

**Additional Information Needs for  
Bell Bend 2<sup>nd</sup> Alternative Site Visit  
June 14-18, 2010**

Info Needs #	ER Section	Information Needed
<b>AE-</b>		<b>Aquatic Ecology</b>
<b>AE(2)-1</b>	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?
<b>AE(2)-2</b>	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?
<b>AE(2)-3</b>	9.3	Provide a knowledgeable expert who can discuss the construction process for the CWS intake/discharge systems at the proposed Alternative Sites. The 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?
<b>AE(2)-4</b>	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?
<b>AE(2)-5</b>	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?
<b>AE(2)-6</b>	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 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.

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		<p>Provide a copy of "Rhoads and Block (2007) The Plants of Pennsylvania: An Illustrated Manual, 2<sup>nd</sup> Edition" for review during the alternative site visit.</p> <p>Note that this expands on one request already submitted.</p>
<b>AE(2)-7</b>	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.
<b>AE(2)-8</b>	9.3	Provide a knowledgeable expert who can discuss the occurrence of commercial and recreational fisheries for each of the Alternative sites. The 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?
<b>AE(2)-9</b>	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.}
<b>AE(2)-10</b>	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.
<b>AE(2)-11</b>	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?
<b>AE(2)-12</b>	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.
<b>AE(2)-13</b>	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?
<b>AE(2)-14</b>	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

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		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?
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.
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, <u>lakes</u> , and ponds." Identify the lakes on or near the site.
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 or ranked species in Columbia County?  Also, Black Creek is a tributary of Nescopeck Creek, which is degraded by abandoned mine drainage (AMD). Discuss the implications of locating the CWS intake/discharge for Humboldt within the potential plume from Nescopeck Creek.
AE(2)-18	9.3	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?
AE(2)-19	9.3	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 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 entrainment/impingement data for the Sunbury Steam Electric Station available?
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?

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<b>AE(2)-21</b>	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, <u>lakes</u> , and ponds." Identify the lakes on or near the site.
<b>AE(2)-22</b>	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?
<b>AE(2)-23</b>	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.
<b>CR-</b>		<b>Cultural Resources</b>
<b>CR(2)-1</b>	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 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?
<b>CR(2)-2</b>	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?
<b>CR(2)-3</b>	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?
<b>CR(2)-4</b>	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?
<b>CR(2)-5</b>	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: <ul style="list-style-type: none"> <li>• NRHP listed Keefer Covered Bridge No. 7;</li> <li>• Five archaeological sites of undetermined NRHP eligibility within the physical APE of the Montour site along</li> </ul>

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		<p>Chilisquaue Creek (36MO32, 36MO31, 36MO65, 36MO30, and 36MO28); and</p> <ul style="list-style-type: none"> <li>The NRHP eligible Exchange Historic District located 1.7 mi (2.7 km) northwest of the Montour project area.</li> </ul>
<b>CR(2)-6</b>	9.3	<p>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:</p> <ul style="list-style-type: none"> <li>NRHP listed Markle Bank and Trust Company in Hazleton City;</li> <li>NRHP listed St. Gabriel's Catholic Parish Complex;</li> <li>City of Hazleton (several NRHP eligible historic structures and districts are located in Hazleton);</li> <li>Potential NRHP eligible Lehigh Valley Railroad.</li> </ul>
<b>CR(2)-7</b>	9.3	<p>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:</p> <ul style="list-style-type: none"> <li>NRHP listed Richards Covered Bridge;</li> <li>NRHP listed Kreigbaum Covered Bridge;</li> <li>NRHP eligible Buck Ridge Mine &amp; Ranshaw Village;</li> <li>Potential NRHP eligible Northern Central Railroad</li> <li>Potential NRHP eligible Philadelphia &amp; Reading Railroad;</li> <li>NRHP eligible Saint Mary's Roman Catholic School;</li> <li>NRHP eligible Shamokin Historic District;</li> <li>Town of Shamokin (several NRHP eligible historic properties are located in Shamokin); and</li> <li>Mount Carmel (several NRHP eligible historic properties located in Mount Carmel).</li> </ul>
<b>G-</b>		<b>General</b>
<b>G(2)-1</b>	9.3	Please make available any references (electronic format if available) not included in previous NRC submittals.
<b>G(2)-2</b>	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.
<b>G(2)-3</b>	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.
<b>G(2)-4</b>	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.
<b>G(2)-5</b>	9.3	Provide a knowledgeable expert to discuss pre-construction and construction impacts (10 CFR 51.45(c)).
<b>H-</b>		<b>Hydrology</b>
<b>H(2)-1</b>	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

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		downstream of each site.
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.
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.
H(2)-4	9.4	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.
LU-		<b>Land Use/Transmission Lines</b>
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.
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 primarily agricultural or forest, and who can further outline transmission design details and/or a copy of the referenced PJM guidelines.
LU(2)-3	9.3	Provide a knowledgeable expert to discuss plans for other development at the Humboldt site.
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.
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.
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.
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.
LU(2)-8	9.3	Provide a knowledgeable expert to quantify area of impact to 100-year and 500-year floodplains.
LU(2)-9	9.3	Provide a knowledgeable expert to quantify area of prime and unique farmland impacts.
MET-		<b>Meteorology</b>
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.
NRHH-		<b>Nonradiological Human Health</b>
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.

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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.
SE-		<b>Socioeconomics/Environmental Justice</b>
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.
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.
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.
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.
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.
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.
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.
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.
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.
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.
EJ(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.
TE-		<b>Terrestrial Ecology</b>
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.

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<b>TE(2)-2</b>	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.
<b>TE(2)-3</b>	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.
<b>TE(2)-4</b>	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.