

BellBendEnveRAIPEm Resource

From: Quinn-Willingham, Laura
Sent: Monday, August 13, 2012 4:46 PM
To: Sgarro, Rocco R
Subject: DRAFT RAIs for the Bell Bend Environmental Review
Attachments: Final Draft RAIs for BB COL Environmental Review.pdf

Rocky,

Attached are the draft RAIs for the Bell Bend COL environmental review. The staff will issue these as final RAIs on 8/27/2012 for anything that is not resolved between now and that date. The staff is available for clarification calls. The NRC terrestrial ecologist is only in Thursday and Friday of this week. The NRC hydrologist is out this week for vacation and next week he has limited availability due to a work trip, we should be able to work something out if needed. The NRC socio-economist, terrestrial ecologist, and some of the PNNL staff are also on the same work trip next week, so we should aim to clarify as much as we can this week. Again, the staff can make itself available, but it will be more difficult next week so please be patient if calls are needed next week. If you have any questions, please let me know.

Thanks,

Laura

Hearing Identifier: BellBend_COL_Env_RAI
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**NRC Requests for Additional Information (RAIs) Regarding the Revised Site Layout
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Accidents

Info Need Number	ESRP and EIS Section	Supporting Regulations	Question Summary (RAI)	Full Text (Supporting Information)
ACC-5	ESRP Sections 7.2 and 7.3 EIS Section 5.11.3 Technical Appendix on SAMA	10 CFR 51.45 and 51.50(c)	Provide in the Bell Bend COL environmental report (ER) an updated site-specific SAMDA averted cost using replacement power costs based on the expected capacity factor for the U.S. EPR reactor design.	ESRP Section 7.3 directs the staff to evaluate and independently confirm an applicant's severe accident mitigation design alternatives (SAMDA) analysis presented in the ER Section 7.3 that applies design and site specific information based on the guidance provided in NUREG/BR-0184. In response to SAMDA questions at the site audit, PPL provided in BNP-2012-167 (dated July 12, 2012 ML 12214A589) the results of a sensitivity analysis to show there would not be any cost-benefit SAMDA even by using a 95% plant capacity factor, rather than 60% (the capacity factor that is the basis in NUREG/BR-0184). However, PPL concludes in BNP-2012-167 that "[n]o change is required to the BBNPP COLA as a result of this response." Therefore, the staff is requesting that PPL update the BBNPP ER with the results that are summarized in BNP-2012-167.
ACC-14	ESRP Sections	10 CFR 50.34, 51.45, 51.50(c), and	For the population distribution applied in ER Section 7.2, Severe Accidents, justify the application of 2000 U.S. Census data	ESRP Section 7.2 directs the staff to evaluate and independently confirm severe accident risks and analyses presented in the ER. ER

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	7.1, 7.2, 7.3 EIS Section 5.11.2	52.79	rather than the available 2010 U.S. Census data for determining the 2050 population distribution within 50-mi of the BBNPP site.	Section 7.2 presents severe accident population dose risks for the U.S. EPR reactor design being considered for the Bell Bend site based on “projected” 2010 Population Distribution. However, actual 2010 U.S. Census data is available for use for the 50-mi population distribution for input in the severe accident analysis. The staff request PPL document the basis for continuing to rely on 2000 U.S. Census data rather than updating the population distribution by applying 2010 U.S. Census data.

Alternatives

Info Need Number	ESRP and EIS Section	Supporting Regulations	Question Summary (RAI)	Full Text (supporting information)
ALT-7	ESRP Sections 9.3.1/9.3 EIS Section 9.3.1	10 CFR 51.45	Resolve the discrepancy between the statements in ER Section 9.3.1.2 that the Martins Creek site is the most favorable non-Susquehanna River basin alternative site even though in ER Table 9.3-10 the Wallenpaupack site in the Delaware River basin had a higher	ESRP Section 9.3 directs the staff’s analysis and evaluation of alternatives to the applicant’s proposed site for the construction and operation of a nuclear power plant. The scope of the review should include an analysis and evaluation of the region of interest, candidate sites and a reasonable number of

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			screening score.	proposed alternative sites identified by the applicant, and the methodology used by the applicant to identify these sites. ER Revision 3, page 9-60, claims Martins Creek as the most favorable non-Susquehanna River basin site, but ER Table 9.3-10 has a higher score for the Wallenpupack site, which is also outside of the Susquehanna River basin.

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<p>ALT-8</p>	<p>ESRP 4.1.1, 4.1.2 9.3.1 and 9.3</p> <p>EIS Section 9.3.1</p>	<p>10 CFR 51.45</p>	<p>The May 10, 2012, letter from the New Jersey Highlands Water Protection and Planning Council to NRC (ML12135A234) stated that siting a nuclear power plant at the Martin’s Creek site would be inconsistent with the Highlands Regional Master Plan. Considering this, address the viability of the Martins Creek site as an alternative site and the likelihood that PPL Bell Bend could obtain permits from the State of New Jersey for the construction and operation of a nuclear power plant, preferably through documentation from the New Jersey Highlands Water Protection and Planning Council. In addition, provide information regarding the presence of any prime or unique farmland soils on the Martin’s Creek site, including a map showing location, total acreage, and acreage permanently removed from agricultural use following construction.</p>	<p>ESRP Section 9.3 directs the staff’s analysis and evaluation of alternatives to the applicant’s proposed site for the construction and operation of a nuclear power plant and states that the reviewer should determine whether the reconnaissance level information used throughout the site-selection process was complete enough and of sufficient depth commensurate with the level of screening to support the decisions that were made and that the following information (among others) should be obtained either through the ER or consultation: siting constraints and limitations (e.g., rules, regulations, and laws). The ER and Alternative Site Evaluation Report (ASER) (ML11580443) fail to acknowledge the restriction on development imposed by the New Jersey Highlands Water Protection and Planning Act and the effect on the viability of the Martins Creek site, which has been challenged by a May 10, 2012 letter from the Highlands Water Protection and Planning Council to the NRC. It was discussed at the May 2012 site audit that PPL will lead the effort needed to a) review the Highlands Regional Master Plan and b) consult with the NJ Planning Council and determine applicability to site and T-line viability. ESRP Sections 2.2, 4.1.1 and 4.1.2 directs the staff to identify and consider</p>
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				<p>prime and unique farmlands and the relative value of unique or prime farmland if it is found on the site. Provide information (the number of acres of prime or unique farmland, a map with the locations of parcels considered to be prime or unique farmland on the Martins Creek alternative site and the route of the associated transmission lines, and a number of acres of prime or unique farmland that will be temporarily or permanently impacted from building an EPR at this location) to help resolve discrepancies among the New Jersey Highlands Water Protection and Planning Council letter, ER, and ASER on whether or not the Martin's Creek site contains prime or unique farmland as defined by Farmland Protection Policy Act (FPPA) and/or the State of New Jersey.</p>
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Aquatic Ecology

