

Post-Audit Status of Information Needs for Bell Bend Second Alternative Sites Visit

Compiled Info Needs #	Info Needs # from original file	ER Section	Information Needed	Resolution/Notes
AE-			Aquatic Ecology	
AE-1	AE 9.3-1	9.3	<p>Provide an expert who can discuss the threatened and endangered (T&E) species that were included in the alternative sites evaluation. The County Lists of T&E species that were provided in Section 9.3 include several aquatic plants and animals. Please make available documentation to support the scoring (5.0) that indicates there were no T&E habitat types on each alternative site. For example, the Humboldt site would disturb about 28 ac of wetlands and 17,000 lf of streams (including various rights-of ways [ROWs]). There are more than 12 plants and animals on the T&E list for Luzerne County (Table 9.3-3). Please provide an expert to discuss any evidence that habitats for these species are not on the site or ROW. Please provide an expert to discuss whether freshwater mussels were included in the T&E evaluation.</p>	<p>Resolved. Provided references for review. References are publicly available:</p> <ol style="list-style-type: none"> 1. Columbia County Natural Areas Inventory 2004 prepared by the Pennsylvania Science Office of the Nature Conservancy 2. Montour County Natural Areas Inventory 2005 prepared by the Pennsylvania Science Office of the Nature Conservancy 3. A Natural Areas Inventory Luzerne County, Pennsylvania Update 2006 prepared by the Pennsylvania Natural Heritage Program Western Pennsylvania Conservancy 4. A Natural Areas Inventory of Northumberland County, Pennsylvania Update 2008 prepared by the Pennsylvania Natural Heritage Program Western Pennsylvania Conservancy

AE-2	AE 9.3-2	9.3	Please make available the cited documentation that no aquatic T&E species occur on the Montour, Humboldt, and Seedco alternative sites, including any necessary transmission line or water pipeline ROWs and the location of the circulating water system (CWS) intake/discharge.	Resolved. Reference is available in electronic reading room. Checked copy at audit.
AE-3	AE 9.3-3	9.3	Provide an expert who can discuss the wetlands scoring for the alternative sites. Seedco and Montour were scored 5-5-5 for the three wetlands criteria; Humboldt scored 5-3-5. Seedco would disturb 43 ac of wetlands, 14,000 lf of streams; Montour would disturb 10 ac and 8500 lf; Humboldt would disturb 28 ac and 17,000 lf. Please provide an expert who can discuss the scores relative to the level of potential disturbance.	Resolved. Totals include pipeline and transmission ROWs. Criterion only includes onsite impacts.
AE-4	AE 9.3-4	9.3	Provide an expert who can discuss the potential downstream ecological effects in the Susquehanna River resulting from the estimated water consumption for the new plant, compared to the minimum low-flow values that normally occur during late summer.	Open. Provide written response that incorporates verbal answer.
AE-5	AE(2)-1	9.3	Provide a knowledgeable expert who can discuss the exclusionary screening criteria to establish candidate areas (cited in the application in the Alternative Site Evaluation Rev 1, pg. 9). One criterion excluded sites that were more than 15 mi from an acceptable water source. Two alternative sites (Humboldt and Seedco) met this straight-line criterion but had conceptual CWS pipeline routes that were much greater than 15 mi (24 and 21 mi, respectively). Were there any potentially "better" sites that were excluded because they did not meet the 15-mi straight-line criterion that might have had actual pipeline routes shorter than those for Humboldt or Seedco?	Resolved. Response explains the process for setting the criterion. Process was to set a fixed distance from a water source to be able to evaluate an initially large number of sites. The eventual pipeline distance required was not considered at this point in the evaluation. Note that PPL has revised the Humboldt pipeline and it is now estimated to be about 12.8 mi long (August 13, 2010 response to info need AE32, ML102310237).
AE-6	AE(2)-2	9.3	Provide a knowledgeable expert who can discuss the Thermal Sensitivity Aquatic Biological Resource criterion. What was used to determine thermal sensitivity? Potential thermal sensitivity should be determined by knowledge of the species present and their thermal tolerances rather than generic designated resource classifications. How is this criterion useful given that the modeling for Bell Bend shows minimal potential thermal effects from the discharge? Why are marine resources scored lower than warm water aquatic resources?	Resolved through discussions. The criterion was meant to be a general screening mechanism that was used for many sites in a relatively efficient manner.
AE-7	AE(2)-3	9.3	Provide a knowledgeable expert who can discuss the construction process for the CWS intake/discharge systems at the proposed Alternative Sites. The	Open. Provide written response. Written response

			description for each site is the same and is weighted heavily towards dredging and its associated effects. Conversely, the intake/discharge system proposed for Bell Bend would use a cofferdam system and excavation. Would the CWS intake/discharge systems for the proposed Alternative Sites differ from that described for Bell Bend? Why would the construction method for the Alternative Sites differ from that for Bell Bend?	submitted in July 21, 2010 letter from applicant (ML102070070).
AE-8	AE(2)-4	9.3	Provide a knowledgeable expert who can discuss water consumption at the proposed or Alternative Sites. Would the water consumption by a new nuclear power plant reduce the "wet width" of the river downriver from the CWS system at each site? Would the natural flow variability in the river be interrupted by the water consumption or the measures used to offset the consumption? Would water quality, in particular dissolved oxygen concentration, be adversely affected by the consumption?	Open. Provide written response. Consider revised response to AE9.3-4. Written response submitted in July 9, 2010 letter from applicant (ML101930519).
AE-9	AE(2)-5	9.3	Provide a knowledgeable expert who can discuss aquatic invasive species. What are the potential effects of water flow alterations on invasive species presently in the Susquehanna River below Bell Bend or near the Alternative Site intake/discharge systems (e.g., Asian clam), or those species that may eventually occur there (e.g., zebra mussel). The rusty crayfish is known from Northumberland County. Would building and operating a plant on the Seedco site potentially increase the occurrence of the rusty crayfish in the county?	Resolved. Reference to MacIsaac 1996 Am Zool. 36:287-299 about zebra mussel effects.
AE-10	AE(2)-6	9.3	Provide a knowledgeable expert who can discuss the state-listed or ranked wetlands/aquatic plants listed in Tables 9.3-1, 9.3-3, and 9.3-5, and to clarify whether or not any are likely to occur on the Alternative Sites. Also, provide an expert to discuss the likelihood that any fully aquatic plants listed in Table 9.3-3 exist in the streams or ponds on the Bell Bend site, in the North Branch Canal, or on the Humboldt site. No aquatic plants are discussed for Bell Bend in Environmental Report (ER) Rev 2, Section 2.4, nor for Humboldt in Section 9.3.2.3. There seem to be at least 14 species of aquatic plants on the list for Luzerne County. Provide a copy of "Rhoads and Block (2007) The Plants of Pennsylvania: An Illustrated Manual, 2 nd Edition" for review during the alternative site visit. Note that this expands on one request already submitted.	Open. Discussed list with subject matter expert (SME). Provide a table to document the rationale for removing species from consideration. Book provided for review.
AE-11	AE(2)-7	9.3	Provide a knowledgeable expert who can discuss the ecologically important species listed in Table 9.3-11, specifically to identify which species are relevant to each Alternative Site. The list is given for the State and many species on it are not relevant to the Alternative Sites. For example, the American brook lamprey is listed but only occurs in rivers in the northern or western part of the state, quite far from any of the Alternative Sites.	Open. Provide table that was revised by SME to reflect watersheds, not the State.
AE-12	AE(2)-8	9.3	Provide a knowledgeable expert who can discuss the occurrence of commercial and recreational fisheries for each of the Alternative sites. The	Open. Provide written response. Mentions a

