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November 15, 2013

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Washington, D.C. 20555-0001

BELL BEND NUCLEAR POWER PLANT
COLA PART 3 UPDATE AND BEMP ERRATA
BNP-2013-148 Docket No. 52-039

References: 1) BNP-2013-050, R. R. Sgarro (PPL Bell Bend, LLC) to U.S. NRC, "Submittal of Bell Bend COLA Revision 4" dated April 12, 2013

2) BNP-2013-131, R. R. Sgarro (PPL Bell Bend, LLC) to U.S. NRC, "Information in Support of a Biological Assessment under Section 7 of the Endangered Species Act" dated October 3, 2013

The purpose of this letter is to provide changes to the Bell Bend Nuclear Power Plant (BBNPP) Combined License Application (COLA) Part 3 Environmental Report (ER) submitted with Reference 1. Enclosure 1 provides markups indicating changes to the ER. Enclosure 2 provides the errata to the *Indiana Bat Biological Evaluation and Management Plan for the Bell Bend Nuclear Power Plant Project*, Revision 1 (BEMP) submitted with Reference 2.

In Reference 2, PPL Bell Bend, LLC (PPL) stated it would incorporate the revised BEMP in a future COLA revision. After discussion with the Staff, PPL will remove the BEMP from Part 11 in the next BBNPP COLA revision.

The changes to the ER will be included in the next revision of the BBNPP COLA and that is the only regulatory commitment in this correspondence.

Should you have questions, please contact the undersigned at 610.774.7552.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on November 15, 2013.

Respectfully,

Rocco R. Sgarro

RRS/kw

Enclosures: As stated.

D102
NRO

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Enclosure 1

Markup of the BBNPP COLA ER

4.1 LAND USE IMPACTS 008273

This section describes the impacts of site preparation and construction to the BBNPP site and the surrounding area. Section 4.1.1 describes impacts to the site and vicinity. Section 4.1.2 describes impacts that could occur along transmission lines. Section 4.1.3 describes impacts to historic and cultural resources at the site.

4.1.1 The Site and Vicinity 008257

The BBNPP site land use is presented in Table 2.2-1 and shown on Figure 2.2-1. The land use categories are consistent with USGS, 1997, land use/cover categories. Land use/cover within the 6 mi (10 km) site vicinity is presented in Table 2.2-2 and shown on Figure 2.2-2. Highways and utility rights-of-way that cross the site and vicinity are shown on Figure 2.2-4 and Figure 2.2-5.

4.1.1.1 The Site 008294

BB-11-0106, BB-10-0272

BBNPP and supporting facilities will be located to the west of and adjacent to SSES Units 1 and 2 within a 2,055 ac (831.6 ha) area defined by the BBNPP Project Boundary. The SSES site use activities will not change as the result of the proposed action to construct and operate BBNPP. The BBNPP site will conform to applicable local, state, and federal land use requirements and restrictions as they pertain to the proposed action. The BBNPP site is not located in a coastal area and, therefore, is not subject to requirements of the Coastal Zone Management Act. Figure 2.2-4 shows the current Salem Township zoning categories for the BBNPP site.

Through regulation, the federal, state, county, and local governments attempt to limit potential environmental impacts to land. The BBNPP site will follow local, state, and federal requirements, including those that pertain to Water Quality Standards (PA, 2007). During construction, site activities are required to be authorized by the agencies and programs listed in Table 1.3-1. There are no recognized Native American Tribal Land use plans that would have jurisdiction over, or within the vicin 669 ac (271 ha). at could impact the site.

BB-09-0370, BB-10-0272, BB-12-0173

Table 4.1-1 provides an estimate of the land areas that will be disturbed during construction of BBNPP and supporting facilities, including temporary features such as laydown areas. Approximately ~~677 ac (274.1 ha)~~ within the BBNPP Project Boundary will be disturbed by site preparation and construction activities, excluding areas within the Susquehanna River. Approximately 357 ac (144.6 ha), including 39 ac (15.6 ha) of previously developed land, would be permanently converted to structures, pavement, or other intensively-maintained exterior grounds, or from forested land to scrub/shrub and natural grasses within transmission line and vehicle, rail and utility bridge corridors. These facilities will include the proposed power block, switchyards, cooling towers, ESWEMS Retention Pond, combined wastewater retention pond, water treatment plant, permanent parking, buildings, yard and laydown areas, roads, railroad, storm water infiltration basins, transmission line rights-of-way, and CWS Makeup Water Intake Structure.

