

October 31, 2012

MEMORANDUM TO: William F. Burton, Acting Chief  
Environmental Projects Branch 2  
Division of New Reactor Licensing  
Office of New Reactors

FROM: Laura Quinn-Willingham, Project Manager **/RA Tomeka Terry for/**  
Environmental Projects Branch 2  
Division of New Reactor Licensing  
Office of New Reactors

SUBJECT: SUMMARY OF THE SUPPLEMENTAL ENVIRONMENTAL SITE AUDIT  
RELATED TO THE REVIEW OF THE COMBINED LICENSE  
APPLICATION FOR THE BELL BEND NUCLEAR POWER PLANT

The U.S. Nuclear Regulatory Commission (NRC) staff, Pacific Northwest National Laboratory (PNNL) and Numark Associates, Inc. held a supplemental environmental site audit related to the review of the combined license (COL) application submitted by PPL Bell Bend LLC (PPL). The U.S. Army Corps of Engineers (USACE) is a cooperating agency and also participated in the environmental site audit. The environmental site audit was held on May 14 - 18, 2012, at the East Mountain Business Center located in Wilkes-Barre, Pennsylvania. The purpose of the trip included: 1) discussions with PPL concerning the revised environmental report submitted as part of the application and associated information needs that resulted from a revised site layout; 2) review of additional documentation related to the revised environmental report; 3) tours of the site and surrounding areas; and 4) meeting with Federal, State and local officials regarding the revised application and the review process.

This report provides a summary of the supplemental audit, offsite meetings, and site tours. Enclosure 1 contains a list of attendees that participated in the environmental site audit, the environmental site audit schedule, a summary of daily activities, and a summary of remaining issues by technical discipline. It also contains a list of publicly available references provided by the applicant at the site audit.

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Each day of the supplemental site audit included opening remarks, a follow-up of the previous day's events, discipline-specific discussions, and a summary of the day's discussions. Additionally, PPL provided a special presentation during the first day that included: general site characterization, site safety, and changes that resulted from the revised site layout. PPL also provided a general tour of the Bell Bend site, as well as discipline-specific tours. These discipline-specific tours included the proposed meteorological tower location and certain historic sites on the proposed site.

On May 14, 2012, PPL personnel led a small NRC, USACE, U.S. Environmental Protection Agency, and PNNL team on tours of the Martin's Creek alternative site and the intake/discharge locations for the Humboldt and Seedco alternative sites.

Docket No. 52-039

Enclosure:

As stated

cc w/enclosure: See next page

Each day of the supplemental site audit included opening remarks, a follow-up of the previous day's events, discipline-specific discussions, and a summary of the day's discussions. Additionally, PPL provided a special presentation during the first day that included: general site characterization, site safety, and changes that resulted from the revised site layout. PPL also provided a general tour of the Bell Bend site, as well as discipline-specific tours. These discipline-specific tours included the proposed meteorological tower location and certain historic sites on the proposed site.

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Docket No. 52-039

Enclosure:  
As stated

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**Site Audit Trip Report  
Bell Bend Nuclear Power Plant COL  
(PPL Bell Bend, LLC)  
May 14 – 17, 2012**

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**1.0 Background**

PPL Bell Bend, LLC (PPL) submitted its application for a combined license (COL) on October 10, 2008, to construct and operate one new nuclear power plant at its Bell Bend Nuclear Power Plant (BBNPP) site near Berwick, Pennsylvania (PA). The BBNPP site is located on approximately 2,055 acres in Salem Township, Luzerne County, PA near the west bank of the North Branch of the Susquehanna River. The BBNPP site is adjacent to the Susquehanna Steam Electric Station (SSES) site, which has two operating boiling water reactors. PPL is proposing to build and operate an AREVA U.S. EPR reactor with an approximate output of 1,600 MW(e).

The U.S. Nuclear Regulatory Commission (NRC) staff accepted the COL application for docketing on December 15, 2008. During the week of March 30, 2009, NRC staff and its contractors, the Pacific Northwest National Laboratory (PNNL) and Numark and Associates (Numark), visited four alternative sites for siting the reactor. During the week of April 27, 2009, NRC and its contractors conducted the first audit of the BBNPP site and its environs. In addition, NRC staff and its contractors visited two additional alternative sites on June 15-17, 2010.