			fisheries subsections for the Alternative Sites are essentially the same and do not recognize potential differences among sites. Are there any commercial fisheries or commercial bait collection activities in the Susquehanna River stretches near the CWS intake/discharge systems for any site?	commercial bait operation in Luzerne but not on river. Additional documentation provided. Written response submitted in July 9, 2010 letter from applicant (ML101930519).
AE-13	AE(2)-9	9.3	Provide a knowledgeable expert who can discuss the State-ranked (S1, S2) insects for Luzerne County. Many (at least 24) of these have aquatic life stages (Odonata), but no ranked insects were discussed in the section. No insects were included in Table 9.3-3. Odonate larvae were collected from Bell Bend onsite streams in 2008 but were not identified to species. Provide an expert to discuss the conservation status of these species in Pennsylvania; the likelihood that the ranked species were not among those collected from Bell Bend streams and whether they are likely to occur in Bell Bend streams; and the likelihood that ranked insects could occur on the Humboldt site. {Note: lists for Montour and Northumberland do not include odonates, with one exception.}	Open. Provide written response. Answer provides info about potential on Humboldt. Written response submitted in July 9, 2010 letter from applicant (ML101930519).
AE-14	AE(2)-10	9.3	Provide a knowledgeable expert who can discuss the conceptual location of the CWS intake/discharge system for a new plant at the Montour site and the potential effects on aquatic resources at the location. The text indicates that the intake/discharge system would be located on the West Branch of the Susquehanna River, which is in Northumberland County. Provide an expert to discuss the potential effects of the intake/discharge systems on aquatic resources, particularly Federally listed or Pennsylvania listed or ranked species, in Northumberland County. Also, the river appears to be the boundary between Northumberland and Union Counties. Provide an expert to describe the same effects for Union County, if that county should be included in the evaluation.	Resolved. Union County line is on opposite bank of River; therefore don't need to consider Union County.
AE-15	AE(2)-11	9.3	Provide a knowledgeable expert who can discuss the water withdrawal from/discharge into the West Branch Susquehanna River by the Montour coal plant and the potential combined ecological effects of locating the CWS intake near the Montour coal plant CWS system. What is the amount of water withdrawn/consumed by the Montour coal plant? Are entrainment/impingement data for the Montour coal plant available?	Open. Provide written response. Written response submitted in July 9, 2010 letter from applicant (ML101930519).
AE-16	AE(2)-12	9.3	Provide a knowledgeable expert who can provide a concise description of the water body located at the southeast corner of the proposed Montour site boundary.	Open. Provide written response. Old water body was an ash pond that has been filled. Written response

				submitted in July 21, 2010 letter from applicant (ML102070070).
AE-17	AE(2)-13	9.3	Provide a knowledgeable expert who can verify whether Lake Chillisquaque would be affected by building and operating a new plant on the Montour site. How close would building activities be to the lake?	Open. Provide written response. Written response submitted in July 9, 2010 letter from applicant (ML101930519).
AE-18	AE(2)-14	9.3	Provide an expert who can discuss the conceptual route for a new transmission line to the proposed Catawissa Substation (page 39 of Section 9.3) and the potential effects on aquatic resources. Catawissa is on the south shore of the Susquehanna River. Would the route cross Mahoning Creek (an approved trout stream stocked by the state); would a new crossing need to be built? Would a new Susquehanna River crossing for the transmission line need to be built? Provide an expert to describe the potential effects on each waterbody. Catawissa is in Columbia County; would building the transmission line affect any Federally listed or Pennsylvania listed or ranked species or other aquatic resources in the county?	Open. Provide written response. Written response submitted in July 9, 2010 letter from applicant (ML101930519).
AE-19	AE(2)-15	9.3	Provide a knowledgeable expert who can verify whether trout are stocked in streams on the Montour and Humboldt Sites. The cited reference documenting trout stocking on page 32 (Montour) and page 49 (Humboldt) is "PFBC 2009b," which is for Northumberland County, not Montour or Luzerne Counties.	Open. Provide written response. ER sections to be revised for each site. Written response submitted in July 21, 2010 letter from applicant (ML102070070).
AE-20	AE(2)-16	9.3	Provide a knowledgeable expert who can discuss the aquatic resources on the Humboldt site. One 4-ac pond is listed in Table 9.3-13 as being onsite. Identify the location of this pond. There appear to be at least four small "ponds" on the western part of the site (Figure 9.3-26). Were all included in the evaluation? Humboldt Reservoir is immediately north of the site. Would the reservoir or its outlet stream be affected by a new nuclear power plant on the site? The ER text (Section 9.3, Page 49) says "Aquatic habitat types present on and in the area of the Humboldt site include streams, rivers, lakes, and ponds." Identify the lakes on or near the site.	Open, provide written response. Answer mentions 5 ponds. But all have been filled-in via mine reclamation program. Written response submitted in July 21, 2010 letter from applicant (ML102070070).
AE-21	AE(2)-17	9.3	Provide a knowledgeable expert who can discuss the conceptual route for the CWS pipeline for the Humboldt Site and the potential effects on aquatic resources. Discuss the approximate location where the pipe would intersect the Susquehanna River. It appears that this would be in Columbia County. Would building the system affect any Federally listed or Pennsylvania listed	Open. Provide written response. Written response submitted in July 9, 2010 letter from applicant

			<p>or ranked species in Columbia County? Also, Black Creek is a tributary of Nescopeck Creek, which is degraded by acid mine drainage (AMD). Discuss the implications of locating the CWS intake/discharge for Humboldt within the potential plume from Nescopeck Creek.</p> <p>Added (provided to PPL at audit). The river at the conceptual intake/discharge location for Humboldt is described as a “<u>narrow channel</u>” where the river is deep, fast, and has turbulent flow (Instream Flow Incremental Methodology [IFIM] Study Plan). What is the evidence for the assumption that the potential effects of operation (e.g., the discharge plume, impingement/entrainment) in this stretch of river <u>would be similar to those at BBNPP</u> (p.48), which is on a hydrodynamically different stretch of the river?</p>	<p>(ML101930519).</p> <p>Open.</p>
AE-22	AE(2)-18	9.3	<p>Provide a knowledgeable expert who can identify the existing substation that is mentioned as the terminus of the conceptual transmission line route described on page 9-54. Would the route cross sensitive parts of Nescopeck Creek?</p>	<p>Open. Provide the written response. Substation is Susquehanna Substation owned by PPL. Would cross Little Nescopeck and Black Creek. Written response submitted in July 9, 2010 letter from applicant (ML101930519).</p>
AE-23	AE(2)-19	9.3	<p>Provide a knowledgeable expert who can discuss the conceptual location of the CWS intake/discharge system for a new nuclear plant at Seedco. The location is described as being at about where Shamokin Creek discharges into the Susquehanna River (below Shamokin Dam). The Sunbury Steam Electric Station is located on the Susquehanna River on the opposite shore and slightly downriver from Shamokin Creek, which is affected by AMD. The plant uses water from the Susquehanna River for cooling. Provide an expert to discuss the water withdrawal from/discharge into the Susquehanna River by the Sunbury coal plant and the potential ecological effects of the combined withdrawal/discharges of the two plants on the River, especially at low water periods. In particular, would the combined withdrawals affect important species (e.g., smallmouth bass) in the area? The U.S. Geological Survey (USGS) monitored smallmouth bass about 1.25 mi downriver from the area and found incidence of <i>Flavobacterium</i> infections in fish there in 2008. The infection is often attributed to stress from low dissolved oxygen conditions. Would the combined plant activities contribute to low dissolved oxygen? Would an intake/discharge system in the Susquehanna River near the mouth of Shamokin Creek affect AMD conditions in the river? Are</p>	<p>Open. Provide written response. Written response submitted in July 9, 2010 letter from applicant (ML101930519).</p>