BB-10-0272

Approximately 306 ac (123.8 ha), including 16 ac (6.6 ha) of previously developed land, would be temporarily disturbed, only, to accommodate the batch plant, temporary sedimentation pond, dredge dewatering pond, topsoil disposal areas, installation of water intake and blowdown pipelines, temporary offices, warehouses, parking and laydown areas, and other miscellaneous temporary construction features. Acreage not containing permanent structures would be restored by grading and revegetating to the extent practicable, and certain portions may be designated for wetland or other habitat mitigation.

4.3 ECOLOGICAL IMPACT 008282

4.3.1 Terrestrial Ecosystems 008303

BB-10-0254, BB-13-0044

This section describes the impacts of construction on the terrestrial ecosystem. The potential area of disturbance within the BBNPP Project Boundary is shown in Figure 4.3-1 and represents the construction zone. An estimate of all land areas, including both developed lands and undeveloped terrestrial habitats that will be temporarily or permanently disturbed during construction of BBNPP is provided in Table 4.3-1. A comparison of pre- and post-construction land cover areas within the BBNPP Project Boundary is provided in Figure 4.3-2. Areas to be occupied by [illegible] y construction features and operational facilities and their cur[illegible] etailed in Table 4.1-1. The limit of disturbance boundary ass[illegible] 687 acres (278 ha), of which 669.0 ac (270.7 ha) will actually [illegible] and construction. Furthermore, 457 acres (185 ha) would [illegible] NPP and its supporting facilities and converted to structures, pavement, or other intensively-maintained exterior grounds, or from forested land to scrub/shrub vegetation within transmission line and vehicle, rail and utility bridge corridors. Of the total acreage to be disturbed, approximately 614.4 ac (248.7 ha) of impacts will occur to areas that are not currently developed, and the maximum area of soil to be exposed at any one time will be 633 ac (261 ha). Existing land cover within certain areas of the construction footprint will not be altered by construction activities, including some portions of existing transmission line corridors and local roads.

, and for excess soil disposal and other land uses requiring low intensity maintenance.

357 ac (144.6 ha)

BB-10-0325, BB-10-0254

Approximately ~~369 ac (149.5 ha)~~ of undeveloped land would be permanently converted to structures, pavement, or other intensively-maintained exterior grounds. These facilities will include the proposed power block, switchyards, CWS and ESWS cooling towers, ESWEMS Retention Pond, Combined Waste Water Retention Pond, water treatment plant, permanent parking and laydown areas, ~~excess soil disposal area,~~ roads, railroad, stormwater ponds, soil stockpile and BBNPP Intake Structure.

BB-09-0370, BB-10-0254, BB-13-0044

Approximately 210.9 ac (85.3 ha) of undeveloped land would be temporarily lost, only, to accommodate the concrete batch plant, temporary sedimentation pond, dewatering basin, topsoil stockpiles and temporary offices, warehouses, and parking and laydown areas. This includes temporary wetland and regulated waterbody losses associated with the installation of water intake and discharge pipelines and wetland mitigation activities. Acreage not containing permanent structures would be restored by grading and revegetating to the extent practicable. Wetland and stream mitigation will enhance and restore the temporarily impacted areas following PPL's mitigation plan.

BB-10-0254, BB-12-0118

Approximately 33 ac (13.4 ha) of forested land would be permanently converted to accommodate transmission lines and vehicle, rail and utility pipeline bridge corridors. These areas include both forested upland and forested wetland areas that will require forest clearing for transmission line rights-of-way and bridges. Transmission line corridors and areas under and adjacent to bridges will be permanently maintained as scrub/shrub habitats following PPL vegetative management programs. BBNPP plans to follow the Edison Electric Institute's (EEI) Suggested Practices for Avian Protection on Power Lines (APLIC, 2006) and the Avian Protection Plan Guidelines (USFWS, 2005) developed by EEI in conjunction with USFWS in onsite transmission rights-of-way. These policies are considered protective of all regulated avian species, including migratory birds.

BB-10-0254, BB-13-0044

Construction impacts to non-wetland terrestrial habitats, only, will entail a permanent loss of 344.1 ac (139.3 ha), and temporary disturbance of 208.9 ac (84.5 ha) as shown in Figure 4.3-2

routes for future electric power transmission lines (DOE, 2008a) (DOE, 2008b). BBNPP contributes to two previously identified transmission system upgrades for electrical overloads, initially caused by prior Queue position generation additions (PJM, 2008). The upgrades include rebuilding a 16.1 mile stretch of a single circuit 230 kV transmission line to a double circuit line in Harford County, MD, and a bus reconfiguration with circuit breaker additions at an existing substation near Meshoppen, PA. The transmission line rebuild will make use of the existing right-of-way corridor. The only other known project that may impact natural resources in the region is a new 42 in (107 cm) natural gas pipeline, part of which is located in Luzerne County (FERC, 2006). Transco proposes to expand its existing Leidy gas pipeline to allow additional transport of gas to southern New York. (DOE, 2008) (USFWS, 2008).