Info Need Number	ESRP and EIS Section	Supporting Regulations	Question Summary (RAI)	Full Text (Supporting Information)
AE-7	ESRP 2.4.2 EIS Section 2.4.2	10 CFR 51.45	Discuss the locations, species, and approximate quantity or abundance of submerged vegetation in the Susquehanna River at Bell Bend.	ESRP Section 2.4.2 directs the staff's description of the aquatic environment and biota at and in the vicinity of the site and other areas likely to be affected by the construction, maintenance, or operation of the proposed project. The ER does not discuss submerged vegetation in the Susquehanna

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AE-31 (NEW)	ESRP 2.4.2 ESRP 5.3.2 EIS Section 2.4.2, 5.3.2	10 CFR 51.45	Discuss the potential occurrence of non-native mollusks, such as Asian clams and zebra mussels in onsite water storage features, such as the Essential Service Water Emergency Makeup Supply (ESWEMS) Retention Pond, at Bell Bend. Discuss methods of water treatment to prevent occurrence and colonization of non-native mollusks.	<p>River. Such vegetation would provide important habitat for fish, such as smallmouth bass. PPL's Joint Permit Application to the U.S. Army Corps of Engineers, Appendix B-07, contains Figure 5-4 a photo of plants in the river. The applicant noted that consultants will survey aquatic vegetation at water-quality monitoring sites during smallmouth bass surveys later this year.</p> <p>ESRP Sections 2.4.2 and 5.3.2.2 require information about nonnative, nuisance, or invasive species. During the site audit, the applicant indicated that many operational procedures for Bell Bend would be adapted from procedures currently used at SSES. The response to Information Need AE-9 in BNP-2012-131 (dated May 31, 2012 (ML121580599)) states that zebra mussels found in the pump forebays of the SSES spray pond apparently were not affected by the molluscicide applications in the pond because of poor circulation in the pond. This suggests that the program to keep mussels from colonizing the pond was not entirely successful. It is necessary to know how the SSES procedure for applying molluscicide would be modified or what additional steps would be taken to reduce the likelihood that this would happen at Bell Bend.</p>

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Cultural Resources

Info Need Number	ESRP and EIS section	Supporting Regulations	Question Summary (RAI)	Full Text (supporting information)
CR-7	ESRP 2.5.3, 4.1.3, 5.1.3 EIS Section 2.7	Section 106 of the National Historic Preservation Act 36 CFR 800 10 CFR 51.45	Provide any new communications with the Pennsylvania State Historic Preservation Office concerning sites LU 301 and LU 307.	ESRP Section 2.5.3, 4.1.3 and 5.1.3 direct the staff's identification and description of historic, archaeological, and traditional cultural resources; the results of the surveys conducted; the location and significance of any properties that are listed in or eligible for inclusion in the <i>National Register of Historic Places (National Register)</i> as a historic place; and any additional information pertaining to the identification and description of historic properties that could be impacted by construction or operation of the proposed project and the assessment of potential impacts of proposed project construction and operation activities on historic properties in the site and vicinity, along transmission corridors and offsite areas. These sections describe the type of data and information that should be obtained and include (among others), the comments of any organizations contacted by the applicant to locate and assess archaeological and historic resources located on or near the proposed station site.

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General and Site and Technical Overview

Info Need Number	ESRP and EIS Section	Supporting Regulations	Question Summary (RAI)	Full Text (supporting information)
GEN-1	ESRP 3.1 EIS Section 4.1		Provide Figure 4.1-1, in accordance with the list generated by Laura Quinn-Willingham (NRC), Bruce McDowell (PNNL), Nancy Kohn (PNNL), and Dimitri Lutchenkov (AREVA) at the audit.	<p>ESRP Section 3.1 directs the staff's description of the planning, layout, and appearance of the proposed plant and existing station structures and any related offsite structures and should consider (1) the layout, landscaping, and architectural features of the proposed project and any other existing station structures and (2) the aesthetic concepts and visual concerns that have been considered in the planning and design of the proposed project.</p> <p>Figure 4.1-1 was not on the disk submitted as Enclosure 3 to BNP-2012-159 on June 28, 2012 (ML12193A153). Provide Figure 4.1-1, in accordance with the list generated by Laura Quinn-Willingham (NRC), Bruce McDowell (PNNL), Nancy Kohn (PNNL), and Dimitri Lutchenkov (AREVA) at the audit.</p>
GEN-2	ESRP 3.1, 2.2, 2.3.1 EIS Section Chapter 2		<p>Provide the GIS layers/shapefiles for</p> <ol style="list-style-type: none"> 1. LOCAL_RIVERS_061812 2. LandUse_without_NAI_wetlands_2011Boundary (from Figure 2.2-1). <p>The NRC also requests GIS data for the</p>	<p>ESRP Section 3.1 directs the staff's description of the planning, layout, and appearance of the proposed plant and existing station structures and any related offsite structures and should consider (1) the layout, landscaping, and architectural features of the proposed project and any other existing station structures and (2) the aesthetic</p>

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			<p>alternative site centers.</p>	<p>concepts and visual concerns that have been considered in the planning and design of the proposed project. ESRP Sections 2.2 and 2.3.1 directs the staff's description of the surface-water bodies and groundwater aquifers that could affect the plant-water supply and effluent disposal or that could be affected by plant construction or operation of the proposed project and the description of the land area near the proposed facility.</p> <p>In a letter dated June 28, 2012 (BNP-2012-159 - ML12193A153), PPL submitted GIS data associated with the ER figures in the list as agreed upon at the site audit. Please check and resubmit the following shapefiles, which were received but were either empty or corrupt and could not be read by ArcMap: LOCAL_RIVERS_061812 LandUse_without_NAI_wetlands_2011Boundary (from Figure 2.2-1)</p> <p>The NRC also requests GIS data for the alternative site centers.</p>

Hydrology

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Info Need Number	ESRP and EIS Section	Supporting Regulations	Question Summary (RAI)	Full Text (supporting information)
HY-1	ESRP 4.2.1, 4.3.2 EIS Section 4.2		Provide details of the placement and eventual disposition of the slurry wall that will be used for construction of the Essential Service Water Emergency Makeup System (ESWEMS) pond. Describe how the slurry wall will be perforated or otherwise made ineffective after construction of the pond, and how groundwater flow to streams, sloughs and wetlands would be affected by any remnants of the slurry wall.	ESRP Section 4.2.1 directs the staff's identification, analysis, and description of hydrologic alterations resulting from proposed project construction and construction activities. ESRP Section 4.3.2 directs the staff's description, quantification, and assessment of the impacts of construction of the proposed facilities on the aquatic ecosystem. In ER Sections 2.3.2.2.11, 4.2.1.5 and 4.3.1.6, the applicant states that a slurry wall would be used during construction of the ESWEMS pond to reduce dewatering needs and to protect nearby streams and wetlands. The applicant indicated during the May 2012 environmental site audit that the slurry wall would be perforated to allow a normal groundwater flow to be re-established. However, the ER makes no mention of this perforation, or how the remnants of the slurry wall might still affect the groundwater.
HY-5 (NEW)	ESRP 2.3.2.3.3.1, 4.2.1 EIS Section 3.3, 4.2		Provide clarification of water sources to be used during the construction of Bell Bend. Section 4.2.1.3 of the ER states "the potential sources of water for construction include local municipal water, Susquehanna River water, and offsite water trucked to the construction	ESRP 2.3.2 directs the staff to evaluate surface-water and groundwater uses that could be affected by the construction of the proposed project, as a basis for assessing the impacts of proposed project construction on consumptive and nonconsumptive water uses.