			entrainment/impingement data for the Sunbury Steam Electric Station available?	
AE-24	AE(2)-20	9.3	Provide a knowledgeable expert who can discuss the aquatic Federally listed or Pennsylvania listed or ranked species considered for the Seedco site. The Susquehanna River is the boundary between Northumberland and Snyder Counties. Should T&E or ranked species from Snyder County be included in the Seedco evaluation?	Resolved. Boundary is on opposite bank; therefore don't need to consider Snyder County.
AE-25	AE(2)-21	9.3	Provide a knowledgeable expert who can discuss the onsite aquatic resources for Seedco. Figure 9.3-33 shows two small ponds on the site; Table 9.3-13 mentions only one pond onsite. How many ponds are on the site? Are the ponds impaired by AMD or other pollution sources? The ER text (Section 9.3, Page 63) says "Aquatic habitat types present on and in the area of the Seedco site include streams, rivers, lakes, and ponds." Identify the lakes on or near the site.	Open. Provide written response. Two ponds onsite; listed together in Table. Ponds are 0.2 ac and 0.5 ac. Five man-made impoundments near site. Written response submitted in July 9, 2010 letter from applicant (ML101930519).
AE-26	AE(2)-22	9.3	Provide a knowledgeable expert who can discuss the condition of Shamokin Creek and Quaker Run at the Seedco site. The Seedco site is bounded by two key AMDs into Shamokin Creek (Excelsior Mine Strip Pit Overflow Discharge (SR12) upstream is one of the largest in the watershed; Corbin Water Level Drift Discharge (SR15) along western border of site). Both may be candidates for restoration. Would building and operating the proposed plant exacerbate conditions in the creek or be affected by conditions in the creek? Would the proposed plant interfere with restoration efforts in this section of the creek? Quaker Run, which abuts the northern boundary of the site, is adversely affected by AMD. Would building and operating a plant at Seedco affect (or be affected by) Quaker Run?	Open. Provide written response. Written response submitted in July 9, 2010 letter from applicant (ML101930519).
AE-27	AE(2)-23	9.3	Provide a knowledgeable expert who can discuss the conceptual route for the transmission line from the Seedco site. The ER text (Section 9.3, Pages 68-69) describes a conceptual route, but does not mention a specific location. The route seems to lead towards the proposed Catawissa Substation that is mentioned for the Montour site. Is this the possible end point of the transmission line? Regardless, the route must go through Columbia County. Would building the transmission line affect any Federally listed or Pennsylvania listed or ranked species or other aquatic resources in Columbia County? It appears that a conceptual route would cross two branches of Roaring Creek and at least one of its tributaries (Mugser Run). Describe the potential effects on these regulated or stocked trout streams.	Open. Provide written response. Written response submitted in July 9, 2010 letter from applicant (ML101930519).

AE-28	AE 9.3-5	9.3.2.1	Provide an expert who can discuss the Criterion 16 wetlands scoring for Bell Bend now that wetlands connected to Walker Run will be designated as Exceptional Value wetlands. How would this designation affect the scoring for Bell Bend and the decision that there is no environmentally preferred site?	Resolved. Bell Bend rescored. Score about 10 points lower but similar to alternative sites and within 1 Standard Deviation of overall mean.
AE-29	AE 9.3-6	9.3.2.3	Provide an expert who can discuss the State-listed aquatic plants in Luzerne County. No aquatic plants are discussed in the text section.	Resolved. List discussed with subject matter expert. The PA Natural Heritage Threatened and Endangered Species list was used in discussions with the applicant. Discussions focused on plants that potentially could be affected by the proposed action.
AE-30	AE 9.3-7	9.3.2.3	Provide an expert who can discuss the freshwater mussels in Luzerne County. Table 9.3-3 and the Humboldt discussion list alewife floater as one of the mussels of concern, but do not list the green floater, which is discussed as a species of concern for Bell Bend in Section 2.4.	Open. Provide written response about potential occurrence of green floater near CWS intake for Humboldt. Mussels may not occur in area because of lower water quality from urban development and AMD. Provide data to support Water Quality statement (Total Maximum Daily Load).
AE-31	AE 9.3-8	9.3.2.4	Provide an expert who can discuss the freshwater mussels in Northumberland County. Would either of the two mussels discussed occur in the Susquehanna River at the location of the CWS intake/discharge system?	Resolved. Response gives locations of Yellow Lamp Mussel in county. No recent records in Pennsylvania Natural Heritage Program database. Checked database provided.
ALT-			Alternatives	
ALT-1	ALT 9.3-1	9.3	Provide an expert that can discuss the scoring rationale (as done in Appendix C) for all sites scored in Table 6.1 (e.g., Bainbridge, Conowingo, Martin's Creek.)	Open. Characterization of the basis for all 9 Candidate sites scoring will be provided.
ALT-2	ALT 9.3-2	9.3	Provide an expert who can clarify why, out of 8,301 possible sites, only one greenfield site was evaluated. (page 7).	Resolved: Screening process utilized available databases which did not include greenfield sites.

ALT-3	ALT 9.3-3	9.3	Provide an expert who can discuss why, on page 18, the Beiler site on Sassafras Creek was eliminated for not meeting the 7Q-10. The SRBC's letter of March 1, 2010 states that " <i>consumptive water use in the Middle Susquehanna Subbasin currently exceeds 10 percent of the Q7-10 flow,</i> " indicating that Bell Bend effectively has the same condition as Beiler Site on Sassafras Creek.	Resolved. Beiler was excluded based on the 15 mi water pipeline exclusionary criteria (applied "as the crow flies"). Beiler was not eliminated for not meeting the 7Q-10.
ALT-4	ALT 9.3-4	9.3	Provide an expert who can summarize the steps used by the Delphi panel in evaluating sites, including the scoring, weighting, etc.	Open. Response to be formally submitted. Written response submitted in July 9, 2010 letter from applicant (ML101930519).
ALT-5	ALT 9.3-5	9.3	Provide an expert who can explain why the weights used in Tables 6-1 and 7-1 differ from those listed on page D-1. For example, the weight used for criterion 16 is 8.33 on page 28, but the wetland weight on page D-1 is 8.0. Appendix D does not indicate that averaging was used for weighting.	Open. Tables 6-1 and 7-1 to be revised to match D-1 weights. Written response submitted in August 13, 2010 letter from applicant (ML102310237).
ALT-6	ALT 9.3-6	9.3	Provide an expert who can clarify the discussion on Page 26, in particular, if the Bell Bend site were rated greater than one standard deviation lower than another site, would PPL consider it environmentally preferable and use commercial criteria in the overall evaluation? For example, if Criterion 16c High Quality Wetlands, p. 26, is changed from the current score of 5 for the Bell Bend site to a 1 based on State Designation of Exceptional Value (EV) wetlands, the net effect on the score would be a change to 360.18, which is greater than one standard deviation less than Humboldt's score.	Open. Alternative Site Evaluation Report (ASER) to be revised to address numerical errors and clarify use of standard deviation in assessing scoring results. Written response submitted in August 13, 2010 letter from applicant (ML102310237).
ALT-7	ALT 9.3-7	9.3	Provide an expert who can discuss the scoring on Page 27 for criterion 2c. In light of SRBC's March 1, 2010 determination that sufficient water will not be available at all times from the Susquehanna River without mitigating low flows, please provide an expert to discuss the score of 5 for Bell Bend for criterion 2c, and address whether the scoring for other alternative sites that depend upon the Susquehanna River should have their scores revised for this criterion.	Open. ASER & ER to be revised to address revision of Criteria 2c scoring. Same response for H-5.
ALT-8	ALT 9.3-8	9.3	Please make available Table 7-1 as an excel spreadsheet so that the effects of alternative scoring can be more easily assessed.	Resolved. Agreed that this info need is resolved through discussion of other specific info needs answers.
ALT-9	ALT 9.3-9	9.3	Provide an expert who can discuss Appendix A Criteria 2b and 4b. These criteria for Pennsylvania are essentially using the same scoring basis for different ranking criteria. Please clarify why this is not double counting/scoring the same site attributes.	Resolved. Discussions with applicant explain that the criteria 2b and 4b have two different purposes. One of the