4.3.1.5 Regulatory Consultation 008308

Affected federal, state and Regional agencies will be contacted regarding the potential impacts to the terrestrial ecosystem resulting from plant construction. The U. S. Fish and Wildlife Service was consulted for information on known occurrences of federally-listed threatened, endangered, or special status species and critical habitats (USFWS, 2008). For state-listed threatened, endangered, or special status species and critical habitats, the Pennsylvania Game Commission was consulted concerning mammals and birds (PGC, 2008; PGC, 2010); the Pennsylvania Fish and Boat Commission was consulted concerning reptiles and amphibians (PFBC, 2008; PFBC, 2011; PFBC, 2010), and the Pennsylvania Department of Conservation and Natural Resources (PDCNR) was consulted concerning plants, natural communities, terrestrial invertebrates, and geologic features (PDCNR, 2008a; PDCNR, 2010). Wetlands regulatory officials with the USACE and PADEP were consulted regarding wetlands issues. Identification of the important species discussed above was based in part on information provided by consultation with the state and federal agencies listed above.

4.3.1.6 Mitigation Measures 008247

Opportunities for mitigating unavoidable impacts to terrestrial ecosystems involve restoration of natural habitats temporarily disturbed by construction, creation of new habitat types in formerly disturbed areas, as well as enhancement of undisturbed natural habitats. Mitigation plans will be developed in consultation with the applicable state and local resource agencies and will be implemented on the BBNPP site to the extent practicable. The description of mitigation measures is addressed below for upland areas (flora and fauna) and wetland areas.

BB-10-0254 Flora and Fauna:

BB-10-0254, BB-12-0129, BB-13-0044 ~~Emphasis is on a two-prong approach that includes reforestation and the conservation and management of existing habitat. Reforestation includes acreage both within and outside the BBNPP Project Boundary to compensate for approximately 232.0 ac (93.9 ha) of proposed forest clearing which includes less than 10 acres (4.1 hectares) of palustrine forested (PFO) wetland. Conservation and habitat management involves maintaining riparian buffers, existing wetlands, and forest habitats for roosting, nesting, and foraging. The reforestation, and the conservation and habitat management plans will be developed in conjunction with an Indiana Bat Management Plan to compensate for the loss of potential Indiana bat habitat resulting from the tree clearing needed to support facility construction and grading. The management plan will focus on ways to create, improve, and protect on- and off- site Indiana bat habitat such as planting shagbark hickory and other tree species with exfoliating bark or crevices listed by USFWS for Indiana bat habitat restoration.~~

BB-10-254 PPL has identified priority areas for reforestation. The priorities include a corridor along Walker Run corresponding with a wetland mitigation project, crop fields north and east of Lake Took-A-While and west of the North Branch Susquehanna River (NBSR), and parcels on the

east side of the NBSR. ~~The reforestation goal is to provide north/south flyways on both sides of the project boundary, along Walker Run, and on the east bank of the NBSR between the river and the existing railroad tracks as well as to create and enhance Indiana bat habitat. The USFWS will provide input and ensure the reforestation process will meet specific pre-determined criteria to create suitable Indiana bat habitat.~~

BB-10-0254 Surface Water Withdrawal and Consumptive Water Use

BB-10-0254 Physical impacts of cooling system water withdrawal from the NBSR could include alteration of site hydrology at, and in areas downstream of the intake structure. Studies have been completed to determine if BBNPP water withdrawals will have a negative effect on aquatic habitat, vulnerable aquatic species, and water quality, especially during drought or low flow conditions. Mitigation of potential aquatic impacts during low flow periods is a requirement of the Susquehanna River Basin Commission and is being separately addressed as part of the Commission's regulatory review.

BB-10-0254 Groundwater Withdrawal

BB-10-0254, BB-10-0372, BB-12-0159, BB-13-0064 Construction dewatering necessary to support excavation to bedrock for safety-related structures is needed for the power block, cooling towers, and Essential Service Water Emergency Makeup System (ESWEMS) pond. Construction dewatering for the power block and cooling towers is anticipated to be minor and will be accomplished with a series of gravity drains and sump pumps. Dewatering required for the construction of the ESWEMS pond will be more extensive. Mitigation measures such as the installation of a slurry wall will reduce the extent of drawdown and the depth of the groundwater depression, and post-construction decommissioning will allow groundwater to return to conditions approximating those monitored during pre-construction, described in ER Section 4.2.1.5. Collection and appropriate ground surface application of the pumped groundwater will maintain groundwater at or near preexcavation levels and prevent impacts to nearby wetland and stream hydrology.