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			<p>site."</p> <p>1) Would "local municipal water" for construction come from the Berwick District of Pennsylvania American Water Company? If not, identify the source(s).</p> <p>2) What would be source of "offsite water trucked to site"? How long is this expected to be needed?</p> <p>3) If Susquehanna River water will be used for construction, describe how/where it would be obtained, what it would be used for, how much and for what duration?</p>	

Land Use

Info Need Number	ESRP and EIS Section	Supporting Regulations	Question Summary	Full Text (supporting information)
<p>LU-17 (NEW)</p>	<p>ESRP 9.3 EIS Section 9.3</p>		<p>Describe the consistency of constructing and operating new nuclear facilities on the Martin's Creek site, including the water pipeline and offsite transmission-line corridors, with provisions of the New Jersey Highlands Water Protection and Planning Council (Highlands Council) Regional Master</p>	<p>ESRP Section 9.3 directs the staff's analysis and evaluation of alternatives to the applicant's proposed site for the construction and operation of a nuclear power plant. The scope of the review should ensure the environmental descriptions for the alternative sites are adequate to assess environmental impacts of plant construction and operation.</p>

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			<p>Plan that concern terrestrial ecological resources. Such provisions include development of forest resource and conservation areas; and conservation environmentally constrained subzones, protection zones, Highlands open waters protection buffers, moderate priority and steep slope riparian areas (e.g., riparian areas along the Delaware River and Buckhorn Creek [see Regional Master Plan Consistency Report accompanying May 10, 2012 letter from the Highlands Council to the NRC ML12135A234]; and wildlife corridors and critical wildlife habitat (Highlands Council Interactive Map at http://map.njhighlands.us/njhighlands/hgis/#).</p>	<p>The Martin's Creek alternative site and the associated water pipeline and transmission-line corridors lie within the Planning Area of the Highlands Region of New Jersey – lands subject to the planning and management of the New Jersey Highlands Water Protection and Planning Council (Highlands Council). New nuclear facilities at the Martin's Creek site would need to be consistent with provisions of the Highlands Regional Master Plan (RMP) regarding terrestrial ecological resources (among others) in order to permit the construction of such facilities (see May 10, 2012 letter from the Highlands Council to the NRC ML12135A234).</p>

Meteorology and Air Quality

Info Need Number	ESRP and EIS Section	Supporting Regulations	Question Summary	Full Text (supporting information)
MET-2	ESRP 2.7.6.2 EIS Section		<p>Resolve the apparent disagreement in the distance to the Exclusion Area Boundary (EAB) and the associated 50th percentile X/Q presented in Chapter</p>	<p>To be consistent with ESRP 2.7, the NRC staff has a confirmatory role in evaluating relative concentration (X/Q) for estimating dose in design basis accidents (DBAs). A partial</p>

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	2.9		2.7.6.2 and Chapter 7.1 of the ER (Revision 3).	response was submitted on June 7, 2012 (BNP-2012-139, MET-02 ML12166A271), which included the AEOLUS3 input/output files used to estimate the BBNPP site-specific 50 th percentile X/Q. However, the response did not clarify the apparent disagreement in the distance to the EAB and the associated 50 th percentile X/Q presented in Chapter 2.7.6.2 and Chapter 7.1 of the ER.
MET-4	ESRP 6.4.1 EIS Section 2.9		Table 6.4-3 of the ER (Revision 3) lists the distance and height to potential nearby obstructions for the proposed BBNPP meteorological tower location. Based on the data in Table 6.4-3, treelines to the north and south are within five obstruction heights of the BBNPP meteorological tower and therefore they have the potential to affect tower measurements. A July 12, 2012 submittal (BNP-2012-167, MET-04) discusses possible nearby tower obstructions and also provides estimates of distances and heights to the nearby treelines. The NRC staff notes, however, that the distances and heights provided in the ER and the July 12, 2012 submittal are inconsistent. Which estimates are correct? Provide justification as to why treeline impacts	ESRP 2.7 and 6.4 states that for “no discernible flow on measurements, towers should be at least ten obstruction heights away from major obstructions. For towers located more than five obstruction heights away from major obstructions, the influence should be minimal. Tower locations within five obstruction heights should be analyzed on a case-by-case basis.” Based on Table 6.4-3 of the ER, the proposed BBNPP meteorological tower is within five obstruction heights of treelines to the north and south of the tower location. A July 12, 2012 submittal (BNP-2012-167, MET-04) also provides estimates of distances and heights to the nearby treelines, but the values are inconsistent with the ER.

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MET-5 (NEW)	ESRP 2.7 EIS Section 2.9		on the BBNPP meteorological measurements are expected to be minimal. RAI Reply 101 and 106 in BNP-2012-172 dated July 12, 2012 (ML12207A095) indicates that there will be revisions in Section 2.7 of the ER to reflect planned changes to the long-term relative concentration (X/Q) and deposition (D/Q) values for normal radioactive effluent releases to the atmosphere. Provide the revisions to ER Section 2.7 as well as the model input/output files used to estimate the long-term X/Q and D/Q values.	To be consistent with ESRP 2.7, the NRC staff has a confirmatory role in evaluating X/Q and D/Q estimates for routine releases of radioactive effluent to the atmosphere. NRC staff will perform independent calculations for the BBNPP site and compare the results of its calculations to the applicant's results reported in the ER. RAI Reply 101 and 106 in BNP-2012-172 indicates that there will be revisions to the values in the ER. Therefore, document these revisions as well as provide all model input/output files so confirmatory calculations can be performed.

Radiation Health, Decommissioning, and Uranium Fuel Cycle

Info Need Number	ESRP and EIS Section	Supporting Regulations	Question Summary (RAI)	Full Text (supporting information)
RHH-1	ESRP 4.5 EIS Section 4.9	10 CFR 20.1301 and 1302 10 CFR Part 50 Appendix	Provide a copy of the PPL evaluation of the dose to construction workers that includes SSES effluent data from 2007 through 2011 to ensure compliance with the dose limits in 10CFR 20.1301 and	ESRP Section 4.5 directs the staff's analysis and assessment of potential radiological impacts on the proposed project construction work force and the scope should include an analysis and evaluation of the radiological