				criteria is based on the 4 different states in the ROI and water quality standards in those states.
ALT-10	ALT 9.3-10	9.3	Provide an expert who can discuss Page A-4 Criterion 5d. This "desirable" proximity to population centers appears counter to all other health- and safety-related avoidance criteria for populations. For example, criterion 13a scores 5 for being >20 miles from 25,000 people. Even though criterion 13 is weighted almost twice criterion 5, favoring population close to the site would appear to reduce the weight/importance given to criterion 13. Please provide an expert to discuss why this element of the criterion is not inconsistent with the intent (e.g., health & safety) of the exclusionary criterion for population density on page 9 and in 10 CFR Part 100 (excludes sites with a population greater than 25,000 within a distance of 1.33 times the LPZ).	Resolved. Discussions with applicant show that weighting factors adequately prioritize avoidance over proximity. There is a tradeoff between Criterion 13a (distance to population centers) and 5d (housing and necessities). Criterion 5d considers the distance between the work site and housing/shopping/entertainment in order to attract the work force. The difference in the weighting factors between Criterion 13 (weight of 9) and Criterion 5 (weight of 5.5) account for this.
ALT-11	ALT 9.3-11	9.3	Provide an expert who can discuss Page A-4 Criterion 5d, specifically what is included in "vacant housing." For example, does this include houses for sale, rental houses, and apartments? Most construction workers are only temporary and generally rely on rental availability.	Resolved. Discussions with applicant show that vacant housing was defined using U.S. Census Bureau definitions for housing units.
ALT-12	ALT 9.3-12	9.3	Provide an expert who can discuss Appendix A, Criterion 5e. Given the workforce size, please provide an expert to discuss why it takes more than 1,000 schools to meet the need, why the score is a 5 for greater than 1000 schools, and why only 250 schools are not enough. Construction workers seldom bring families and the operational workforce would not generate such demand. The presence or absence of schools does not necessarily equate to the capacity of the existing schools to absorb new students. The highest demand would be upon the schools nearest the site for operational workers' children. Why was this not the focus of this criterion?	Open. Provide rationale for the 1000 schools criteria and how it correlates to the construction workforce size and potential number of children moving into area with construction workforce.
ALT-13	ALT 9.3-13	9.3	Provide an expert who can discuss Appendix A, Criterion 11a. Please provide an expert to discuss the rationale behind the population element in score 1, population within 10 miles greater than 2601 people/mi ² , why other scores for this criterion have no population element, and the basis for the 2601. Population greater than 300 ppsm is an exclusionary criterion (on p. 9) within	Resolved through discussions. Basis for 2601 is the conversion from TRAGIS Computer Code (1000 persons per km ² is 2601

			20 miles of the site. Please provide an expert to discuss whether the evaluators used densities in census blocks crossed by the routes as the actual measure of this criterion.	ppsm).
ALT-14	ALT 9.3-14	9.3	Provide an expert who can discuss Appendix A, page A-10, Criterion 11a. Please provide an expert to explain/clarify why the scoring basis is only evaluating "spent" fuel when the title says Nuclear Fuel and Wastes. Does the criterion include new fuel or is the title incorrect and only spent fuel is intended? If the latter, why is fresh fuel not a consideration?	Open. Provide written response. Written response submitted in July 9, 2010 letter from applicant (ML101930519).
ALT-15	ALT 9.3-15	9.3	Provide an expert who can discuss Page A-10, Criterion 12a. Score 2 includes Point of Interconnection <i>greater than or equal to 30 miles</i> . Transmission lines greater than 30 miles is an exclusionary criterion on page 9.	Open. Resolved if ASER is corrected in future.
ALT-16	ALT 9.3-16	9.3	Provide an expert who can discuss Appendix A, Criterion 13a, Scoring Basis #1 which reads " <i>One or more population centers within 5 mi.</i> ". Specifically, provide an expert who can discuss why this criterion is not inconsistent with the application of the population density exclusionary criterion of 300 ppsm (from the EPRI Siting Guide: Site Selection and Evaluation Criteria for an Early Site Permit Application, and cited in the application in the Alternative Site Evaluation Rev 1, pg. 9).	Resolved. Through discussions with applicant, the 2 criteria were clarified. A score of 1 did not occur in the ranking/scoring report.
ALT-17	ALT 9.3-17	9.3	Provide an expert who can discuss Appendix A, Criterion 14b. Please clarify the apparent redundancy in score 2 regarding need for refurbishment.	Open. ASER to be corrected to eliminate redundancy. Written response submitted in August 13, 2010 letter from applicant (ML102310237).
ALT-18	ALT 9.3-18	9.3	Provide an expert who can discuss Appendix A, Criterion 16c. Because Exceptional Value wetlands cannot be disturbed in Pennsylvania ... "unless in the health and safety interest of its citizens" ... why is this not an exclusionary criterion?	Resolved. See Title 25 PA Code for legal EV definitions.
ALT-19	ALT 9.3-19	9.3	Provide an expert who can discuss Page C-1, Criterion 1e. Because Bell Bend, with greater than 130 ft of relief, scored 3.00 (page C-17) due to limited cut and fill (which is not included in the scoring rationale, p.A-1), please address the relative amount of cut and fill anticipated at Humboldt to warrant a score of 1.44 with a relief of >100 ft.	Open. Provide written response. Written response submitted in July 9, 2010 letter from applicant (ML101930519).
ALT-20	ALT 9.3-20	9.3	Provide an expert who can discuss Appendix C, page C-7. Criterion 1e attributes "steep" topography to the Montour site. The Montour site visited during the initial alternative site tour did not appear to have any steep terrain.	Open. Applicant will look into response. Apparent Delphi scoring discrepancy between Bell Bend & Montour.
ALT-21	ALT 9.3-21	9.3	Provide an expert who can discuss Appendix C, page C-8. Criterion 3b indicates that approximately 10% of the site is in a floodplain. Please identify the waterbody that is generating the floodplain.	Resolved. Nov 25, 2009 revised ER section 9.3 Figure 9.3-21 provides info.

ALT-22	ALT 9.3-22	9.3	Provide an expert who can discuss Appendix C, Page C-17, Criterion 1a. Given the ongoing process to minimize wetland impacts, please provide an expert to discuss the conclusion: <i>1a -The proposed plant layout plan can be accommodated on the site as shown in the BBNPP Environmental Report (ER) (UniStar Nuclear Services, LLC [UniStar Nuclear], 2009a) with no changes needed in the layout and no restrictions for construction work areas.</i> Please provide an expert to discuss the score for ranking criterion "1a".	Resolved. Discussions with applicant show that the plot plan changes occurred after the site evaluation report was submitted, even if the score was changed for Bell Bend there wouldn't be a change in the overall ranking.
ALT-23	ALT 9.3-23	9.3	Provide an expert who can discuss Appendix C, Page C-17, Criterion 1e. Given the ongoing negotiations to minimize wetland impacts, please provide an expert to discuss the conclusion: <i>There is approximately 130 ft of relief across the site. However, the plot plan can be accommodated with limited cut and fill activities.</i> The scoring basis (page A-1) would score >100 ft of relief a score of 1, and there is no provision in a score of 3 for "limited cut and fill", and the relocation of the plant site would involve much more cut and fill. Please provide an expert to discuss the score for ranking criterion "1e".	Open. Applicant will look into response concurrent with ALT-20.
ALT-24	ALT 9.3-24	9.3	Provide an expert who can discuss Appendix C, page C-21, Criterion 16c for Bell Bend, in light of the decision by the state of Pennsylvania to designate Walker run as a wild trout stream of the State and the associated wetlands as EV.	Open, applicant will provide results of sensitivity analysis. Changing the score based on the EV wetlands criteria would not change the ranking of Bell Bend, but will change the score.
ALT-25	ALT 9.3-25	9.3	Provide an expert who can discuss alternative water sources to augment low flow conditions in the Susquehanna River for plant operations at the Bell Bend, Humboldt, and Seedco sites. Please provide an expert who can discuss the direct and indirect impacts of each alternative water source.	Open pending resolution with Susquehanna River Basin Commission (SRBC).
ALT-26	ALT 9.3-26	9.3	Provide an expert who can confirm that the alternative methods of heat dissipation provided to the Susquehanna River Basin Commission (SRBC) are consistent with those identified in the Environmental Report (ER).	Resolved. Confirmed that the ER discusses the SRBC options identified.
ALT-27	ALT 9.3-27	9.3	Provide an expert who can discuss (a) the cost of consumptive water use and (b) the environmental impacts of blowdown from all six heat-dissipation alternatives, as mentioned in the SRBC March 1, 2010 letter to PPL (pp. 2 and 3).	Open pending resolution with SRBC.
ALT-28	ALT 9.3-28	9.3	Provide an expert who can discuss increased evaporation caused by thermal effects of blowdown discharge from Bell Bend, as requested by SRBC.	Open. Resolved with submittal of info needs write-up and calculation sheets. Written response submitted in July 9, 2010 letter from applicant (ML101930519).