BB-10-0254, BB-13-0064, BB-13-0067 The BBNPP design meets Section 404(b)(1) guidelines regarding avoidance and/or minimization of wetland impacts. Adjustments to the design were made to decrease the size of the required temporary and permanent facilities and to maximize the amount of undisturbed vegetation. Substantial measures taken to minimize impacts after avoidance planning was completed resulted in the impacts currently proposed, in which direct, permanent impacts have been further reduced from approximately 9.51 acres (3.9 hectares) to less than 2 acres (0.8 hectares), the majority of which is associated with the BBNPP Intake Structure. This process included the following avoidance minimization measures:

Wetlands:

Wetland mitigation in Pennsylvania is driven primarily by conditions established by the USACE and PADEP in permits issued under Section 404 of the Federal Water Pollution Control Act and Chapter 105 Dam Safety and Waterway Management Regulations. Wetland mitigation follows a sequencing process beginning with avoidance of wetland impacts, then minimization of wetland impacts, and lastly compensatory mitigation to offset impacts. The proposed facilities have been sited and the proposed construction has been configured to avoid encroaching into wetlands to the extent possible. Therefore, the wetland impacts detailed in 4.3.1.3 must be considered unavoidable.

bb-10-0254 Several measures will be taken to minimize the unavoidable adverse effects to wetlands. The use of silt fences, temporary and permanent vegetative stabilization, and other soil erosion

Table 4.1-1— Construction Areas Acreage and Operations Area Acreage, Land Use and Zoning

(Page 1 of 2)

Construction Feature	Construction Impact		Current Land Use	Current Zoning[6]
	Acres	Hectares		
BBNPP Power Block	52.6	21.3	A, F, WL	I-3
ESWEMS Retention Pond and Pumphouse	11.0	4.5	A, B, F	I-3
Intake Structure[1]	2.3	0.9	A, F, W, WL	C-1
BBNPP Switchyard	5.2	2.1	A, F	I-3
SSES Switchyard Expansion	5.4	2.2	A, B, F, WL	I-3
CWS Cooling Towers	14.2	5.8	A, F	I-3
Water Treatment	2.7	1.1	F	I-3
Combined Wastewater Retention Pond	2.8	1.2	F	I-3
Susquehanna Switchyard #2	26.3	10.6	F	I-3
Roads	51.4	20.8	A, B, F, U, WL	I-3, C-1, B-3
Railroads	24.8	10.1	A, B, F, U, W	I-3, C-1, B-3
Permanent Buildings	21.5	8.7	A, B, F	I-3, C-1
Permanent Parking	29.1	11.8	A, F	I-3, C-1
Stormwater Infiltration Basins[2]	39.2	15.9	A, B, F, U	I-3
Plant Yard and Permanent Laydown Areas [7]	33.9	13.7	A, F, WL	I-3, C-1
Onsite Transmission Line ROW	35.0	14.2	A, B, F, U, WL	I-3, C-1
Total Acreage of Disturbed Area for Permanent Construction Features[3]	357.4	144.6	--	--
Concrete Batch Plant	11.2	4.5	A, F	I-3
Temporary Laydown Areas[7]	63.4	25.7	A, F, U	I-3, C-1
Temporary Sedimentation Pond	3.9	1.6	A, B, F	I-3
Temporary Parking	22.0	8.9	A, B, F	I-3, C-1
Dredge Dewatering Pond	4.5	1.8	F	C-1
Water Intake and Blowdown Pipeline Corridor	7.1	2.9	A, B, F, U, WL, W	I-3, C-1
Topsoil Disposal Areas	102.7	41.6	A, F	I-3, C-1
Miscellaneous Construction Areas	27.0	10.9	A, B, F, U	I-3, C-1
Onsite Transmission Line ROW	63.9	25.9	A, B, F, U	I-3, C-1
Total Acreage of Disturbed Area for Temporary Construction Features[4,5]	305.9	123.8	--	--
Total Acreage of Disturbed Areas[1]	**663.3**	**268.4**	--	--

Notes:

1. Total does not include areas within the Susquehanna River that will be affected either temporarily (0.8 acres/0.32 hectares) or permanently (0.2 acres/0.08 hectares) by construction activities associated with the installation of the BBNPP Intake Structure and Discharge Pipeline/Diffuser and approximately ~~14.1 ac (5.7 ha)~~ 6 ac (2.4 ha) of temporary impacts associated with wetlands mitigation.
2. Acreage does not include Infiltration Basins located in areas occupied by permanent features.
3. Total includes 38.6 acres (15.6 hectares) of previously developed land, and 33 acres (13.4 hectares) of forested land that will be permanently converted to scrub/shrub w[illegible] transmission line rights of way and vehicle, rail, and utility pipeline corridors.
4. Total includes 16.0 acres (6.6 hectares) of previously developed land.
5. Excludes temporary losses to wetlands associated with wetland mitigation activities, and 0.15 ac of impact to a nonjurisdictional wetland.
6. Current zoning based on Salem township zoning mapping from 2012.
7. Totals do not include areas to be used for laydown that will be used subsequently for other site development features. The total area of all laydown areas to be used throughout BBNPP development is approximately 167.3 acres.

