRIC SERVICES, INC. IN NOVEMBER 2007, JANUARY 2008, AND 2010.
5. IMPROVEMENTS SHOWN ON THIS PLAN ARE SUBJECT TO THE RULES AND REGULATIONS CONTAINED IN THE SALEM TOWNSHIP ZONING ORDINANCE.
6. HIGHWAY OCCUPANCY PERMITS FOR ACCESS TO ROADS UNDER THE JURISDICTION OF SALEM TOWNSHIP.
7. ACCORDING TO THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP FOR SALEM TOWNSHIP – COMMUNITY PANEL NUMBER 420625 0020 B, PANEL 20 OF 20, EFFECTIVE DATE MARCH 18,1980.

## DRAWING LIST

| | |
|---|---|
| CS8001 | EROSION AND SEDIMENTATION INDEX PLAN |
| CS8002 | EROSION AND SEDIMENTATION SOIL CHARACTERISTICS |
| CS8003 | EROSION AND SEDIMENTATION CONSTRUCTION SEQUENCE |
| CS8004 | EROSION AND SEDIMENTATION CONSTRUCTION SEQUENCE |
| CS8101A | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8101B | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8102A | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8102B | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8103A | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8103B | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8104A | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8104B | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8105A | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8105B | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8106A | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8106B | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8107 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8108 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8109 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8110A | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8110B | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8111 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8112A | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8112B | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8113 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8114 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8115A | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8115B | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8116 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8117 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8118A | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8118B | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8119A | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8119B | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8120 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8121A | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8121B | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8122 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8123 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8124 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8125 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8126A | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8126B | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8127 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8128A | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8128B | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8129 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8130 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8131 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8132 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8133 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8134 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8135A | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8135B | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8136 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8201 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8202 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8203 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8204 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8205 | EROSION AND SEDIMENTATION CONTROL PLAN |
| CS8301* | LSI STREAM AND WETLAND MITIGATION E&S PLAN-WALKER RUN |
| CS8302* | LSI STREAM AND WETLAND MITIGATION E&S PLAN-WALKER RUN |
| CS8303* | LSI STREAM AND WETLAND MITIGATION E&S PLAN-WALKER RUN |
| CS8304* | LSI STREAM AND WETLAND MITIGATION E&S DETAILS-WALKER RUN |
| CS8305* | LSI STREAM AND WETLAND MITIGATION E&S NOTES-WALKER RUN |
| CS8306* | LSI STREAM AND WETLAND MITIGATION E&S CONSTRUCTION SCHEDULE-WALKER RUN |
| CS8307* | LSI WETLAND MITIGATION E&S PLAN- CONFERS LANE |
| CS8308* | LSI WETLAND MITIGATION E&S DETAILS AND NOTES-CONFERS LANE |
| CS8309* | LSI WETLAND MITIGATION E&S PLAN- RIVERLANDS SITE |
| CS8310* | LSI WETLAND MITIGATION E&S DETAILS AND NOTES-RIVERLANDS SITE |
| CS8501 | EROSION AND SEDIMENTATION CONTROL DETAILS |
| CS8502 | EROSION AND SEDIMENTATION CONTROL DETAILS |
| CS8503 | EROSION AND SEDIMENTATION CONTROL DETAILS |
| CS8504 | EROSION AND SEDIMENTATION CONTROL DETAILS |
| CS8505 | EROSION AND SEDIMENTATION CONTROL NOTES |

*ALL SHEET REFERENCES ON LSI PLANS ARE INTERNALLY COORDINATED AND REFER TO LSI SHEET NUMBERS.

## ALSO PLANS

SEQUENCE OF CONSTRUCTIONS PLANS
CS9000 - CS9010

PENNSYLVANIA ONE CALL SYSTEM, INC.
925 IRWIN RUN ROAD
WEST WIFFLIN, PENNSYLVANIA
15122-1078

BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA! CALL 1-800-242-1776
NON-MEMBERS MUST BE CONTACTED DIRECTLY
PA LAW REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL, BLAST OR DEMOLISH
SERIAL NO. 20102372836
SERIAL NO. 20102850158
SERIAL NO. 20102930212

## NPDES PERMIT NOTES

1. UPON REDUCTION, OR LOSE OR FAILURE OF THE BMP'S, THE PERMITEE AND CO-PERMITEE SHALL TAKE IMMEDIATE ACTION TO RESTORE THE BMP'S OR PROVIDE ALTERNATE METHOD OF TREATMENT.
2. WHERE E&S BMP'S ARE FOUND TO BE INOPERATIVE OR INEFFECTIVE DURING AN INSPECTION, OR ANY OTHER TIME, THE PERMITEE AND CO-PERMITEE SHALL IMMEDIATELY CONTACT THE LUZERNE CONSERVATION DISTRICT, BY PHONE OR PERSONAL CONTACT, FOLLOWED BY THE SUBMISSION OF A WRITTEN REPORT WITHIN 5 DAYS OF THE INITIAL CONTACT.
3. NOTICE OF TERMINATION, WHERE ALL STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITY THAT ARE AUTHORIZED BY THIS PERMIT ARE ELIMINATED, AND BMP'S IDENTIFIED IN THE POST CONSTRUCTION STORMWATER MANAGEMENT (PCSM) PLAN HAVE BEEN INSTALLED, THE PERMITEE OR CO-PERMITEE OF THE FACILITY MUST SUBMIT A NOTICE OF TERMINATION (NOT) FORM THAT IS SIGNED IN ACCORDANCE WITH PART B.1.c (SIGNATORY DOCUMENTS) OR THIS PERMIT TO THE LUZERNE CONSERVATION DISTRICT.

Pennoni Associates Inc.
Engineers • Surveyors • Planners • Landscape Architects

Pennoni

| NO. | DATE | REVISIONS | BY |
|---|---|---|---|
| 2 | 11/04/11 | PENNSYLVANIA ONE CALL SERIAL NUMBERS ADDED, NOTE ADDED TO "GENERAL NOTES" | JMD |
| 1 | 9/15/11 | EXCESS EARTH DISPOSAL RESTRICTION ADDED TO GENERAL NOTES | DFC |
| 0 | 11/15/10 | INITIAL SUBMISSION | DFC |

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK

100 N. Wilkes-Barre Boulevard
Wilkes-Barre, PA 18702 (570) 824-2200

BELL BEND NUCLEAR POWER PLANT
SALEM TOWNSHIP, PENNSYLVANIA
EROSION AND SEDIMENTATION CONTROL
INDEX PLAN
PPL BELL BEND, LLC
38 BOMBOY LANE, SUITE 2
BERWICK, PA 18603



JOB NO. PPL50902
SHEET 1 OF 75

SCALE 1"=500'
DRAWN BY LGB
DATE 9/15/2011
APPROVED JFM
DRAWING NO. CS8001