ALT-29	ALT 9.3-29	9.3	Provide an expert who can discuss the water source from which construction water would be trucked, the amount needed, its availability, and the truck traffic generated in terms of daily trips and duration. Provide an expert who can discuss the effects of such shipments on the level-of-service (LOS) of route(s) that would be used.	Open. Applicant to identify water sources and transportation.
ALT-30	ALT 9.3-30	9.3	Provide an expert who can discuss the SRBC March 1, 2010 letter to PPL. Would the issues raised for the Susquehanna River conditions at the Bell Bend site apply to any of the alternatives sites that would also use Susquehanna River water?	Resolved through discussions with applicant and site visits. The issues raised for the Susquehanna River conditions at the Bell Bend site would also apply to any of the alternative sites that would also use Susquehanna River water. The SRBC March 1, 2010 letter to PPL is available in ADAMS (Accession No. ML100620927) and concerns the applications and supporting documents submitted by PPL to the SRBC for groundwater withdrawal, surface withdrawal from the Susquehanna River, and consumptive water use.
ALT-31	ALT 9.3-31	9.3	Provide an expert who can discuss the PPL wetlands delineation report. Will the scoring of the Bell Bend site relative to wetlands be revised if the wetlands delineation report is changed?	Open, applicant will provide results of sensitivity analysis. See ALT-24.
ALT-32	ALT 9.3-32	9.3	Provide an expert who can discuss the weighting in the site screening methodology for water availability, and whether PPL plans to modify its weighting as requested by SRBC in its March 1, 2009 letter to PPL.	Open. Will be in revised ASER and ER Table 9.3-8. See ALT -7.
CR-			Cultural Resources	
CR-1	CR(2)-1	9.3	Provide a knowledgeable expert to discuss results of phase II National Register of Historic Places (NRHP) evaluations of archaeological sites and historic architectural resources within the Bell Bend physical area of potential effect (APE) and visual APE. Which of these properties were determined eligible for the NRHP? What plans are being developed to avoid or mitigate adverse impacts?	Resolved through discussion. No additional information required at this time. Additional information will be provided by Applicant as cultural resource

				investigations are completed and consultation with State Historic Preservation Office (SHPO) on management proceeds.
CR-2	CR(2)-2	9.3	Provide a knowledgeable expert to discuss the November 2009 ER revision (section 9.3) as it pertains to cultural resource impact assessments for the Montour site, Humboldt site, and Seedco site. How were cultural resources identified?	Resolved. NRC team explained need to acquire cultural resource data from PA-SHPO, which would include both NRHP listed and eligible cultural resources. Because the NRC team has acquired this data from the PA-SHPO, no additional information required at this time.
CR-3	CR(2)-3	9.3	Provide a knowledgeable expert to discuss the proposed water pipelines that would be required to provide water to the alternative sites and return discharges to the rivers. How extensive will ground disturbing activities be and to what depths? Will there be permanent above-ground buildings associated with the water pipelines?	Open. Additional information is required. Applicant should provide information on known cultural resources within a study corridor for the proposed pipeline route(s) to determine potential impacts to NRHP listed/eligible sites. Data is available at the PA-SHPO. Should include both archaeological sites and historic architectural resources.
CR-4	CR(2)-4	9.3	Provide a knowledgeable expert to discuss the proposed transmission lines that would be required to connect the alternative sites to the electrical power grid. How extensive will ground disturbing activities be and to what depths? How high will the power lines and support towers be? Will there be other permanent above-ground buildings associated with the transmission lines?	Open. Additional information is required. Applicant should provide information on known cultural resources within a study corridor for the proposed transmission line route(s) to determine potential impacts to NRHP listed/eligible sites. Data is available at the PA-SHPO. Should include both archaeological sites and historic architectural

				resources.
CR-5	CR(2)-5	9.3	Provide a knowledgeable expert who can show the cultural resource SME the locations of previously reported archaeological sites, historic structures, and historic properties at or near the Montour site. These resources include: <input type="checkbox"/> NRHP listed Keefer Covered Bridge No. 7; <input type="checkbox"/> Five archaeological sites of undetermined NRHP eligibility within the physical APE of the Montour site along Chillisquaque Creek (36MO32, 36MO31, 36MO65, 36MO30, and 36MO28); and <input type="checkbox"/> The NRHP eligible Exchange Historic District located 1.7 mi (2.7 km) northwest of the Montour project area.	Resolved through alternative site visits and discussion. Cultural resource data has been acquired by NRC team from the PA-SHPO. No additional data from applicant is required.
CR-6	CR(2)-6	9.3	Provide a knowledgeable expert who can show the cultural resource SME the locations of previously reported archaeological sites, historic structures, and historic properties at or near the Humboldt site. These resources include: <input type="checkbox"/> NRHP listed Markle Bank and Trust Company in Hazleton City; <input type="checkbox"/> NRHP listed St. Gabriel's Catholic Parish Complex; <input type="checkbox"/> City of Hazleton (several NRHP eligible historic structures and districts are located in Hazleton); <input type="checkbox"/> Potential NRHP eligible Lehigh Valley Railroad.	Resolved through alternative site visits and discussion. Cultural resource data has been acquired by NRC team from the PA-SHPO. No additional data from applicant is required.
CR-7	CR(2)-7	9.3	Provide a knowledgeable expert who can show the cultural resource SME the locations of previously reported archaeological sites, historic structures, and historic properties at or near the Seedco site. These resources include: <input type="checkbox"/> NRHP listed Richards Covered Bridge; <input type="checkbox"/> NRHP listed Kreigbaum Covered Bridge; <input type="checkbox"/> NRHP eligible Buck Ridge Mine & Ranshaw Village; <input type="checkbox"/> Potential NRHP eligible Northern Central Railroad <input type="checkbox"/> Potential NRHP eligible Philadelphia & Reading Railroad; <input type="checkbox"/> NRHP eligible Saint Mary's Roman Catholic School; <input type="checkbox"/> NRHP eligible Shamokin Historic District; <input type="checkbox"/> Town of Shamokin (several NRHP eligible historic properties are located in Shamokin); and <input type="checkbox"/> Mount Carmel (several NRHP eligible historic properties located in Mount Carmel).	Resolved through alternative site visits and discussion. Cultural resource data has been acquired by NRC team from the PA-SHPO. No additional data from applicant is required.
CR-8	USACE-5	9.3.2	Provide an expert who can discuss the screening criteria for criterion 7 (Historic & Cultural Resources). It appears that there is no scoring basis for a	The screening criteria did include both historic and