Table 4.3-1— Impacts to Plant Communities and Other Habitats in Acres (Hectares) for Construction of BBNPP bb_er_4.3-1

BB-10-0254

Land Cover Type	Permanent Losses[1]		Temporary Losses[2,3,9]		Permanent Conversions[4]		Impacts to Previously Developed Land[5]		Total Impacts[6,7,8]	
	Acres	Hectares	Acres	Hectares	Acres	Hectares	Acres	Hectares	Acres	Hectares
Upland Forest	148.0	59.9	49.0	19.8	25.2	10.2	n/a	n/a	222.2	89.9
Upland Scrub/Shrub	17.9	7.2	45.5	18.4	0.0	0.0	n/a	n/a	63.4	25.7
Old Field/Former Agricultural	119.2	48.2	49.0	19.8	0.0	0.0	n/a	n/a	168.2	68.1
Agricultural	82.8	33.5	65.4	26.5	0.0	0.0	n/a	n/a	148.2	60.0
Palustrine Forested Wetlands	0.5	0.2	0.0	0.0	9.0	3.6	n/a	n/a	9.5	3.9
Palustrine Scrub/Shrub Wetlands	0.0	0.0	0.0	0.0	0.0	0.0	n/a	n/a	0.0	0.0
Palustrine Emergent Wetlands	0.7	0.3	0.9	0.4	0.0	0.0	n/a	n/a	1.6	0.7
Waterbodies	0.0	0.0	0.0	0.0	0.0	0.0	n/a	n/a	0.0	0.0
Streams	0.1	0.1	1.1	0.5	0.0	0.0	n/a	n/a	1.3	0.5
Total for Plant Communities and Other Habitats	**369.3**	**149.4**	**210.9**	**85.3**	**34.2**	**13.8**	**0.0**	**0.0**	**614.4**	**248.6**
Developed	n/a	n/a	n/a	n/a	n/a	n/a	54.6	22.1	54.6	22.1
Total for all Land Cover Types									**669.0**	**270.7**

Notes:

[1] Areas categorized as permanent losses will be occupied by permanent structures, pavement or intensively-managed exterior grounds once construction is completed.

[2] Temporary impacts from construction activities will occur in areas that include laydown, construction parking, warehouses, the concrete batch plant, and other construction-related facilities. These areas will be graded and revegetated following construction and allowed to revert to a natural state.

[3] Temporary losses to wetlands and other regulated waters are related to construction of electrical ducts, raw water, blowdown, and deicing lines.

[4] Areas categorized as permanent conversions are forested areas (wetland and upland) that will be cleared and permanently converted to scrub/shrub vegetation because of vegetation management practices and include areas within and adjacent to transmission line corridors and bridges.

[5] Includes all land currently classified as "developed" or "quarry" that will be impacted by construction activities.

[6] Includes all areas within the 687 ac (278 ha) limit of disturbance (LOD) that will be impacted by construction activities. Approximately 18 ac (7.3 ha) of land within the LOD will not be impacted as a result of construction activities.

[7] As a result or rounding to the nearest tenth, column totals do not reflect sum of values in all cases.

[8] Wetland impacts regard federally jurisdictional wetlands, and exclude a 0.2 ac (0.1 ha) isolated wetland.

BB-13-0064
BB-13-0064

[9] Temporarily impacts exclude 0.08 ac (0.03 ha) palustrine forested and 0.25 ac (0.10 ha) palustrine emergent wetlands associated with mitigation area construction.

n/a = not applicable

based on publicly available mapping

Table 9.2-1— Impacts Comparison Table i76907

(Page 1 of 7)