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		I	1302.	impact of operating nuclear power reactors or other nuclear installations associated with the nuclear fuel cycle process adjacent to the proposed plant site. The current calculations in ER Section 4.5 are based on SSES effluent data through 2006. More recent SSES effluent data, waste activity, and spent fuel inventories are available. This will reflect the impact from the 13% SSES power uprate for units 1 & 2 beginning in 2008.
RHH-4	ESRP 5.4.1 EIS Section 5.9	10 CFR 20.1301(d) 10 CFR Part 50, Appendix I	Provide the results of the evaluation of the onsite out-of-plant exposure rates based on data from the 2008-2011 SSES Radioactive Effluent Release Report.	ESRP Section 5.4.1 directs the staff's identification and description of the environmental pathways by which radiation and radioactive effluents can be transmitted from the proposed plant to living organisms. Dose estimates should be based on more recent SSES effluent data, waste activity, and spent fuel inventories. This will reflect the impact of the 13% SSES power uprate for Units 1 and 2 that began in 2008.
RHH – 8 (NEW)	ESRP 5.4.3 EIS Section 5.9	10 CFR 20.1301 10 CFR Part 50, Appendix I	Provide copies of the following calculation packages for review: 51-9083400-002 or latest version: Technical Input to COLA ER Section 5.4 "Radiological Impacts for Normal Operations for BBNPP" 126-9048674-005 or latest version:	ESRP Section 5.4.3 directs the staff's preparation and presentation of a summary analysis and evaluation of the radiological impacts on individuals due to radioactive effluents released from the plant in the course of normal operation. These three PPL calculation packages are not currently in the Reading Room. They contain information

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RHH-9 (NEW)	ESRP 5.4.1 EIS Section 5.9	10 CFR 20.1301 10 CFR Part 50, Appendix I	USEPR Annual Occupational Dose Estimation 126-9070954-002 or latest version: Agricultural Production and Radiological Exposure Pathway Data for BBNPP Incorporate the revisions to Section 5.4.3.1 in the ER per the commitment in BNP-2012-175 for HY-02 (ML12214A590).	pertinent to determining compliance with requirements in 10 CFR 50 and 40 CFR 190 related to offsite doses, and for occupational dose estimates per NUREG-1555 ESRP Section 5.4.3. ESRP Section 5.4.1 directs the staff's identification and description of the environmental pathways by which radiation and radioactive effluents can be transmitted from the proposed plant to living organisms. The marked-up version of ER Section 5.4.3.1 in the BNP-2012-175 package states that the "annual average dilution" was used for the population dose calculations and not the summer mean flow dilution as stated in the HY-02B response. The description in the HY-02F response that the land within a half-mile of the river for 50 miles downstream of BBNPP was assumed to be irrigated was not found in the marked-up version of Section 5.4.3.1. The decision was made to make this a new RHH RAI and not keep it as HY-02.
RHH-10 (NEW)	ESRP 5.4.1 EIS Sections 2.9, 3.4.3.2, 5.9	10 CFR 20.1301(d) 10 CFR Part 50, Appendix I	Provide results from the revised offsite dose calculations from gaseous and liquid effluents and direct radiation sources per the commitments in BNP-2012-172 dated July 12, 2012 (ML12207A095).	ESRP Section 5.4.1 directs the staff's identification and description of the environmental pathways by which radiation and radioactive effluents can be transmitted from the proposed plant to living organisms. The PPL responses to RAI 101 and 106 in

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RHH-11 (NEW)	ESRP 4.5 EIS Section 4.9	10 CFR 20.1301 and 1302 10 CFR Part 50 Appendix I	Provide the revised analysis, data, and assumptions used to estimate the dose to construction workers assuming a full ISFSI in response to eRAI 6473 (ML12215A070).	BNP-2012-172 committed to revising ER Sections 2.7, 3.5, and 5.4. This reflects the planned changes to offsite dose receptor locations, atmospheric dispersion factors, radionuclide source term, population projections and possible changes to liquid radiological waste system parameters. ESRP Section 4.5 directs the staff's analysis and assessment of potential radiological impacts on the proposed project construction work force and the scope should include an analysis and evaluation of the radiological impact of operating nuclear power reactors or other nuclear installations associated with the nuclear fuel cycle process adjacent to the proposed plant site. NRC has requested for PPL to provide updated or bounding dose estimates for construction workers per eRAI 6473 (ML12215A070). PPL indicated verbally in a phone call that they intend to assume a full ISFSI for the updated calculations.

Socioeconomics, Environmental Justice, Cost Benefit

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S/EJ-3	ESRP 2.5.2 EIS Section 2.5		Provide an overview of the State, County, and township plans referenced in the information needs LU 5 and LU 15 (ML12114A212) with additional discussion of their relationship to Bell Bend.	ESRP Section 2.5.2 directs the staff's identification and description of community characteristics in the region of the site, including the site vicinity and other areas likely to be affected by the construction, maintenance, or operation of the proposed plant and related facilities and should consider data and information such as but not limited to local plans concerning land use and zoning that are relevant to population growth, housing, and changes in land-use patterns; regional and local highway systems; availability and type of public transportation; location of hospitals, number of medical doctors, and specialized health facilities, including present and projected capacity; present and projected water and sewer/sewage disposal facilities; present and projected police and fire capabilities; public and private recreational facilities; etc.
S/EJ-16 (NEW)	ESRP 4.4.2 EIS Section 4.4		Explain how the proposed Confers Lane closure affects the local zoning/permitting process for the BBNPP. What are the expected traffic (including the region's emergency management plan and emergency evacuation routes) impacts from such a	ESRP Section 4.4.2 directs the staff's analysis and evaluation of the social and economic impacts of construction on the surrounding region and individual communities that could be affected by the proposed project and should consider the social and economic impacts resulting from construction and from the activities and demands of the construction

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S/EJ-17 (NEW)	ESRP 4.4.2 EIS Section 4.4		closure? Does the fact that Confers Lane is a public road create any additional road-use permitting problems?	labor force including but not limited to transportation. Salem Township staff expressed concern that the closure of Confers Lane would affect the township's evacuation plan because it is part of the emergency evacuation route. Salem Township representatives indicated that PPL had submitted applications for a subdivision and lot consolidation permit and a conditional use permit. Township staff also noted that the evacuation of Confers Lane has been removed from the subdivision and lot consolidation permit application due to its implications for the township's evacuation plan and would be addressed during the conditional use permit application review process.
			Provide an assessment of the BBNPP traffic impacts during the construction period on secondary routes, including Salem Township roads that might be adversely affected by traffic diversion off Route 11 during congested periods. Indicate why these secondary roads were largely excluded from the traffic impact study (TIS) (ML120380216) and indicate whether the TIS will be updated to reflect recent area developments (e.g., the addition of Western International Gas and Cylinders and the	ESRP Section 4.4.2 directs the staff's analysis and evaluation of the social and economic impacts of construction on the surrounding region and individual communities that could be affected by the proposed project and should consider the social and economic impacts resulting from construction and from the activities and demands of the construction labor force including but not limited to transportation. Salem Township staff expressed concern regarding the traffic impact study (TIS) (ML120380216) performed for the BBNPP. More specifically, township staff

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			expansion of Tech Packaging) and the aforementioned impacts on secondary routes. If the TIS is being updated, please indicate when the revised draft is scheduled for completion. If there is no plan to update the TIS, indicate why an update is not necessary. Does limiting traffic to only Route 11 and other primary roads meet the PennDOT TIS requirements for road-use permitting purposes?	argued that the TIS was outdated and did not adequately address the impact of traffic diversion during congested periods onto secondary routes located within the township. Township staff argued that the TIS did not account for recent growth in the area driven by the addition of Western International Gas and Cylinders and the expansion of Tech Packaging. Further, township staff indicated that more growth is expected, as there is an application pending for a co-gen natural gas plant in the area. Township staff members are hopeful the TIS will be updated and additional mitigation strategies implemented.