			resource if it is located on site. It also appears that neither sub-criterion 7a. (Historic Buildings, Structures, Objects & Sites) nor sub-criterion 7b (Historic Districts) included potential impacts to archeological sites. The Corps, in its review, requires an analysis of both historic and archeological resources.	archeological resources, however the screening criteria only focused on National Register of Historic Places (NRHP) (as referenced under ASER Appendix A – <i>Environmental Scoring Criteria Basis in the Alternative Site Evaluation Report</i>) and did not include ‘potentially eligible’ sites. As with CR-9 (below), the Corps will send a letter to NRC and the applicant citing certain aspects of the ranking/scoring study that should be modified for the Corps review.
CR-9	USACE-6	9.3.2.1	Provide an expert who can discuss the scoring for criterion 7 (Historic & Cultural Resources) for the Bell Bend site. Based on preliminary results of GAI’s Phase II National Register evaluations, two of the seven archeological sites (36LU281 & 36LU285) are recommended as eligible for listing on the NRHP. These sites are within the owner controlled area. As such, the scoring should change. How would this change affect the overall scoring of Bell Bend and the decision that there is no environmentally preferred site?	Resolved. Corps will send letter to NRC/applicant citing ranking/scoring study.
CR-10	USACE-7	9.3.2.1	Provide an expert who can discuss the historic and archeological impacts on the Bell Bend site. In Section 5.1.3 of Part 3 of the Environmental Report, it states “Based on results of cultural resources investigations conducted to date, it is likely that there will be adverse impacts to cultural resources from construction.”	Open, pending acceptance and clearance of SHPO review.
G-			General	
G-1	G(2)-1	9.3	Please make available any references (electronic format if available) not included in previous NRC submittals.	Open. The final list of references required will be developed through the course of the audit.
G-2	G(2)-2	9.3	Provide a knowledgeable expert to discuss other nearby industrial facilities, other nuclear facilities in the region of each alternative site, or other Federal projects existing in the region that might be needed for the applicant to construct and operate the proposed facility.	Open. Applicant will evaluate whether other facilities or projects will be needed to construct and operate projects at the alternative sites, and provide information on those projects, if found.

G-3	G(2)-3	9.3	Provide a knowledgeable expert to discuss the geographic areas to be considered in evaluating cumulative impacts at the alternative sites and reasonably foreseeable major projects within these geographic areas.	Open. Applicant will continue to develop a table of other projects that could contribute to cumulative impacts and include appropriate references. Open pending review of revised ER sections.
G-4	G(2)-4	9.3	Provide a knowledgeable expert to discuss ER Figures showing the site boundaries, owner controlled area and land to be cleared, and acreage impacted.	Open. Applicant will provide definitions of the site boundary terms.
G-5	G(2)-5	9.3	Provide a knowledgeable expert to discuss pre-construction and construction impacts (10 CFR 51.45(c)).	NRC team determined this information need was not related to the alternative sites.
H-			Hydrology	
H-1	H(2)-1	9.3	Provide a knowledgeable expert who can discuss impacted surface waters (i.e., those waters that appear in a 303(d) list) that are within the region of interest of each of the alternative sites and the Bell Bend site, either upstream or downstream of each site.	Open. Request applicant to provide references to Water Quality Monitoring and Assessment reports on the Pennsylvania Department of Environmental Protection (PADEP) and U.S. Environmental Protection Agency (EPA) websites that cover preferred and alternative sites.
H-2	H(2)-2	9.3	Provide a knowledgeable expert who can discuss the likely sources of water for construction at each alternative site. This should include the availability of municipal or private water supplies and the possible use of groundwater.	Open. See response to ALT 9.3-29.
H-3	H(2)-3	9.3	Provide a knowledgeable expert who can discuss the availability of municipal or private sanitary water treatment for each alternative site.	Resolved through discussions. Written response submitted in July 21, 2010 letter from applicant (ML102070070).
H-4	H(2)-4	9.3	Provide a knowledgeable expert who can discuss the feasibility and economics of dry and hybrid cooling towers at the Bell Bend site, taking into account the cost and availability of makeup water.	Open pending review of revised ER sections. Applicant is preparing a report on economic analysis of alternative cooling systems, including dry cooling towers. Report is not yet available, but results will be included in a revision to the ER. Written

				response submitted in July 21, 2010 letter from applicant (ML102070070).
H-5	H 9.3-1	9.3.2	Provide an expert who can discuss the screening criteria for consumptive water use at the preferred and alternative sites. The analysis uses a criterion based on the withdrawal of 50 Mgd and compares it to the 7Q-10 flow rate at each site. The consumptive use for the Bell Bend site is stated in the ER to be approximately 28 Mgd. Please provide an expert to discuss the use of 50 Mgd total withdrawal and how it relates to the SRBC interim consumptive use criterion for bypass flow based on 7Q-10.	Open, pending receipt of revised ER and ASER. Applicant responded in ALT-7.
H-6	H 9.3-2	9.3.2	Provide an expert who can discuss the scoring of the water usage in the site ranking criteria. Because the proposed Bell Bend site and each of the alternative sites is associated with a warm water fishery, please provide an expert to discuss whether a different bypass flow condition, such as 20% of the average daily flow, would be required, as suggested in SRBC Publication 253, "Consumptive Use Mitigation Plan."	Open pending resolution with SRBC. Response also addressed by ALT-25.
H-7	H 9.3-3	9.3.2	Provide an expert who can discuss the availability of water in the Middle Susquehanna basin. SRBC states that no further consumptive use from the Middle Susquehanna basin, of which the Bell Bend site would be a part, would be allowed. Please provide an expert to discuss Susquehanna River water withdrawal at alternative sites including consumptive use, and how that relates to SRBC withdrawal limits. Please provide an expert to discuss water availability at each site during low-flow periods, and any low-flow augmentation available for the alternate sites.	Open pending resolution with SRBC. Applicant recognizes the potential need for sources of water for bypass flow at the preferred and alternative sites. Provided up-to-date information of consumptive water use at all sites, and discussed potential low-flow augmentation. Outcome of this concern relies on completion of IFIM study, and finalization of plans for allocation of augmentation water.
H-8	H 9.3-4	9.3.2	Provide an expert who can discuss low-flow conditions in the Middle Susquehanna basin. The ER indicates (Section 9.3 and Appendix C- Environmental Scoring Justification) that the 7Q-10 flows were calculated from a 10-year record (July 1999–July 2009). If this is the case, then the 7Q-10 flows should be re-calculated using statistically based procedures and the period of record available at each site.	Open, provide written response. Applicant re-calculated 7Q10 flows using period of record and a statistical analysis as requested. See response to H-5.
H-9	H 9.3-5	9.3.2	Provide an expert who can discuss groundwater at all alternative sites. Please make available a list of nearby groundwater and surface-water users who could be affected directly by plant construction and operation.	Open, provide written response. Applicant has compiled a table of groundwater users near and

				on the preferred and alternative sites. Groundwater withdrawals at the Bell Bend site for construction should be largely diminished because of re-design of site, and less or no dependence on temporary and permanent cutoff walls during construction and operation. Surface water users within 5 miles of each site were identified, but applicant did not address surface water users near the intake and discharge locations for any of the alternative sites. Written response submitted in August 13, 2010 letter from applicant (ML102310237).
H-10	USACE-3	9.3.2.1	Provide an expert who can discuss the scoring for criterion 2c. (Water Availability) for the Bell Bend site. The scoring uses a Q7-10 calculated over the last 10 years (1999-2009). However, per the SRBC, the recommended Q7-10 should use the lowest 7-day average flow with a 10% chance of reoccurrence, based on the entire period of record of the referenced gage. If the recommendation by SRBC is followed, then the Q7-10 should be re-calculated for all of the alternative sites as well as the candidate sites.	Open, pending receipt of revised scoring in the revised ASER.
H-11	USACE-4	9.3.2	Provide an expert who can discuss the screening criteria for consumptive water use at the preferred and alternative sites. Consumptive water use was not used as a sub-set of criterion 2 (Hydrology, Water Quality, & Water Availability), however according to the March 1, 2010 letter from the SRBC, the consumptive water use of the Bell Bend site (up to 31 million gallons per day (mgd)) appears to have the potential to adversely impact the Susquehanna River.	Open pending resolution with SRBC.
LU-			Land Use/Transmission Lines	
LU-1	LU(2)-1	9.3	Provide a knowledgeable expert to discuss the possibility of natural gas or significant mineral resources being found underneath the alternative sites.	Open. Resources within 10 or 15 miles will be plotted on figures for each site. Written response submitted in July 21, 2010 letter from applicant (ML102070070).
LU-2	LU(2)-2	9.3	Provide a knowledgeable expert to discuss transmission line routes for the alternative sites, who can discuss whether transmission corridors are	Open, data tables of acreages by land use categories for