Impact Category	Proposed Action (BBNPP)	Coal-Fired Generation	Gas Fired Generation	Combinations (wind and solar with natural gas)
Land Use	The Limit of Disturbance for the construction of the BBNPP and supporting facilities is approximately 687 ac (278 ha). The BBNPP property occupies an area of 935.6 acres (378.6 hectares) within the BBNPP Project Boundary which is ~~2,055~~ 2,055 acres (831.6 hectares). Federal, state, and local requirements will be followed to limit impact. Therefore, the impact will be SMALL during both the construction and operation phases of the proposed project (Sections 4.1.1.1, 5.1.1).	This alternative would require approximately 690 ac (279 ha) for the power block and coal storage and 360 ac (146 ha) for waste management (NRC, 2008). Therefore, land use impact would be MODERATE.	Approximately 160 ac (65 ha) would be required for the facility and 12 ac (4.9 ha) for a pipeline that would be needed to connect to an existing line (PPL Susquehanna, LLC, 2006). Land use impact would be SMALL.	Wind facilities would require about 200 ac (81 ha) for 1,600 MWe (about 0.25 acres for each 2 MWe wind (AE, 2008). Solar facilities require 56,000 acres (22,662 ha) per 1,600 MWe generation for photovoltaic and 22,400 ac (9,065 ha) per 1,600 MWe for solar thermal systems (NRC, 1996). Impacts from wind and solar facilities would be SMALL to LARGE. Approximately 160 ac (65 ha) for a gas-fired generation facility and 12 ac (4.9 ha) for pipelines would be needed. A new gas pipeline would be needed to connect to the existing line (PPL Susquehanna, LLC, 2006). Land use impact for a gas-fired facility would be SMALL.
Air Quality	During construction, limited air emissions from temporary sources such as diesel generators and boilers and fugitive dust and particulate matter would be generated (Section 4.4.1.3). Impacts would be mitigated and impacts would be SMALL. During operations of the SSES Units 1 and 2 cooling towers, no impact would be observed from salt drift. This would be similar for the BBNPP. Operations air emission sources would be managed in accordance with federal, state, and local laws and regulations. Therefore, impacts to air quality during operations are SMALL (Section 5.5.1.3).	Similar construction activities as proposed action for construction, therefore, impacts would be SMALL. Based on the air emissions data provided in Table 9.2-2, during operations, impacts would be MODERATE.	Similar construction activities as proposed action for construction, therefore, impacts would be SMALL. Based on the air emissions data provided in Table 9.2-2, during operations, impacts would be MODERATE.	Similar construction activities as proposed action for construction, therefore, impacts would be SMALL. No air emissions would results from wind or solar facilities during operations. If natural gas is used in this combination, calculated estimates of SO_2 19 tons/yr NO_2 729 tons/yr CO 168 tons/yr PM 37 tons/yr PM-less than 10 microns 26 tons/yr CO_2 equivalent 622,791 tons/yr (USEPA, 1995) during operations impacts would be MODERATE.

referred to throughout this section as the BBNPP site (see Figure 9.3-5). The majority of the site is wooded and undeveloped. As noted in ER Section 2.2.1, a majority of the BBNPP site is zoned as agricultural district, with a much smaller portion zoned as conservation district. Areas to the north and east containing the existing nuclear power plant are zoned heavy industrial.

The Pennsylvania Department of Environmental Protection (PADEP) eMapPA, Online Mapping System shows that the site contains or is located adjacent to a landfill. The database indicates the PP&L Class I Demo Site #3 is a Residual Waste 669 ac (271 ha). The PADEP indicated that the landfill is inactive and in compliance (PADEP, 2009a).

BB-10-0358 The topography of the BBNPP site is generally level with hills being present in the northern portions of the site. The project involves substantial land alteration with a total area of disturbance of approximately ~~687 ac (278 ha).~~ Table 2.2-1 provides pre- and post-construction land use changes and acreages.

BB-10-0358 The BBNPP property can easily accommodate the 420 ac (170 ha) necessary for construction of the proposed new unit. Although nuclear power plant structures would occupy only a portion of the 420 ac (170 ha) area, the construction process could result in impacts on the entire area, such as vegetation removal, grading, and other earth disturbing activities. These areas could also be used for laydown areas, stormwater retention ponds, and borrow areas during or post construction.

Based upon available geographic information system (GIS) data, the nearest dedicated land (federal, state, or tribal) is the Ber Vaughn Park, which is approximately 5.8 mi (9.3 km) from the site (Pennsylvania Department of Conservation and Natural Resources (PA DCNR), 2009; National Atlas of the United States, 2005).

BB-10-0325, BB-12-0129 The BBNPP site is located west of the North Branch Susquehanna River. As discussed in ER Chapters 4 and 5, makeup water for the BBNPP would be drawn from the North Branch Susquehanna River. To obtain the water from the North Branch Susquehanna River, new water intake and discharge pipelines would need to be constructed. The water pipelines would extend from the eastern border of the BBNPP Owner Controlled Area (OCA) for about 1.3 mi (2.1 km) to the North Branch Susquehanna River. As described in ER Section 5.3.1, the BBNPP Intake Structure is located approximately 300 ft (91.4 m) downstream of the existing SSES Units 1 and 2 River Intake Structure, and the discharge structure is located approximately 720 ft (220 m) south of the BBNPP Intake Structure.