On March 30, 2012, PPL submitted Revision 3 of the COL application, which included a revised environmental report (ER). The revised ER provides detailed information regarding PPL's revised site layout, which was developed to avoid wetland impacts by relocating the power block footprint and other components.

To better understand the revised site layout and address information needs (documented in ML12114A212), NRC staff and its contractors conducted the second site audit of the BBNPP site and environs during the week of May 14, 2012. The audit was conducted primarily at the East Mountain Business Center (EMBC) in Wilkes-Barre, Pennsylvania, which is also the Emergency Operations Facility for SSES. PPL staff and its contractors provided a general site tour and specialized tours based on NRC requests. The audit included additional visits to portions of three of the proposed alternatives sites (Humboldt, Seedco, and Martin's Creek) to evaluate environmental aspects not identified during previous site visits. This trip report documents the May 2012 site audit and summarizes key issues.

As part of its review of the COL application, NRC staff is preparing an environmental impact statement (EIS). The U.S. Army Corps of Engineers, Baltimore District (USACE) is reviewing a joint permit application that was submitted by PPL in June 2011 (revised in November 2011) and is a cooperating agency with the NRC in preparing the EIS. The USACE has participated in all site audits and alternative site visits for the project.

Prior to the May 2012 site audit, the NRC provided PPL with a listing of information needs for discussion at the audit (ML12114A212). In response, PPL provided written responses to the majority of the information need requests in an “electronic reading room” accessible via the internet by NRC staff and its contractors prior to the site audit. In addition, printed versions of these responses were available for review at breakout sessions during the site audit.

**Table 1.1. NRC Team**

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Laura Quinn-Willingham	Project Management
John Fringer	Project Management/ Land Use/Non-Rad Human Health/Non-Rad Waste
Nancy Kuntzleman	Aquatic and Terrestrial Ecology
Stacey Imboden	Alternatives
Mohammad Haque	Hydrology
Michael Purdie	Cultural Resources
Jack Cushing	Cultural Resources
Donald Palmrose	Radiological Health Impacts/Accidents
Daniel Mussatti	Socioeconomics/EJ /Need for Power/Cost Benefit
Brenett Warren	Ecology/Hydrology Shadow
Alicia Mullins	Ecology Shadow
Patrick Madden	NRC Management
Anthony Hsia	NRC Management

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Kimberly Leigh	Project Management/General/Site Technical Overview
Roy Kropp	Aquatic and Terrestrial Ecology
Tom Anderson (by phone)	Alternatives
Nancy Kohn	General/Site Layout and Design
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Dave Anderson (by phone)	Need for Power
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**Table 1.3. Numark Team**

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Reaves, Rich	(678) 530-4285	(770) 827-5186	Richard.Reaves@ch2m.com	CH2M Hill
Remsky, Ron	(570) 831-6286	(570) 954-9096	rremsky@ppiweb.com	PPL
Resnick, Ben	(412) 476-2000 X1200	(412) 759-3156	b.resnick@gaiiconsultants.com	GAI
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Roth, Dale	(570) 802-5637	(570) 430-2242	dfroth@ppiweb.com	PPL
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Scholtes, Heather	(570) 802-5626	(267) 221-7104	HMScholtes@ppiweb.com	PPL
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Zeroka, Rick	(617) 523-2002 x47058	(978) 239-2186	Richard.Zeroka@CH2M.com	CH2M Hill
<b>Printing Supplies:</b>				
FedEx Kinko's Office & Print Center	(570) 819-0813	---	---	FedEx Kinko's
<b>Medical Emergency Numbers: (In Case of Emergency Dial 911)</b>				
Geisinger Wyom Valley	(570) 826-7300	---	---	Geisinger Medical Center
Geisinger Medical Center (Danville)	(570) 271-6211	---	---	Geisinger Medical Center
Easton Hospital	(610) 599-8186	---	---	Easton Hospital
Hackettstown Regional Medical Center (Hackettstown, NJ )	(908) 852-5100	---	---	Hackettstown Regional Medical Center
Warren Hospital (Phillipsburg, NJ)	(908) 859-6700 Emergency Service (908) 859-6767	---	---	Warren Hospital

**Table 1.5.** Federal, State, and Local Agency Representatives that Participated in the Site Tours and/or Meetings with NRC and PPL at the Site Audit