			primarily agricultural or forest, and who can further outline transmission design details and/or a copy of the referenced PJM guidelines.	transmission lines and pipelines to be provided.
LU-3	LU(2)-3	9.3	Provide a knowledgeable expert to discuss plans for other development at the Humboldt site.	Open. Applicant will resolve with response to G-3 and submit in ER revision.
LU-4	LU(2)-4	9.3	Provide a knowledgeable expert who can provide further information on borrow pits and volumes of borrow material anticipated to be needed.	Open. Applicant will submit response and include identification of offsite location for disposal of excess materials. Written response submitted in July 9, 2010 letter from applicant (ML101930519).
LU-5	LU(2)-5	9.3	Provide a knowledgeable expert who can provide further information on transmission line building techniques and the associated impact on land use, such as any anticipated short-term or long-term visual aesthetic impacts related to changes in transmission facilities and upgrades and any impact on land use.	Open. This will be addressed under SE-7 and LU- 14 & 15 responses.
LU-6	LU(2)-6	9.3	Provide a knowledgeable expert who can confirm whether or not the proposed construction and operation activities will conflict with local land use plans.	Open. Applicant to look for County land use plans and zoning maps covering transmission lines and pipelines. Written response submitted in August 13, 2010 letter from applicant (ML102310237).
LU-7	LU(2)-7	9.3	Provide a knowledgeable expert who can clarify whether or not long-term cumulative impacts to land use in relation to proposed future facility projects and other off-site projects are anticipated, and provide information on preconstruction activities and potential cumulative impacts on land use.	Open. Applicant will resolve with response to G-3 and submit in ER revision.
LU-8	LU(2)-8	9.3	Provide a knowledgeable expert to quantify area of impact to 100-year and 500-year floodplains.	Open. Data covering transmission lines and pipelines to be provided.
LU-9	LU(2)-9	9.3	Provide a knowledgeable expert to quantify area of prime and unique farmland impacts.	Open. Data covering transmission lines and pipelines to be provided.
LU-10	USACE-8	9.3.2.3	CAN Do, Inc. of Hazleton, PA is the current owner of the Humboldt alternative site. CAN Do., Inc has submitted permit applications to the PA DEP Northeast Regional Office and the U.S. Army Corps of Engineers – Baltimore District for authorizations to develop this site into an industrial park. Provide an expert who can discuss this issue and document how/ why this site was chosen as an alternative site if it is currently being proposed as an industrial	Resolved, but if site is actively being cleared/developed during the time that the Draft EIS is being written, then alternatives analysis needs to be re-analyzed. The applicant

			subdivision.	was not aware that this site was actively being pursued by the current owner to be developed; the ranking/scoring of the Humboldt site did not include the potential of this site to be developed by the current owner. The Corps informed the applicant that under current permit application CENAB-OP-RPA-2010-00535 Humboldt Industrial Park Northwest, the current owner was actively pursuing permits to develop this site. As such, the applicant agreed that if the Humboldt site has received Corps permits and is actively being developed during the time that the Draft EIS is being written, then the applicant will revise/re-analyze the alternative ranking study.
LU-11	USACE-9	9.3.2	As provided in Table 9.3-12 – Comparison of Wetland and Waterway Impacts: BBNPP vs. Alternative Sites, provide an expert who can discuss the minimum width ROW requirements for the water line that would need to be constructed at the alternative sites. It is unclear why a water line would require a 120-foot ROW for the installation of two new 60” pipes. The Corps would view this ROW width as excessive and would require a much smaller width. As such, these estimations of impact should be re-calculated.	Open, pending receipt of documentation that ROW will be reduced (down to 80-foot ROW) in sensitive areas including wetlands/waters.
LU-12	USACE-10	9.3.2.2	As provided in Table 9.3-12 – Comparison of Wetland and Waterway Impacts: BBNPP vs. Alternative Sites, provide an expert who can discuss the wetland and stream impacts for the new water line ROW at the Montour site. The Corps is aware that an established 12-mile ROW to the West Branch Susquehanna River already exists as part of the coal fired generation plant at Montour. This PPL owned, 12-mile ROW was recently established for the effluent associated with the newly installed scrubbers. Why weren't the estimated wetland and/or stream impacts based on using this established ROW?	Open, pending receipt of proper documentation from applicant that existing ROW cannot be used and/or expanded. Written response submitted in July 21, 2010 letter from applicant (ML102070070).

LU-13	USACE-11	9.3.2	As provided in Table 9.3-12 – Comparison of Wetland and Waterway Impacts: BBNPP vs. Alternative Sites, provide an expert who can discuss the minimum width ROW requirements for the transmission lines that would need to be constructed at the alternative sites. It is unclear why a transmission line would require a 300-ft ROW to accommodate the EPR. The required ROW for the Susquehanna-Roseland project (the transmission line that will accommodate the EPR at the Bell Bend site) will be a maximum of 200 feet. For the Susquehanna-Roseland project, PPL Electric Utilities' Vegetation Management Plan recognizes a Wire Security Zone (WSZ) – 17 feet from the lines – that must be maintained; the remaining ROW will allow vegetation re-growth. As such, the Corps would view the 300 foot ROW width as excessive and would require a much smaller width. As such, these estimations of impact should be recalculated.	Open, pending submittal of a sensitivity analysis by applicant.
LU-14	USACE-12	9.3.2	As provided in Table 9.3-12 – Comparison of Wetland and Waterway Impacts: BBNPP vs. Alternative Sites, provide an expert who can discuss the wetland and stream impacts for the transmission line ROW for the alternative sites. The Montour site, for example, has two existing 500 kV lines within the 30-mile radius for possible interconnection – one is 14.3 miles away and the other 20.5 miles. Aerial crossings of wetlands and streams should not be viewed as an impact; as such it is unclear how the impact numbers (6.3 acres of wetlands and 2,587 l.ft. of stream) were calculated for the Montour site. In comparison, the transmission line project for the Bell Bend site (Susquehanna-Roseland) will be approximately 100 miles long with a TOTAL wetland impact of 0.58 acres (this accounts for any and all temporary access).	Open, pending receipt of new calculations, clarifying National Environmental Policy Act vs. 404 impacts. 404 impacts should be dissected by impact type and include temporary, permanent, and habitat conversion acreages. Also provide within response to TE-1.
LU-15	USACE-13	9.3.2	As provided in Table 9.3-7 Summary Comparison of Alternative Sites, provide an expert who can discuss the transmission corridor criterion and provide a rationale for summarizing impacts as “small to moderate” for the three alternative sites.	Open, pending additional responses of USACE – 11 and USACE -12 and/or pending submittal of revised ER sections.
MET-			Meteorology	
MET-1	MET(2)-1	9.3	Provide a listing of reasonably foreseeable future actions within each county (i.e., Montour, Northumberland, and Luzerne counties) for the proposed alternative sites that cumulatively could impact the air quality attainment status designation of the county as defined in 40 CFR Part 81 Subpart C.	Open. See discussion of G-3.
NRHH-			Nonradiological Human Health	
NRHH-1	NRHH(2)-1	9.3	Provide a knowledgeable expert and make available any supporting documentation to discuss the proximity and types of recreational activities occurring in or near the thermal discharge into the receiving waters.	Open. Provide written response. Written response submitted in July 9, 2010 letter from applicant (ML101930519).