Additional information regarding land use impacts associated with the construction and operation of the BBNPP is discussed in ER Sections 4.1.1 and 5.1.1, respectively. Overall land use impacts are anticipated to be SMALL for both construction and operation activities.

9.3.2.1.2 Air Quality 009147

Luzerne County is designated as being in attainment for pollutants as regulated by the USEPA. Any air emissions that would occur as a result of the operation of the BBNPP should be low enough that they would not cause or contribute to a significant change in local or regional air quality levels. (USEPA, 2009a) However, the BBNPP site is located in a four county maintenance area for ozone, and therefore an applicability analysis of emissions of ozone and its precursors is required to determine whether the federal Clean Air Conformity Rule would be triggered by BBNPP construction. There are no Prevention of Significant Deterioration (PSD) Class I areas in Pennsylvania, and there are no Class I areas within 100 mi (161 km) of the site (National Park Service [NPS], 2009).

Enclosure 2

Errata to the Indiana Bat Biological Evaluation and Management Plan for the Bell Bend Nuclear Power Plant Project, Revision 1

Although no Indiana bats were collected during the mist net survey, 29 big brown bats, four eastern red bats (*Lasiurus borealis*), two tri-colored bats (*Perimyotis subflavus*), and one northern myotis, were captured, measured and released. The big brown and eastern red specimens included reproductively active females and adult or juvenile males; the tri-colored specimens were pregnant females; and the northern myotis specimen was a lactating female. Contrary to the 2008 mist net results, which suggested that northern myotis use of the site may be limited to roosting only (AREVA, 2010b), these findings suggest that all four bat species, including northern myotis, use the site for both roosting and maternity colonies (Normandeau, 2013).

This final BEMP, Rev 1 addresses the above comments and updated field survey results.

3. PROJECT DESCRIPTION

The BBNPP Project Boundary encompasses 2,055 acres (831.6 hectares [ha]) of land in an area of open deciduous woodlands interspersed with grasslands, previously cultivated fields, and orchards that support a variety of habitats as well as the facilities for the existing SSES Units 1 and 2 (Figure 1). The limit of disturbance (LOD) boundary associated with BBNPP encompasses 687 acres, of which ~~677 acres (274 ha)~~ 669 acres (271 ha) will actually be disturbed by site preparation and construction. Furthermore, 457 acres (185 ha) would be permanently dedicated to BBNPP and its supporting facilities and converted to structures, pavement, or other intensively-maintained exterior grounds, or from forested land to scrub/shrub vegetation within transmission line and vehicle, rail and utility bridge corridors (UniStar, 2010). Impacts to natural resources are expected to originate primarily from the site preparation activities and construction phases of the Project, but will also result from the operation and maintenance of the new unit.

Construction, operation and maintenance activities that could potentially affect the Indiana bat are described below.

3.1 Construction

The area of construction disturbance within the BBNPP Project Boundary is illustrated in Figure 2. Of the total acreage to be disturbed, approximately ~~623 acres (252 ha)~~ 614.4 acres (248.7 ha) of impacts would occur to areas that are not currently developed. Clearing and grubbing would result in temporary and permanent conversions of various habitat types including forest, agricultural, wetland, and scrub/shrub habitats.

Approximately ~~369.4~~ 369.3 acres (149.5 ha) of undeveloped land would be permanently converted to structures, pavement, or other intensively-maintained exterior grounds. These facilities will include the proposed power block, switchyards, cooling towers, Essential Service Water Emergency Makeup System (ESWEMS) retention pond, wastewater retention pond, water treatment building, permanent parking and laydown areas, access roads, rail spur, and BBNPP intake structure.

0.78 acres (0.32 ha) 210.9 acres (85.3 ha)

Approximately ~~220.3 acres (89.2 ha)~~ of undeveloped land would only be temporarily converted - to accommodate the concrete batch plant, temporary sedimentation pond, dredge dewatering basin, topsoil stockpiles and temporary offices, warehouses, parking and laydown areas. Temporary wetland losses associated with the installation of water intake and discharge pipelines will be ~~0.71 acres (0.29 ha)~~. Acreage not containing permanent structures would be restored by grading and establishing an appropriate stable vegetative cover to the extent practicable and certain portions may be designated for wetland or other habitat mitigation.