Terrestrial

Info Need Number	ESRP and EIS Section	Supporting Regulations	Question Summary (RAI)	Full Text (Supporting Information)
TE-31	ESRP 5.6.1 EIS Section 5.3.1		Provide a summary of PPL's scheduling practices for vegetation maintenance activities in onsite transmission-line corridors, including any practices that minimize impacts on migratory birds during the nesting season in consideration of the Federal Migratory Bird Treaty Act.	ESRP Section 5.6.1 directs the staff's identification and evaluation of impacts on the terrestrial ecosystem induced by the operation and maintenance of transmission systems. Scope of this review should include the general effects of rights-of-way maintenance and effects on "important" terrestrial species and habitats (defined in Table 2.4.1-1).

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TE-37 (NEW)	ESRP 4.3.1 EIS Section 4.3.1		In reference to PPL's proposed Confers Lane compensatory wetland mitigation project, provide information indicating whether Confers Lane would remain open and, if so, the fate of the mitigation project; i.e., whether the project would	PPL's proposed commitment to forest harvest restrictions between March and November for the Federally endangered Indiana bat (page 21 of the October 2011 <i>Indiana Bat Biological Evaluation and Management Plan</i>) would also reduce impacts on migratory birds nesting in the same habitat during the same period. PPL also plans to follow the Edison Electric Institute's (EEI) <i>Suggested Practices for Avian Protection on Power Lines</i> and the <i>Avian Protection Plan Guidelines</i> developed by EEI (supplemental response to site audit information need TE-31 dated June 11, 2012 ML12172A249), which would minimize migratory bird electrocutions and collisions with transmission lines. Migratory birds nest in established transmission-line corridors and may be affected by corridor vegetation maintenance activities that PPL projects would take place every third year (response to site audit information need TE-9 dated May 31, 2012 ML121580599). ESRP Section 4.3.1 directs the staff's description, quantification, and assessment of the impacts of construction on the terrestrial ecosystem. The scope of the review includes an assessment of both onsite and offsite construction, including transmission line

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			<p>be undertaken, how, and the anticipated amount of wetland created and/or enhanced. Alternatively, if Confers Lane will remain open and the mitigation project would not be executed, describe any PPL plans for substitute compensatory mitigation.</p>	<p>and access corridor construction. The assessment should be in sufficient detail to (1) predict and evaluate the significance of potential impacts to “important” species and their habitats and (2) evaluate how these impacts should be considered in the licensing decision. If necessary, the reviewer should suggest consideration of alternative designs or construction practices, or licensee commitments to mitigate the intensity of environmental impacts.</p> <p>PPL's Joint Permit Application to the U.S. Army Corps of Engineers provides a detailed proposed mitigation plan to reconnect two wetlands (formerly joined hydrologically), one on either side of Confers Lane, as partial compensation for construction of BBNPP. The plan is based on closing Confers Lane, removing the roadbed down to the level of the existing wetlands to restore the hydrological connection, and revegetating imported native soil. However, information obtained from Salem Township at the site audit in May 2012 indicated that Confers Lane may not be closed, calling into question whether the proposed mitigation plan would be undertaken and, if so, how and with what anticipated result, or alternatively, whether it would be</p>

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TE-38 (NEW)	ESRP 9.3 EIS Section 9.3		Describe the potential effects of development of the Martin's Creek site on terrestrial ecological resources within the parcel of the Buckhorn Creek Wildlife Management Area (WMA) that it surrounds on three sides (see Highlands Council Interactive Map http://map.nhighlands.us/nhighlands/hgis/#). Explain how this would be consistent with the NJDEP development restrictions imposed on Highlands Region Preservation Areas such as the Buckhorn WMA by the NJDEP.	substituted with other compensatory mitigation. ESRP Section 9.3 directs the staff's analysis and evaluation of alternatives to the applicant's proposed site for the construction and operation of a nuclear power plan. The scope of the review should ensure environmental descriptions for the alternative sites are adequate to assess environmental impacts of plant construction and operation. The Martin's Creek alternative site surrounds on three sides a portion of the Buckhorn Creek WMA owned by the New Jersey Department of Environmental Protection (NJDEP). This parcel of the Buckhorn Creek WMA lies within the Preservation Area of the New Jersey Highlands Region. The Preservation Area has development restrictions imposed by the NJDEP Highlands Act and implemented by the NJDEP through its Highlands Rules (New Jersey Administrative Code 7:38-1 et seq) (see May 10, 2012 letter from the Highlands Council to the NRC ML12135A234).
TE-39 (NEW)	ESRP 2.4.1 EIS Section 2.4.1	Endangered Species Act (16 U.S.C. 1531 et seq.)	Provide any plans to re-survey the BBNPP project area in 2013 for the Indiana bat, taking into consideration the supporting information provided.	ESRP Section 2.4.1 directs the staff's description of the terrestrial environment and biota of the site, transmission corridors, and offsite areas likely to be impacted by the

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				<p>construction, maintenance, or operation of the proposed project. This information will also be used in preparing the biological assessment as required per the Endangered Species Act.</p> <p>A mist net survey of select locations on the BBNPP site was conducted from 6/7/08-7/11/08 (Normandeau Project No. 21159.013 report). This survey yielded negative results for the Indiana bat. Negative survey results are considered valid for five years by the U.S. Fish and Wildlife Service (FWS) (section 2.3.2 of the FWS 2009 <i>Range-Wide Indiana Bat Protection and Enhancement Plan Guidelines</i>). Consequently, a re-survey of the BBNPP project area in 2013 using the most recent FWS Indiana bat mistnetting guidelines is recommended (FWS letter to NRC dated May 7, 2012 ML121450545). The large wetland located in the southwest corner of the BBNPP site was omitted from the 2008 mist net surveys (FWS letter to NRC dated July 10, 2009 ML092020071). Currently, only a small portion of this forested wetland would be disturbed by the project; however, it may be indirectly disturbed by adjacent site development (Figure 2 in the October 2011 <i>Indiana Bat Roost Tree Survey Report</i> and Figure 5 in the October 2011 <i>Indiana Bat</i></p>