<b>Name, Title</b>	<b>Organization</b>
Amy Elliott	U.S. Army Corps of Engineers
Jamie Davis	U.S. Environmental Protection Agency
Kevin Magerr	U.S. Environmental Protection Agency
Paula Ballaron	Susquehanna River Basin Commission
Pat Naugle	Susquehanna River Basin Commission
Heidi Biggs	PA Department of Environmental Protection
Tonda Lewis	PA Department of Environmental Protection
Larry Winker	PA Department of Environmental Protection
Gene Trowbridge	PA Department of Environmental Protection
J. Drech	PA Department of Environmental Protection
JR Holtmaster	PA Department of Environmental Protection
Lora Zimmerman	U.S. Fish and Wildlife Service
Steve Mars	New Jersey U.S. Fish and Wildlife Service
Tom Shervinskie	PA Fish and Boat Commission

**Table 1.6.** Community Representatives who Attended Offsite Meetings (outside the EMBC) with NRC/PNNL/Numark Socioeconomics and Land-Use Staff from May 15, 2012 to May 17, 2012.

<b>Name, Title</b>	<b>Organization</b>
Adrian Merolli, Director	Luzerne County Planning Commission
Wayne Brookhart, Superintendent	Berwick Area School District
Jack Robshaw, Luzerne County Sherriff	Luzerne County Sherriff's Office
Joseph Gibbons, P.E. Luzerne County Engineer	Luzerne County Engineer's Office
Robert Lawton, Luzerne County Manager	Luzerne County
Jim Timbrell, Mayor	Borough of Berwick
Robert Hivish, Borough Manager	Borough of Berwick
Lauren Martz, Asst. Borough Manager	Borough of Berwick
Jack Kytte, Working Foreman	Borough of Berwick Department of Public Works
Greg Harkins, Codes Department Supervisor	Borough of Berwick
Joshua Kishbaugh, Chairman	Salem Township Board of Supervisors
William Bogle, Chairman	Salem Township Planning Commission
Karen Karchner, Zoning/Planning Administrator	Salem Township
John Varaly, American Institue of Certified Planners	Varaly Associates
Tim Chamberlain, Columbia County Sheriff	Columbia County Sheriff's Office
Earl Mordan, Chief Deputy Sheriff	Columbia County Sheriff's Office
Robert Aungst, Director	Columbia County Office of Planning
Rachel Swartwood, Land Use Planner	Columbia County Office of Planning

## **2.0 Summary of Activities**

### **2.1 Daily Schedule**

- Sunday, May 13, 2012:** Staff Travel Day (Partial)
- Monday, May 14, 2012:** Alternative Sites Tour for Ecology Review Teams  
Staff Travel Day (Remainder)  
NRC-PNNL Team Meeting
- Tuesday, May 15, 2012:** Site Audit Kickoff Meeting and Breakout Sessions at the Eastern Mountain Business Center (EMBC)  
Offsite Meeting with Luzerne County Planning Commission  
Offsite Meeting with Berwick County School District  
Federal and State Agencies Gov't to Gov't Meeting  
Bell Bend General Site Tour  
Daily NRC-PNNL Closeout with PPL  
NRC-PNNL Team Meeting
- Wednesday, May 16, 2012:** Site Audit Breakout Sessions at the EMBC  
Offsite Meeting with Pennsylvania Bureau for Historic Preservation  
Offsite Meeting with Luzerne County  
Offsite Meeting with Borough of Berwick  
Cultural Resources Tour  
Meteorology Tower Tour  
NRC-PNNL Closeout with PPL
- Thursday, May 17, 2012:** Site Audit Breakout Sessions at the EMBC  
Offsite Meeting with Salem Township  
Offsite Meeting with Columbia County Sheriff  
Offsite Meeting with Columbia County Office of Planning  
NRC-PNNL Closeout with PPL  
Tour of Natural Gas Well Development Facilities in Pennsylvania  
Staff Travel Day (Partial)
- Friday, May 18, 2012:** Staff Travel Day (Remainder)



## **2.2 Daily Summary**

### **Sunday May 13, 2012 – Travel Day for Partial Team**

The NRC, PNNL, and Numark staff participating in the additional alternative site visits on Monday, May 14, 2012, traveled to Wilkes-Barre, Pennsylvania.

### **Monday May 14, 2012 – Alternative Site Visits and Travel Day for Remainder of the Team**

The NRC and PNNL staff participating in the alternative site visits met briefly at 7:30 a.m., at the East Mountain Inn to discuss plan for the day and route to the EMBC.