Approximately 33.0 acres (13.4 ha) would be permanently converted to accommodate transmission lines and vehicle, rail and utility pipeline bridge corridors. These areas include both forested upland and forested wetland areas that will require forest clearing for transmission line rights-of-way and bridges. Transmission line corridors and areas under and adjacent to bridges will be permanently maintained as scrub/shrub habitats in accordance with PPL vegetation management programs.

Wetlands comprise approximately 1.25 acres (0.51 ha) of permanently lost terrestrial habitat. Additionally, 742 linear feet (226 m) of stream channel outside of the wetlands areas will be permanently filled as further discussed in Section 3.1.2.

Construction of the surface water CWS Makeup Water Intake Structure and blowdown diffuser structure will involve very minor impacts of 0.61 acres (0.25 ha) and 0.46 acres (0.19 ha), respectively, within the Susquehanna River. The remaining disturbed area of approximately 0.1 acres (0.04 ha) will be only temporarily disturbed to accommodate cofferdams, necessary excavation work and other construction activities within the river. 9.51 acres (3.85 ha)

Total temporary and permanent losses of ~~forested~~ cover will include 222.2 acres (89.9 ha) of upland deciduous forest and ~~11.3 acres (4.6 ha)~~ of palustrine forested wetland. In addition to the cleared forested areas, between 2.8 to 82.0 acres (1.1 to 33.2 ha) of forest will be fragmented and isolated based on input from the USFWS and depending on criteria applied to determine fragmentation as discussed below, and therefore effectively lost temporarily or permanently as viable Indiana bat habitat.

With respect to potential forest fragmentation and isolation impacts, most research has shown that Indiana bats predominantly forage, roost and travel within wooded habitats and are reluctant to cross large open areas (USFWS, 2007). Murray and Kurta (2004) found that Indiana bats consistently use tree-lined corridors and have been observed to increase commuting distances by 55 percent rather than cross large agricultural fields. Similarly, a study of radio-tagged bats in Missouri found that heavily forested areas, riparian corridors and forest edges were the primary areas of activity with no bats recorded in the open areas interspersed throughout the research area (Ecology and Environment, Inc., 2009).

The majority of both the upland and wetland forest cover that would be cleared is composed of well-developed overstory and understory strata. Other vegetation losses from both permanent and temporary disturbances will include approximately 63.4 acres (25.7 ha) of upland scrub/shrub vegetation; 168.2 acres (68.1 ha) of old field vegetation and former agricultural land including an abandoned orchard, 148.2 acres (60.0 ha) of agricultural land, and ~~7.2 acres (2.9 ha)~~ 1.6 acres (0.6 ha) of palustrine emergent vegetation.

3.1.1 Transmission System Modifications

A new switchyard (Susquehanna 500 kV Yard 2) will need to be constructed, as well as the additional transmission line work within the project boundary, to connect the BBNPP 500 kV switchyard to the new Susquehanna 500 kV Yard 2. Design enhancements have been utilized to minimize the footprints of both switchyards.

Although certain sections of two off-site transmission lines will need to be reconductored to avoid network overloads during peak usage periods, no new off-site transmission corridors or other off-site land use would be required to connect the new reactor unit to the existing electrical grid (UniStar, 2010). Numerous breaker upgrades and associated modifications will be required at existing off-site substations and switchyards, but all of the modifications would be implemented within the existing substations and switchyards.

The 230kV transmission line currently passing through the BBNPP site will be relocated north of Beach Grove Road to provide a buffer from the CWS cooling towers and to provide additional areas for location of plant-related structures. This disturbance is estimated to be about 19 acres of upland tree removal and is part of the approximately 33.0 acres (13.4 ha) that would be permanently converted to accommodate transmission lines and vehicle, rail and utility pipeline, and bridge corridors within the project boundary.

3.1.2 Wetland Mitigation Activities

A description of potential wetland mitigation activities that may be undertaken at the BBNPP site is presented below. Mitigation measures for the Indiana bat are discussed in Section 7.

Wetland mitigation in Pennsylvania is regulated by the USACE under Section 404 of the Clean Water Act, and by the Pennsylvania Department of Environmental Protection (PADEP) under Chapter 105 Dam Safety and Waterway Management Regulations. Wetland mitigation follows a sequencing process requiring avoidance of wetland impacts, minimization of unavoidable wetland impacts, and compensatory mitigation to offset impacts not able to be avoided or minimized. The proposed facilities have been sited and the proposed construction has been configured to avoid encroaching into wetlands to the extent possible.

Several measures are proposed to minimize unavoidable adverse effects to wetlands. The use of silt fences, temporary and permanent vegetative stabilization, and other soil erosion and sediment control practices will reduce the risk of sediment runoff into intact wetlands adjacent to disturbed