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TE-40 (NEW)	ESRP 4.3.1, 5.3.3.2 EIS Sections 4.3.1, 5.3.1	Endangered Species Act (16 U.S.C. 1531 <i>et seq.</i>)	Provide a series of figures that subdivide and cover the BBNPP project area depicting the sizes of forest parcels that would remain after site development, the distances that would separate them, and the project infrastructure that would separate them during both the construction and operation phases of the project. Describe the construction activities, including duration, which would occur in the land areas that separate these forest parcels, and the future uses of and the activities that would occur within these land areas during plant operation. Describe how potential	<i>Biological Evaluation and Management Plan</i>). The 2008 surveys also did not provide any information about potential use of the project area by Indiana bats in the fall (FWS letter to NRC dated July 10, 2009 ML092020071), since suitable forest habitat within 10 mi of a hibernaculum (such as the forest habitat on the BBNPP site) is otherwise assumed to be used by the species for fall roosting, foraging, and swarming (section 2.2 of the FWS 2009 <i>Range-Wide Indiana Bat Protection and Enhancement Plan Guidelines</i>).
			<p>separate them, and the project infrastructure that would separate them during both the construction and operation phases of the project. Describe the construction activities, including duration, which would occur in the land areas that separate these forest parcels, and the future uses of and the activities that would occur within these land areas during plant operation. Describe how potential</p>	<p>ESRP Section 4.3.1 directs the staff's description, quantification, and assessment of the impacts of construction on the terrestrial ecosystem. The scope of the review includes an assessment of both onsite and offsite construction, including transmission line and access corridor construction. The assessment should be in sufficient detail to (1) predict and evaluate the significance of potential impacts to "important" species and their habitats and (2) evaluate how these impacts should be considered in the licensing decision. If necessary, the reviewer should suggest consideration of alternative designs or construction practices, or licensee commitments to mitigate the intensity of</p>

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			<p>impacts to Indiana bats from forest fragmentation would affect the current mitigation compensation ratio of 1.6:1 (386 ac preserved: 234 ac impacted) in the October 2011 <i>Indiana Bat Biological Evaluation and Management Plan</i>.</p>	<p>environmental impacts. ESRP Section 5.3.3.2 directs the staff's identification and evaluation of impacts to terrestrial ecosystems induced by the operation of heat dissipation systems, especially cooling towers and cooling ponds. This information will also be used in preparing the biological assessment as required per the Endangered Species Act.</p> <p>Based on Figure 2 in the October 2011 <i>Indiana Bat Roost Tree Survey Report</i> and Figure 5 in the October 2011 <i>Indiana Bat Biological Evaluation and Management Plan</i>, site development would reduce the size and connectivity of upland and wetland forest tracts on the BBNPP site, resulting in a number of fragmented and isolated forest parcels. This appears to be the case particularly in the western part of the project area where forest is currently contiguous with forests to the north and south of the project area. There is no information on the sizes of these parcels, or the distances or project infrastructure and activities (including duration) that would separate them during both the construction and operation phases of the project. This information will facilitate a determination of potential impacts to Indiana bat habitat on the BBNPP site due to forest</p>

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TE-41 (NEW)	ESRP 4.3.1, 4.7 EIS Sections 4.3.1 and 7.3	Endangered Species Act (16 U.S.C. 1531 <i>et seq.</i>)	Provide a figure that depicts hardwood and mixed-hardwood forest habitat available within a 10 mi radius of the October 2011 <i>Indiana Bat Biological Evaluation and Management Plan</i> . Provide a determination of the percentage of the total hardwood and mixed-hardwood forest habitat available in this area that would be lost by development of the BBNPP site.	fragmentation, including the likelihood of use of such isolated forest parcels in the future by the species, and any need to offset such impacts through permanent forest conservation. ESRP Section 4.3.1 directs the staff's description, quantification, and assessment of the impacts of construction on the terrestrial ecosystem. The scope of the review includes an assessment of both onsite and offsite construction, including transmission line and access corridor construction. The assessment should be in sufficient detail to (1) predict and evaluate the significance of potential impacts to "important" species and their habitats and (2) evaluate how these impacts should be considered in the licensing decision. If necessary, the reviewer should suggest consideration of alternative designs or construction practices, or licensee commitments to mitigate the intensity of environmental impacts. ESRP Section 4.7 directs the staff's summarization of potential cumulative environmental impacts associated with construction activities for the proposed project. This information will also be used in preparing the biological assessment as required per the Endangered Species Act.

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				<p>The October 2011 <i>Indiana Bat Biological Evaluation and Management Plan</i> (BEMP) identifies other activities (BEMP Section 8 Cumulative Effects Analysis) that may contribute to forest loss within the BBNPP action area (BEMP Figure 2), but does not consider the effects of forest loss on the BBNPP site on a landscape scale. Suitable forest habitat within 10 mi of a hibernacula (such as the forest habitat on the BBNPP site) is assumed to be used by the species for fall roosting, foraging, and swarming (FWS letter to NRC dated July 10, 2009 ML092020071 and Section 2.2 of FWS 2009 <i>Range-Wide Indiana Bat Protection and Enhancement Plan Guidelines</i>). An assessment of the loss of hardwood and mixed-hardwood forest habitat in the BBNPP project area relative to the amount of such habitat available within a 10-mi radius of the BBNPP site, which encompasses three hibernacula (Figure 4 of the <i>Indiana Bat Biological Evaluation and Management Plan</i>), would provide an indication of landscape-scale effects to Indiana bat habitat by the BBNPP project.</p>
TE- 42 (NEW)	ESRP 4.3.1, 5.3.1	Endangered Species Act	Provide any plans or procedures for adhering to the alternative process	ESRP Section 4.3.1 directs the staff's description, quantification, and assessment of

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	EIS Sections 4.3.1, 5.3.1	(16 U.S.C. 1531 <i>et seq.</i>)	recommended by FWS for performing an emergency cutting of a potential roost tree from April 1 to November 15, as described in the FWS May 7, 2012 letter to the NRC (ML121450545).	<p>the impacts of construction on the terrestrial ecosystem. The scope of the review includes an assessment of both onsite and offsite construction, including transmission line and access corridor construction. The assessment should be in sufficient detail to (1) predict and evaluate the significance of potential impacts to “important” species and their habitats and (2) evaluate how these impacts should be considered in the licensing decision. If necessary, the reviewer should suggest consideration of alternative designs or construction practices, or licensee commitments to mitigate the intensity of environmental impacts. ESRP Section 5.3.3.2 directs the staff’s identification and evaluation of impacts to terrestrial ecosystems induced by the operation of heat dissipation systems, especially cooling towers and cooling ponds. This information will also be used in preparing the biological assessment as required per the Endangered Species Act.</p> <p>Section 6.1 of the October 2011 <i>Indiana Bat Biological Evaluation and Management Plan</i> prescribes the process for performing an emergency cutting of a potential roost tree from April 1 to November 15 to facilitate recovery from or prevention of an interruption</p>

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				<p>in power transmission due to interference from a tree. The tree(s) may be cut down without providing prior notification to the USFWS. However, as soon as practicable after the emergency cut, a biologist would assess whether or not an Indiana bat was harmed. If no Indiana bat was harmed, the emergency tree cutting would be documented and a copy provided to FWS. If an Indiana bat was harmed, the event would be documented and the FWS and NRC would be immediately notified. However, this method is impractical for avoiding and determining potential impacts to Indiana bats, as bats may abandon a roost unnoticed during tree cutting or may succumb and not be readily observed in the debris afterward. Thus, FWS recommended an alternative process for performing an emergency cutting of a potential roost tree from April 1 to November 15 in its May 7, 2012 letter to the NRC (ML121450545). It prescribes observation by a qualified Indiana bat surveyor for bat emergence beginning at least 30 minutes before sunset. If no bats are observed emerging from the tree and no bats are heard on the tree, the tree would be cut immediately following the emergence survey. While lighting may be necessary to safely fell the tree, no lighting would be used until after</p>