At 8:00 a.m., NRC, PNNL, and Numark staff met with PPL and its contractor staff at the EMBC. PPL provided transportation in vans and guides for tours of the Martin's Creek site and the intake/discharge locations for the Humboldt and Seedco sites. The Martin's Creek site tour included stops at Buckhorn Creek (onsite); a walking tour to the transmission line (onsite); a walking tour to the new solar energy farm (onsite); both a driving and walking tour along the Delaware River (adjacent to the site); and a driving tour to the downstream section of Buckhorn Creek to observe the fish stocking area (offsite). The tour of the Martin's Creek site was followed by a driving tour of the proposed intake/discharge locations (offsite) on the Susquehanna River for the Humboldt and Seedco alternative sites. In the afternoon, following the completion of the tours, PPL transported the participants back to the EMBC.

The alternative sites tour was attended by Laura Quinn-Willingham, Mohammad Haque, Nancy Kuntzleman, and John Fringer (NRC); Roy Kropp and Nancy Kohn (PNNL), Amy Elliott (USACE); and Jamie Davis (U.S. Environmental Protection Agency [EPA]). Kevin Magerr (EPA) met the tour at Seedco intake/discharge location. NRC had planned to meet with the New Jersey Division of Fish and Wildlife regarding Martin's Creek, but their representative was unable to attend.

During the day, the remainder of the NRC, PNNL, and Numark staff traveled to Wilkes-Barre. A general team meeting was held at the East Mountain Inn at 8:00 p.m. to discuss the logistics and NRC's expectations for the site audit and tours beginning on Tuesday, May 15.

### **Tuesday May 15, 2012 (Morning) – Site Audit and Government-to-Government Meetings**

The site audit began at 8:00 a.m. at the EMBC. Rocky Sgarro (PPL) and Laura Quinn-Willingham, Environmental Project Manager (EPM) (NRC), opened the meeting by welcoming everyone and asking that those present introduce themselves. Introductions included staff from PPL and its contractors, NRC, PNNL, Numark, and numerous State and Federal agencies. Laura Quinn-Willingham discussed NRC's objectives and expectations for the site audit and the role of PNNL and Numark on behalf of the NRC. Rocky Sgarro provided an overview of site audit activities for the morning, the site tour in the afternoon, and the site audit activities and tours for the remainder of the week.

Following general introductions and logistics, Rocky Sgarro provided a presentation on the changes to the site layout for the facility. After this presentation, NRC, PNNL, and Numark staff began breakout sessions in assigned EMBC rooms and meeting areas to discuss specific information needs and responses that had been posted to the PPL electronic reading room prior to the audit.

From 9:45 to 10:45 a.m., Dan Mussatti (NRC) and Patrick Balducci (PNNL) met with Adrian Merolli (Luzerne County Planning Commission) to discuss transportation, economic, and zoning/permitting requirements of the proposed BBNPP.

At 11:00 a.m., NRC conducted a government-to-government meeting. Attendees included Jamie Davis and Kevin Magerr (EPA); Paula Ballaron (Susquehanna River Basin Commission); Amy Elliott (USACE), Tonda Lewis (PA Department of Environmental Protection); Laura Quinn-Willingham, Mohammad Haque, Nancy Kuntzleman, Stacey Imboden, John Fringer, and Tony Hsia (NRC); Bruce McDowell, Kim Leigh, Roy Kropp, and Tom Anderson (by phone) (PNNL); and Richard Codell (Numark). The meeting was held to inform the involved agencies about NRC's National Environmental Policy Act review process and the USACE involvement, and also discuss any issues those agencies feel need to be addressed in the EIS. A general discussion was held regarding PPL's efforts to address SRBC concerns regarding bypass flows, PPL's proposed corporate pooled asset approach, and the inclusion of Martin's Creek as an alternative site.

### **Tuesday May 15, 2012 (Afternoon) – Site Audit, Offsite Meetings, and Bell Bend Site Tour**

In the afternoon, PPL provided a van tour of the site for most NRC and its contractor staff. Stops included the following points on the revised construction footprint as a result of PPL's site layout changes: the proposed main access and south laydown area; intake location; 230-kV transmission line relocation area; cooling tower and powerblock areas; meteorological tower; Walker Run restoration area; Essential Service Water Emergency Makeup System (ESWEMS) pond site; teardrop wetland drainage; and Unnamed Tributary 1. The van carrying the ecologists visited the former beaver pond area to view the changes resulting from the removal of a relic beaver dam and replacement of an old road culvert. The van carrying the hydrologists also visited the proposed BBNPP and existing SSES discharge locations in the Susquehanna Riverlands natural area. NRC, PNNL, and Numark staff also viewed three single-family homes located within the exclusion zone and one single-family home that would be displaced by the new access road.