NRHH-2	NRHH(2)-2	9.3	Provide a knowledgeable expert and make available any supporting documentation to discuss the most recent Centers for Disease Control information regarding incidence of infection from etiological agents or diseases of concern in the regions of influence around the alternative sites.	Open. Provide written response. Written response submitted in July 9, 2010 letter from applicant (ML101930519).
SE-			Socioeconomics/Environmental Justice	
SE-1	SE(2)-1	9.3	Provide a knowledgeable expert who can present estimates of sales and income tax generated by the construction workforce at each of the three alternative sites – Montour, Humboldt, and Seedco.	Resolved. Data is in ER for each site's host county. Written response submitted in August 13, 2010 letter from applicant (ML102310237).
SE-2	SE(2)-2	9.3	Provide a knowledgeable expert who can provide data necessary to ensure that sufficient capacity is available to meet the additional demands placed upon public services by the construction workforce, including comparisons of demands for public services generated by the construction work force against capacity and utilization rates for police and fire services, public water systems, wastewater/sewer treatment plants, and educational facilities.	Open. Additional data still needed.
SE-3	SE(2)-3	9.3	Provide a knowledgeable expert who can estimate the property tax impacts of a nuclear power plant at each of the three alternative sites.	Open. Bell Bend specific data provided as proprietary in ER, but SSES data to be provided. Written response submitted in August 13, 2010 letter from applicant (ML102310237).
SE-4	SE(2)-4	9.3	Provide a knowledgeable expert who can estimate where construction-related in-migrants will reside by county for each of the three alternative sites.	Resolved. ER states same percent dispersion of workers would occur for alternative sites.
SE-5	SE(2)-5	9.3	Provide a knowledgeable expert who can provide information regarding the presence of recreational areas that would be impacted by the aesthetics of building a new nuclear plant at each of the three alternative sites.	Open. Applicant will look to identify more sensitive visual receptors for alternative sites and transmission lines. Written response submitted in August 13, 2010 letter from applicant (ML102310237).
SE-6	SE(2)-6	9.3	Provide a knowledgeable expert who can estimate the number of operations workers who would be on-site during the final phase of the construction period for each of the alternative sites.	Resolved. Data for Bell Bend provided in response to RAI 4.4-4, also apply to alternative sites, also in ER Table 4.4-3 and Section 5.8.2.
SE-7	SE(2)-7	9.3	Provide a knowledgeable expert who can discuss the need to build and operate transmission lines at each of the alternative sites, and to assess their aesthetic impacts.	Open. Applicant will look to identify more sensitive visual receptors for alternative sites

				and transmission lines.
SE-8	SE(2)-8	9.3	Provide a knowledgeable expert who can discuss traffic impacts near the alternative sites, including how traffic to and from the plants would impact local commuting patterns, create pinch points, and require upgrades to existing facilities.	Resolved. Qualitative discussion in ER. Quantitative survey data not available or required of applicant.
SE-9	SE(2)-9	9.3	Provide a knowledgeable expert who can estimate the total housing stock and vacancy rate for the 50-mile (80 km) Region of Interest around each site.	Open. Provide written response. Written response submitted in July 21, 2010 letter from applicant (ML102070070).
SE-10	SE(2)-10	9.3	Provide a knowledgeable expert who can verify whether there are precisely the same number of public and private elementary, middle, and high schools (869) located within a 50-mile radius of the Humboldt and Seedco sites, as reported in the ER.	Resolved. ER statement is correct.
SE-11	SE(2)-11	9.3	Provide a knowledgeable expert who can discuss the percentage of black, American Indian and Alaskan Native, Asian, Hawaiian and other Pacific Islander, Hispanic or Latino, two or more races, and all other races residing within the 50- mile region around each of the three alternative sites.	Open. Provide written response. Written response submitted in July 9, 2010 letter from applicant (ML101930519).
STO-			Site and Technical	
STO-1	STO 9.3-1	9.3	Provide an expert who can discuss the preliminary layout of the intake and discharges at the alternate sites. Is the Seedco intake downstream from the confluence of two branches in Sudbury?	Resolved. The proposed intake is below the confluence. The revised ER alternatives text (ER Section 9.3 submitted 11-25-09) states "However, a conceptual route for the water pipelines would follow the Shamokin Creek from the eastern border of the Seedco site for approximately 21 mi (34 km), where it would reach the Susquehanna River." Shamokin Creek enters the Susquehanna River downstream of the town of Sunbury and about 3 miles

				downstream of the confluence of the Susquehanna River and the West Branch. This location was confirmed at the alternative site visit.
STO-2	STO 9.3-2	9.3	Provide an expert who can discuss any past, present, or reasonably foreseeable future projects within 50 miles of BBNPP and the alternative sites that could contribute to the cumulative impacts of the construction and operation of a new nuclear plant.	Open. See discussion of G-3.
TE-			Terrestrial Ecology	
TE-1	TE(2)-1	9.3	Please make available a clear illustration (figure) for each alternative site to depict the proposed transmission-line and water-pipeline routes. Identify areas that will require new development or expansion of ROWs. The figure should include, at a minimum, the following GIS layer information: PPL site and property boundaries; existing ROWs referenced in the ER; Substation locations referenced in the ER; county boundaries; wetlands and streams; referenced highways, creeks, streams and railroad lines; and major watershed boundaries.	Open-- Additional actions and information requested from applicant: Additional Information: <ol style="list-style-type: none"> 1. Applicant will provide a table showing general land cover impacts (acreage) for each alternative site including linear features. Method should be explained and referenced and total coverage should equal 100 percent. Data should be presented in table, will be general and include such types as deciduous forest, agricultural fields, etc. 2. For assessment of forest fragmentation, applicant will provide a table delineating the linear footage and acreage of forested and unforested areas along new corridor

				<p>ROWs, widened existing ROWs, and within existing ROWs (those that will not be expanded). Data will total 100 percent.</p> <p>3. Revise ER text to include expanded discussion regarding clearing impacts and filling impacts on wetlands, if transmission towers must be placed in wetlands (routing flexibility may allow for no towers in wetlands), and account for any construction access and road impacts.</p> <p>Action request: Expand discussion in the ER to include all sites and corridors. Ensure no inconsistencies between wetlands and forest data.</p>
TE-2	TE(2)-2	9.3	Provide a knowledgeable expert to discuss the cited documentation regarding threatened or endangered species that may occur on the Montour, Humboldt, and Seedco alternative sites, and each of the transmission lines and water pipeline ROWs.	Open pending receipt of ER revision. Applicant will include threatened and endangered accounting for all counties crossed by transmission corridors and waterline routes in a subsequent ER revision.
TE-3	TE(2)-3	9.3	Provide a knowledgeable expert to discuss any unique ecological resources at the Humboldt site; such as the acidic seeps and Sphagnum-rich areas referred to in section 9.3.2.3.4 and the potential impact, on a regional scale, should these resources be lost.	Open pending receipt of ER revision. In a subsequent revision of the ER, the applicant will expand upon the alternative site ecological descriptions to reflect those observed during the alternative site audit.

				Applicant will add description of the Pine Barrens and its proximity and similarity to the vegetation found on the northern portion of the Humboldt Site.
TE-4	TE(2)-4	9.3	Provide a knowledgeable expert to discuss nesting grounds for any threatened or endangered species at the proposed and alternative sites, and the summary and conclusions describing the presence or absence of these sites as being an advantage of the Bell Bend site.	Open, provide written response. Written response submitted in July 21, 2010 letter from applicant (ML102070070).
TE-5	USACE-1	9.3.2.1	Provide an expert who can discuss the wetland scoring for criterion 16c. (High Quality Wetlands within Site) for the Bell Bend site now that wetlands connected to Walker Run are designated as Exceptional Value wetlands. As the scoring would appear to change from a 5 to a 1, how would this change affect the overall scoring of Bell Bend and the decision that there is no environmentally preferred site?	Open, pending receipt of cumulative sensitivity analysis. Corps will send letter to NRC and applicant citing scoring/ranking study. Additional information for Least Environmentally Damaging Practicable Alternative will become part of the Corps joint permit application.
TE-6	USACE-2	9.3.2.1	Provide an expert who can discuss the terrestrial resources scoring for criterion 3a. (Endangered / Threatened Habitats) for the Bell Bend site now that the July 1, 2009 letter from U.S. Fish & Wildlife Service has stated that suitable habitat exists on site for the Indiana bat (<i>Myotis sodalis</i>). As the scoring would appear to change from a 5 to a 1, how would that change affect the overall scoring of Bell Bend and the decision that there is no environmentally preferred site?	Open. Same response as USACE-1 / TE-5.