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TE-43 (NEW)	ESRP 4.3.1 EIS Section 4.3.1	Endangered Species Act (16 U.S.C. 1531 <i>et seq.</i>)	Provide an explanation of the types and acreages of compensatory mitigation for impacts to forest habitat for the Indiana bat, and include any areas of passive reforestation if such areas are part of the mitigation plan. Revise Figures 2 and 5 of the <i>Indiana Bat Biological Evaluation and Management Plan</i> to include areas of passive reforestation if such areas are part of the mitigation plan.	the emergence survey is completed. If any bats are observed, the FWS would be consulted prior to cutting the tree. ESRP Section 4.3.1 directs the staff's description, quantification, and assessment of the impacts of construction on the terrestrial ecosystem. The scope of the review includes an assessment of both onsite and offsite construction, including transmission line and access corridor construction. The assessment should be in sufficient detail to (1) predict and evaluate the significance of potential impacts to "important" species and their habitats and (2) evaluate how these impacts should be considered in the licensing decision. If necessary, the reviewer should suggest consideration of alternative designs or construction practices, or licensee commitments to mitigate the intensity of environmental impacts. This information will also be used in preparing the biological assessment as required per the Endangered Species Act. The introductory portion of Section 4.2 of the October 2011 <i>Indiana Bat Biological Evaluation and Management Plan (BEMP)</i> discusses conservation and reforestation of

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TE-44 (NEW)	ESRP 4.3.1 EIS Section 4.3.1	Endangered Species Act (16 U.S.C. 1531 <i>et seq.</i>)	Provide any plans to place all Indiana bat compensatory mitigation lands (forest preservation [386 acres], active reforestation [58 acres], and passive reforestation through natural succession [137 acres] [Note that inclusion of the 137 acres is questioned in a related RAI], totaling 581 acres) into a conservation easement for permanent protection and develop a corresponding resource management plan prior to any disturbance of Indiana bat habitat on the BBNPP site, as described in the supporting information. Also provide any plans to disclose to FWS, NRC, and a prospective easement holder any factors that could render the conservation easement property	386 ac and 58 ac, respectively, totaling 444 ac. These areas are depicted in Figures 2 and 5 of the BEMP. In contrast, the May 7, 2012 FWS letter to the NRC (ML121450545) notes that PPL proposes to partially offset the loss of forest habitat for the Indiana bat by preservation of 386 ac of forest, active reforestation of 58 ac, and passive reforestation through natural succession of 137 ac, totaling 581 ac. ESRP Section 4.3.1 directs the staff's description, quantification, and assessment of the impacts of construction on the terrestrial ecosystem. The scope of the review includes an assessment of both onsite and offsite construction, including transmission line and access corridor construction. The assessment should be in sufficient detail to (1) predict and evaluate the significance of potential impacts to "important" species and their habitats and (2) evaluate how these impacts should be considered in the licensing decision. If necessary, the reviewer should suggest consideration of alternative designs or construction practices, or licensee commitments to mitigate the intensity of environmental impacts. This information will also be used in preparing the biological assessment as required per the Endangered

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			vulnerable to future habitat loss.	<p>Species Act.</p> <p>The May 7, 2012 FWS letter to the NRC (ML121450545) states that PPL proposes to partially offset the loss of forest habitat through a combination of forest preservation (386 ac), active reforestation (58 ac), and passive reforestation through natural succession (137 ac) (note that inclusion of the 137 acres is questioned in a related RAI), totaling 581 ac. The proposed preservation of existing forest is at a 1.6:1 compensation ratio (386 ac preserved:234 ac impacted), although this may be reduced after short- and long-term impacts on isolated forest parcels remaining after construction are further evaluated, as noted in RAI TE-40. While the October 2011 <i>Indiana Bat Biological Evaluation and Management Plan</i> indicates 386 ac of forest will be protected through a conservation easement, this does not address the long-term fate of the 58 acres of active reforestation or the 137 acres of passive reforestation (natural succession) (note that inclusion of the 137 acres is questioned in a related RAI). In the absence of any permanent protection of these lands, they would not be counted as compensating for impacts to Indiana bat habitat, and thus not</p>

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TE-45 (NEW)	ESRP 4.3.1 EIS Section 4.3.1	Endangered Species Act (16 U.S.C. 1531 <i>et seq.</i>)	Provide any plans to include the 137 acres of passive reforestation (natural succession) in the long-term monitoring and maintenance plan originally established for the 58 acres of active reforestation, and to provide any plans for proactive intervention for both the active or passive reforestation areas to ensure the long-term success of reforestation, as described in the supporting information. Indicate the foreseen duration of the long-term	figured into the compensation ratio. Therefore, the FWS recommended that all 581 acres be part of the conservation easement and that a resource management plan be developed and finalized prior to disturbance of any Indiana bat habitat on the BBNPP site. The resource management plan would replace the forest management guidelines in Section 7.2 of the <i>Indiana Bat Biological Evaluation and Management Plan</i> . In addition, it would be important to assess and disclose to FWS, NRC, and a prospective easement holder any existing easements, liens, encumbrances or reserved rights related to the surface or subsurface of the property that may render it vulnerable to future habitat loss (FWS May 7, 2012 letter to NRC ML121450545). ESRP Section 4.3.1 directs the staff's description, quantification, and assessment of the impacts of construction on the terrestrial ecosystem. The scope of the review includes an assessment of both onsite and offsite construction, including transmission line and access corridor construction. The assessment should be in sufficient detail to (1) predict and evaluate the significance of potential impacts to "important" species and their habitats and (2) evaluate how these impacts should be considered in the licensing

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			<p>monitoring and maintenance plan based on a conservative estimate of the time required to achieve success.</p>	<p>decision. If necessary, the reviewer should suggest consideration of alternative designs or construction practices, or licensee commitments to mitigate the intensity of environmental impacts. This information will also be used in preparing the biological assessment as required per the Endangered Species Act.</p> <p>Section 7.1 of the October 2011 <i>Indiana Bat Biological Evaluation and Management Plan</i> indicates that the 58 acres of active reforestation would be subject to reforestation guidelines, which include a long-term monitoring and maintenance plan to ensure that reforestation efforts, as well as natural re-colonization, will be successful (i.e., meet specifications of Section 2.4.2.2 of FWS 2009 <i>Range-Wide Indiana Bat Protection and Enhancement Plan Guidelines</i> and other guidance provided by the FWS). The long-term monitoring and maintenance plan includes provisions to control invasive plants and white-tailed deer browsing (amongst other things) within the 58 ac active reforestation area that could impede establishment of diverse native hardwood tree species that meet specifications in the above-cited reference. However, no similar provisions are</p>