From 1:00 to 2:00 p.m., Dan Mussatti (NRC) and Patrick Balducci (PNNL) met with Wayne Brookhart of the Berwick County School District to discuss the district's facilities, tax base, and the district's capacity to absorb additional students. Following this meeting, they returned to the site audit for continued breakout sessions with PPL on socioeconomics and environmental justice.

The remainder of the NRC team remained at the EMBC during the afternoon and continued breakout meetings and discussions with PPL and its contractors about information needs and responses. An afternoon debrief for NRC and its contractor staff was held in the NRC meeting room at the EMBC from 4:30 to 5:30 p.m. A closeout meeting was held with PPL from 5:30 to 6:00 p.m. A NRC team meeting was held at 8:00 p.m. at the East Mountain Inn to discuss findings and logistics for the following day.

### **Wednesday May 16, 2012 (Morning) – Site Audit and Off-Site Meetings**

All site audit participants met at 8:00 a.m. at the EMBC for a brief kickoff and continued breakout sessions in assigned rooms and meeting areas to discuss specific information needs

and responses that had been posted to the PPL electronic reading room prior to the audit. NRC and PNNL management continued to compile information need tracking and exchange status with PPL staff.

From 9:00 to 10:00 a.m., Dan Mussatti (NRC) and Patrick Balducci (PNNL) met with Luzerne County staff Jack Robshaw (Luzerne County Sherriff); Joseph Gibbons, P.E. (Luzerne County Engineer); and Robert Lawton (Luzerne County Manager) to discuss the public safety, transportation, and housing impacts of the proposed BBNPP on Luzerne County.

From 10:00 to 11:00 a.m., Jack Cushing (NRC), Michael Purdie (NRC), and Darby Stapp (Numark) met with Steven McDougal of the PA Bureau for Historic Preservation to discuss the impact of the proposed BBNPP on historic and cultural properties and the status of consultation reviews under Section 106 of the National Historic Preservation Act.

### **Wednesday May 16, 2012 (Afternoon) – Site Audit and Off-Site Meetings**

The NRC, PNNL, and Numark staff continued breakout sessions with PPL and its contractors in assigned EMBC rooms and meeting areas to discuss specific information needs and responses that had been posted to the PPL electronic reading room prior to the audit. NRC and PNNL management continued to compile information need tracking and exchange status with PPL staff. During breakout sessions, conference calls were held with Tom Anderson (Alternatives), Lara Aston (Non-rad health and waste), and Robin Durham (Terrestrial Ecology) all from PNNL.

From 1:30 to 4:00 p.m., Don Palmrose (NRC), Jeremy Rishel, and Tim Lynch (PNNL) participated in a tour of the SSES meteorological tower and proposed BBNPP meteorological tower locations provided by PPL. This tour included the nearest potential receptors (i.e., home, garden, milk, and meat animal) for normal radiological releases from the proposed BBNPP. During this time period, Andrew Marchese (Numark) remained at the EMBC to review hard copies of accident calculation packages.

From 1:30 to 4:00 p.m., Jack Cushing (NRC), Michael Purdie (NRC), and Darby Stapp (Numark) participated in a site-specific tour to see the north laydown area and identified archaeological areas at the BBNPP site.

From 3:30 to 4:30, Dan Mussatti (NRC), Patrick Balducci (PNNL), and Jan Aarts (Numark) met with Jim Timbrell (Mayor), Robert Hivish (Borough Manager), Lauren Martz (Asst. Borough Manager), Jack Kytte (Working Foreman, Department of Public Works), and Greg Harkins (Codes Department Supervisor) of the Borough of Berwick to discuss potential impacts of the proposed BBNPP on land use, housing, local community demographics, public facilities, tax base, emergency preparedness, and public services provided by the Borough of Berwick.

As breakout sessions were concluded, staff provided information needs tracking updates to PNNL team management. An afternoon debrief for NRC and its contractor staff was held in the NRC meeting room at the EMBC from 4:30 to 5:30 p.m. Each technical discipline presented a summary of its breakout sessions, including any issues that arose during the discussions or tours. Potential actions to resolve issues were also discussed. A closeout meeting was held with PPL from 5:30 to 6:00 p.m. The planned 8:00 p.m. NRC-PNNL team debrief at the East Mountain Inn was not needed.

## **Thursday May 17, 2012 – (Morning) – Travel, Site Audit and Off-Site Meetings**

Travel day for some NRC and its contractor staff.

At 8:00 a.m., NRC, PNNL, and Numark staff continued breakout sessions with PPL and its contractor staff in assigned EMBC rooms and meeting areas to discuss specific information needs and responses that had been posted to the PPL electronic reading room prior to the audit. PNNL team management compiled information needs tracking and compared with PPL's records for consistency.

From 10:00 to 11:00 a.m., Dan Mussatti (NRC), John Fringer (NRC), Patrick Balducci (PNNL) and Jan Aarts (Numark) met with Joshua Kishbaugh (Chairman), Salem Township Board of Supervisors; William Bogle – (Chairman), Salem Township Planning Commission; Karen Karchner (Zoning/Planning Administrator), Salem Township; and John Varaly to discuss the local community, relevant permitting/zoning requirements, and concerns regarding the proposed BBNPP.

From 11:00 a.m. to 12:00 p.m., a site audit closeout was held with PPL to summarize audit results and to identify action items and additional information needs that resulted from discussions during the audit. A listing of information provided at the site audit, such as reports and written responses provided in the electronic reading room, that would be requested through the request for additional information (RAI) process was developed.

## **Thursday May 17, 2012 (Afternoon) – Travel, Off-Site Meetings, Tour of Natural Gas Well Development Facilities**

From 1:00 to 2:00 p.m., Dan Mussatti (NRC) and Patrick Balducci (PNNL) met with Tim Chamberlain, Columbia County Sheriff and Earl Mordan, Chief Deputy Sheriff to discuss the public safety and emergency preparedness impacts of the proposed BBNPP on Columbia County.

From 2:15 to 3:15 p.m., Dan Mussatti (NRC) and Patrick Balducci (PNNL) met with Columbia County Office of Planning staff Robert Aungst (Director) and Rachel Swartwood (Land Use Planner) to discuss land-use, transportation, and economic issues associated with the BBNPP site.

From approximately 1:00 to 5:00 p.m., specified NRC and contractor staff participated in a tour of Marcellus Shale natural gas drilling operations north of the proposed BBNPP site. The tour was arranged by Jim Sherrer (Numark) and provided by Chesapeake Energy. There was no involvement by PPL or its contractors. The purpose of this tour was to gather information about cumulative impacts of natural gas drilling operations in the region. Participants included Laura Quinn-Willingham, Nancy Kuntzleman, Jack Cushing, John Fringer, and Mohammad Haque (NRC); Nancy Kohn, Roy Kropp, Robin Durham, and Kim Leigh (PNNL); and Jan Aarts, Richard Codell, and Jim Scherrer (Numark).

## **Friday May 18, 2012 – Travel**

Travel day for remaining staff.

### **3.0 Summary of Remaining Issues or Concerns by Technical Discipline**

#### **3.1 Hydrology**

The information needs discussed (HY-1 through HY-4, and their sub-items) included issues related to eventual disposition of the slurry wall, analysis of dose to reflect assumptions used in the radiological assessment of agriculture water sources for construction use, the possibility of Susquehanna River water being drawn into Pennsylvania American Water (PAW) company wells, hydrologic monitoring during construction and operation, and alternative technologies to the intake/discharge. Staff considered two of four information needs resolved before or during the site audit without the need for requests for additional information (RAI).

PPL provided information on well tests performed at PAW wells to rule out the possibility of Susquehanna River water being drawn into the PAW wells at Berwick. PPL also provided a consultant from Pennoni Associates who was familiar with such testing. Staff closed the issue with PPL, but will follow up with the PA Department of Environmental Protection for further information on the tests that were performed on the wells. In addition, Paula Ballaron of Susquehanna River Basin Commission (SRBC) is checking to see if these wells were issued permits by SRBC.

As noted in their February 22, 2012, letter to the USACE, the SRBC is currently evaluating Policy No. 2003-1 regarding low flow recommendations and limiting alterations to natural flow regimes. This policy most likely will be approved before the BBNPP application is approved. It is unclear how the approval of this policy would change or limit the potential for impacts to Susquehanna River hydrology that would result from BBNPP operations.