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TE-46 (NEW)	ESRP 4.3.1 EIS Section 4.3.1	Endangered Species Act (16 U.S.C. 1531 <i>et seq.</i>)	Provide a figure/map depicting the 11.8 acres of palustrine forested wetland that would be impacted and the extent to which this area overlaps with the area of mitigative reforestation for the Indiana bat. Provide a discussion of how the 10-yr wetland monitoring and corrective action plan specified in Section 3.1.2 of the October 2011 <i>Indiana Bat Biological Evaluation and Management Plan</i> would interface with the long-term monitoring and maintenance plan noted in RAI TE-45 to ensure that any forested wetland mitigation would be successful for the Indiana bat.	made in the <i>Indiana Bat Biological Evaluation and Management Plan</i> for the 137 acres of passive reforestation (natural succession). Further, no provision is made for proactive intervention for either the active or passive reforestation areas to ensure success, if needed (FWS May 7, 2012 letter to NRC ML121450545), and the foreseen length of the long-term monitoring and maintenance plan is not indicated.
				ESRP Section 4.3.1 directs the staff's description, quantification, and assessment of the impacts of construction on the terrestrial ecosystem. The scope of the review includes an assessment of both onsite and offsite construction, including transmission line and access corridor construction. The assessment should be in sufficient detail to (1) predict and evaluate the significance of potential impacts to "important" species and their habitats and (2) evaluate how these impacts should be considered in the licensing decision. If necessary, the reviewer should suggest consideration of alternative designs or construction practices, or licensee commitments to mitigate the intensity of environmental impacts. This information will also be used in preparing the biological

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				<p>assessment as required per the Endangered Species Act.</p> <p>Section 3.1 (introduction) of the October 2011 <i>Indiana Bat Biological Evaluation and Management Plan</i> (BEMP) notes that 11.8 ac of palustrine forested wetland would be impacted, but does not indicate to what extent these impacts overlap with areas of mitigative reforestation for the Indiana bat. Section 3.1.2 of the BEMP (Wetland Mitigation Activities) specifies a 10-yr monitoring and corrective action plan, but does not discuss whether this plan is part of the long-term monitoring and maintenance plan noted above for the Indiana bat and, if so, how the two monitoring plans would interface to ensure that any forested wetland mitigation would be successful for the species.</p>

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TE-47 (NEW)	ESRP 4.3.1 EIS Section 4.3.1	Endangered Species Act (16 U.S.C. 1531 <i>et seq.</i>)	Provide any plans to begin restoration efforts as expediently as possible in areas of both active (58 ac) and passive (137 ac) reforestation, in order to partially offset the permanent loss of resource function for Indiana bats that would occur within the 244 ac of suitable forest habitat that would be impacted by the BBNPP project.	<p>ESRP Section 4.3.1 directs the staff's description, quantification, and assessment of the impacts of construction on the terrestrial ecosystem. The scope of the review includes an assessment of both onsite and offsite construction, including transmission line and access corridor construction. The assessment should be in sufficient detail to (1) predict and evaluate the significance of potential impacts to "important" species and their habitats and (2) evaluate how these impacts should be considered in the licensing decision. If necessary, the reviewer should suggest consideration of alternative designs or construction practices, or licensee commitments to mitigate the intensity of environmental impacts. This information will also be used in preparing the biological assessment as required per the Endangered Species Act.</p> <p>The effects of forest loss in the BBNPP project area would be considered permanent, as it would take decades for new forests to mature. In order to partially offset this permanent loss of resource function for Indiana bats within the 244 ac of suitable forest habitat that would be impacted, the FWS recommended that forest restoration efforts begin immediately both in</p>

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Info Need Number	ESRP and EIS Section	Supporting Regulations	Question Summary (RAI)	Full Text (Supporting Information)
TE-48 (NEW)	ESRP 2.4.1 EIS Section 2.4.1	Endangered Species Act (16 U.S.C. 1531 <i>et seq.</i>)	Provide a summary of the methods used and locations searched in order to determine that no potential Indiana bat hibernacula exist within the BBNPP project boundary.	<p>areas of active (58 ac) and passive (137 ac) reforestation (FWS May 7, 2012 letter to NRC ML12-1450545).</p> <p>ESRP Section 2.4.1 directs the staff's description of the terrestrial environment and biota of the site, transmission corridors, and offsite areas likely to be impacted by the construction, maintenance, or operation of the proposed project. This information will also be used in preparing the biological assessment as required per the Endangered Species Act.</p> <p>Page 4 of the October 2011 <i>Indiana Bat Biological Evaluation and Management Plan (BEMP)</i> references the April 21, 2008 FWS letter found in Appendix A of the BEMP. The letter requested that any caves or mine openings on the BBNPP site be identified, in association with a request to complete a bat survey of the project area. However, no</p>

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Info Need Number	ESRP and EIS Section	Supporting Regulations	Question Summary (RAI)	Full Text (Supporting Information)
TE-49 (NEW)	ESRP 4.3.1 EIS Section 4.3.1	Endangered Species Act (16 U.S.C. 1531 <i>et seq.</i>)	Provide the reference for the requirement on page 26 of the BEMP that at least 70 percent of the total Indiana bat forested habitat to be affected must be reforested, unless off-site mitigation measures are used. Provide the acreages of the offsite (based on BEMP Figure 1, this is east of the Susquehanna River) reforestation and conservation areas, and whether (and if so, how) these are an adequate substitution for the 105 ac (45 percent) of impacted Indiana bat habitat that would not be reforested, as explained in the supporting information.	summary of the methods used and locations searched in order to identify any caves or mine openings is included in the bat survey report found in Appendix B of the BEMP. Instead, page 4 of the BEMP simple states that no potential hibernacula were identified within the BBNPP project boundary.
				ESRP Section 4.3.1 directs the staff's description, quantification, and assessment of the impacts of construction on the terrestrial ecosystem. The scope of the review includes an assessment of both onsite and offsite construction, including transmission line and access corridor construction. The assessment should be in sufficient detail to (1) predict and evaluate the significance of potential impacts to "important" species and their habitats and (2) evaluate how these impacts should be considered in the licensing decision. If necessary, the reviewer should suggest consideration of alternative designs or construction practices, or licensee commitments to mitigate the intensity of environmental impacts. This

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				<p>information will also be used in preparing the biological assessment as required per the Endangered Species Act.</p> <p>Page 26 of the October 2011 <i>Indiana Bat Biological Evaluation and Management Plan</i> (BEMP) states that at least 70 percent of the total Indiana bat forested habitat to be affected must be reforested, unless off-site mitigation measures are used. There is no reference provided for this requirement. Based on the BEMP, about 25 percent (58 ac) of the total Indiana bat forested habitat (234 ac) that would be affected would be reforested, leaving approximately 45 percent (105 ac) that would need to be reforested per the above-stated requirement, or be compensated for via offsite mitigation. Ten of the 58 ac to be reforested are located in the Walker Run corridor and 48 ac are in the Susquehanna River corridor (BEMP Figure 2). Of the 48 ac, an unknown number are offsite, i.e., on the east side of the Susquehanna River (BEMP Figure 2). In addition, 264 ac of forest would be in Conservation Management Area 1 in the Susquehanna River corridor (BEMP Figure 2). Of the 264 ac, an unknown number are located offsite on the east side of the Susquehanna River (BEMP Figure 2). The</p>

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				<p>BEMP does not indicate whether (and if so, on what basis) the unidentified numbers of reforestation and conservation acres located offsite are an adequate substitution for the 105 ac (45 percent) of impacted Indiana bat habitat.</p>