The two information needs remaining to be resolved include the following:

The ER makes no mention of the perforation of the slurry wall for the ESWEMS pond following construction to allow for unimpeded groundwater flow. PPL noted this omission and stated it will send a letter clarifying this issue and revise the ER.

Related to radiological assessments, PPL stated it will revise analysis of dose to reflect a lower-flow calculation that will be more conservative than the use of the harmonic mean flow in the Susquehanna River.

#### **3.2 Aquatic Ecology**

Staff considered 14 of 24 information needs resolved before or during the site audit without the need to issue RAIs. Other information needs may be resolved by the docketing of information presented at the site audit.

The viability of the Martins Creek site as an alternative site is not clear pending a better understanding of the New Jersey Highlands Water Protection and Planning Act.

The occurrence of the brook floater and green floater, both of which are being reviewed for possible Endangered Species Act listing, in the Susquehanna River downriver from the BBNPP site is unknown. PPL will conduct a qualitative survey for these mussels during the summer of 2012 as soon as river flows allow. If the mussels are found during the survey, a limited

quantitative survey to determine mussel densities will follow. The survey report should be available in September 2012. Lora Zimmerman (U.S. Fish and Wildlife Service) provided reference to a *Federal Register* notice for possible listing of the brook floater and green floater under the Endangered Species Act.

The possible ecological effects of the consumptive use by the BBNPP during times of low river flow are not resolved. PPL has submitted an Instream Incremental Flow Methodology (IFIM) study report to the SRBC for review. Until the study report has been reviewed by the SRBC, NRC, and its contractors and comments/issues are resolved, the potential ecological effects of consumptive use remain unclear.

As noted in their February 22, 2012, letter to the USACE, SRBC is currently evaluating Policy No. 2003-1 regarding low flow recommendations and limiting alterations to natural flow regimes. This policy most likely will be approved before the BBNPP application is approved. It is unclear how the approval of this policy would change or limit the potential for impacts to aquatic ecology that would result from BBNPP operations.

### **3.3 Terrestrial Ecology**

Staff considered 19 of 36 information needs resolved before or during the site audit without the need to issue RAIs. Many of the information needs designated as possibly needing a RAI were so designated simply to have PPL provide all or part of the written response in the electronic reading room on the docket. However, an outstanding issue exists related to the Migratory Bird Treaty Act. The NRC staff will consider issuing a RAI to request information about PPL's electric utilities bird management plan.

### **3.4 Socioeconomics/Environmental Justice/Benefit Cost**

Staff considered 6 of 15 information needs resolved during the site audit without the need to issue RAIs. Other information needs may be resolved by the docketing of information presented at the site audit. NRC requested that various reports provided in response to information needs be docketed, including sources and uses of funds for Luzerne and Columbia Counties, requirements of the PA Department of Transportation Traffic Impact Study, estimates of Bell Bend property tax revenue generated during construction and operation, and overnight capital cost estimates for BBNPP infrastructure support at the plant, decommissioning costs, and corporate income tax payments.

During meetings with officials from the Salem Township, it was communicated that the proposed Confers Lane closure may affect emergency evacuation as it is identified as a regional emergency egress route. The staff will consider developing a RAI regarding the impact of the closure of this road on the region's emergency planning. Also, the township staff asserted that the traffic impact study (TIS) was outdated and did not adequately address the impact of traffic diversion during congested periods onto secondary routes located within the township. Township staff stated that the TIS did not account for recent growth in the area driven by the addition of Western International Gas and Cylinder and the expansion of Tech Packing. Further, more growth is expected, as there is an application pending for a co-gen natural gas plant in the area. The staff will consider issuing a RAI regarding updating the TIS by PPL to address these concerns.

### **3.5 Cultural Resources**

Staff considered 9 of 10 information needs resolved before or during the site audit without the need to issue RAIs pending the docketing of information presented at the site audit.

The PA Historical and Museum Commission (PHMC) needs to complete its review of the Cultural Resources Protection Plan and PPL recommendations for two potential archaeological resources. PHMC will respond with letters to PPL, who will in turn submit the letters to NRC for docketing. These interactions will be considered in the EIS in order to complete the Section 106 Consultation. The staff will consider issuing RAIs to track these interactions for inclusion into the EIS.

### **3.6 Meteorology/Air Quality**

Staff did not consider any information needs resolved before or during the site audit. However, no major issues were identified with regards to meteorology and air quality. Staff will consider issuing a RAI to request the revised updates to the ER calculations as a result of the plot plan changes.

### **3.7 Accidents**

Staff considered 6 of 15 information needs resolved before or during the site audit without the need to issue RAIs. Other information needs may be resolved by the docketing of information presented at the site audit.

No major issues were identified with regards to accidents, but internal coordination with the NRC safety staff will continue to ensure consistency in the treatment of severe accident and design basis accident analyses between NRC environmental and safety divisions and with other applicants. This coordination may result in additional RAIs.

### **3.8 Nonradiological Health/Nonradioactive Waste**

Staff considered 8 of 10 information needs resolved before or during the site audit. However, no major issues were identified with regards to nonradiological health and nonradiological waste. NRC requested that various reports provided at the audit in response to information needs be docketed.

### **3.9 Radiological/Fuel Cycle/Waste Systems/ Decommissioning**

Staff considered 2 of 7 information needs resolved before or during the site audit without the need to issue RAIs. Other information needs may be resolved by the docketing of information presented at the site audit.

Potential RAIs include a request to analyze data from 2007-2011 regarding doses to construction workers and BBNPP out-of-plant exposure rates, 2080 population data in the population dose analysis, and the docketing of changes made to the BBNPP REMP since 2009. Tim Lynch (PNNL) will complete confirmatory calculations.

### **3.10 Alternatives**

Staff considered 4 of 6 information needs resolved before or during the site audit without the need to issue RAIs. Other information needs may be resolved by the docketing of information presented at the site audit.

The viability of the Martin's Creek site in New Jersey as an alternative to the Bell Bend site was raised. A May 10, 2012, letter from the New Jersey Highlands Water Protection and Planning Commission to the NRC suggests that a nuclear power plant at the Martin's Creek site may not be consistent with the regional master plan and the site would not obtain permits for water use and waste water discharges. Also, the Wallenpaupack site in New Jersey ranked higher in PPL's alternative site screening. The staff will consider issuing RAIs requesting information be submitted on the docket regarding this issue.

### **3.11 Need for Power**

Staff did not consider any information needs resolved before or during the site audit. The information responses provided at the audit did not address the impacts expected on the PPL generating fleet resulting from forthcoming and reasonably certain rules affecting fossil-fuel plant emissions. In addition, the information responses did not address the impacts expected on PPL or Pennsylvania—New Jersey—Maryland Interconnection (PJM) systems demand arising from expected higher levels of building codes and appliance standards compared to historic experience. Therefore, the staff will consider issuing RAIs requesting more information regarding these issues.

### **3.12 Land Use/Transmission Lines**

Staff considered 10 of 16 information needs resolved before or during the site audit without the need to issue RAIs. Other information needs may be resolved by the docketing of information presented at the site audit.

NRC needs to determine whether NRCS Form AD 1006 related to farmland conversion needs to be prepared for this EIS process.

Salem Township is concerned that the Traffic Impact Study (TIS) prepared for the project did not include analysis of BBNPP construction period traffic impacts on county roads. After the TIS was prepared in 2009, several new plants moved into the area. PPL told Township officials that it will do additional traffic studies to assess impacts on local roads. PPL recently removed the abandonment of Confers Road from the subdivision and lot consolidation proposal before Salem Township in response to concerns that closing a portion of the road would impact the Township's existing evacuation plan. The road closure issue may be added back in to the proposal during review of the conditional use permit. RAIs on these issues may be combined with RAIs for Socioeconomics.



### **3.13 General and Site and Technical Overview**

Staff considered 5 of 10 information needs resolved before or during the site audit without the need to issue RAIs. Other information needs may be resolved by the docketing of information presented at the site audit.

NRC will consider requesting figures that convert easily to black and white, in addition to modifying select other figures and providing GIS layers. NRC will also consider requesting information about the viability of eight projects in relation to cumulative impacts. NRC will consider requesting definitions of the terms project boundary, site boundary, BBNPP property boundary, SSES property boundary, owner control area and limit of disturbance. NRC understands that PPL will also be submitting a paragraph on the docket confirming procedures used at SSES will be implemented at BBNPP.

### **3.14 Data Gathering**

No written documentation was obtained by NRC or contractor staff during the audit that had not been previously docketed.