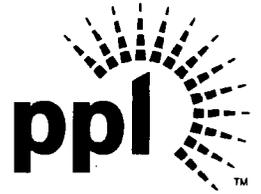


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April 25, 2011

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

**BELL BEND NUCLEAR POWER PLANT
RESPONSE SUBMITTAL FOR RAI No. 36,
QUESTION 08.02-4, FSAR CHAPTER 8
BNP-2011-083 Docket No. 52-039**

- References:
- 1) M. Canova (NRC) to R. Sgarro (PPL Bell Bend, LLC), Bell Bend COLA – Request for Information No. 36 (RAI No. 36) – EEB - 2745, email dated July 27, 2009 (ML092090441)
 - 2) R. R. Sgarro (PPL Bell Bend, LLC) to U.S. Nuclear Regulatory Commission, BNP-2010-254, “Partial Response and Extension Request for RAI No. 36 for FSAR Chapter 8,” dated June 1, 2010 (ML102990434)
 - 3) R. R. Sgarro (PPL Bell Bend, LLC) to U.S. Nuclear Regulatory Commission, BNP-2011-067, “Schedule Information for RAI No. 36, FSAR Chapter 8,” dated March 30, 2011 (ML110950675)

The purpose of this letter is to provide the final response for the request for additional information (RAI) identified in the NRC correspondence to PPL Bell Bend, LLC (PPL) (Reference 1). This RAI addresses the Offsite Power System, as discussed in Section 8.2 of the Final Safety Analysis Report (FSAR), as submitted in Part 2 of the Bell Bend Nuclear Power Plant Combined License Application (COLA).

In References 2 and 3, PPL informed the NRC that the response to Question 08.02-4 would be provided at a later date, but by April 29, 2011. Question 08.02-4 requested information concerning responsibilities for switchyard maintenance, modifications and operations. Our response to RAI No. 36 Question 08.02-4 is included in the enclosure and identifies changes that will be made to the BBNPP COLA.

The only new regulatory commitment contained in the letter is to update the BBNPP COLA at a future date.

Should you have questions or need additional information, please contact the undersigned at 570.802.8102.

D102
NRW

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

Executed on April 25, 2011

Respectfully,



Rocco R. Sgarro

RRS/kw

Enclosure: As stated

cc: (w/ Enclosure)

Mr. Michael Canova
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(w/o Enclosure)

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Enclosure

Bell Bend Nuclear Power Plant

Response to RAI No. 36, Question 08.02-4

Question 08.02-4:

FSAR Section 8.2.2.5, page 8-18, notes that in order to comply with GDC 18, a COL applicant that references the U.S. EPR design certification will provide a site-specific station switchyard equipment inspection and testing plan that ensures that any modifications to the offsite power system circuits credited for satisfying GDC 17 and GDC 18 are performed by offsite transmission system operating authorities with a proper evaluation. The Staff notes that the application provides that an interface agreement is established to define the interfaces and working relationships between various Bell Bend site organizations and the PPL Electric Utilities Corporation (PPL EU) organizations responsible for maintaining these facilities.

- (1) Provide additional details describing which entity is responsible, per the subject agreement, for overseeing maintenance, modification, and operation of the offsite transmission lines, switchyards, and equipment related to Bell Bend NPP; and
- (2) If various Bell Bend site organizations split the responsibility for overseeing maintenance, modification, and operation of the offsite transmission lines, switchyards, and equipment related to Bell Bend NPP, describe how the site specific station equipment inspection and testing plan will be implemented.

Response:

- (1) PPL Electric Utilities (EU) currently maintains the existing nearby Susquehanna Steam Electric Station (SSES) Susquehanna 500kV Switchyard #1 based on an agreement between PPL EU and PPL Susquehanna, LLC.

For the Bell Bend NPP, the design, construction and testing of the two new switchyards and interconnection transmission assets will be performed at the direction of PPL Bell Bend, LLC with input from PPL EU. The ownership of the two new switchyards and the transmission assets will be turned over to PPL EU after testing is completed. PPL EU will be responsible for directing the maintenance, modification and operation of the new Susquehanna 500kV Switchyard #2, the new BBNPP Switchyard and all interconnection transmission assets. A written interface agreement will be executed between PPL EU and PPL Bell Bend, LLC, to address the maintenance, modification and operation of all three switchyards and interconnection transmission assets.

- (2) PPL EU or their agents will perform the same maintenance and inspection activities on the proposed switchyard equipment with the same periodicity and type as that currently performed on other PPL EU owned equipment of similar type and voltage class. Periodic inspection and maintenance procedures will be scheduled against these assets through communications with PPL Bell Bend, LLC to ensure that equipment availability and reliability is maximized. PPL EU may add, delete and replace maintenance activities when beneficial to take advantage of new technologies or equipment improvements. PPL EU may also adjust inspection or maintenance schedules on PPL EU equipment when it is advantageous to group activities with other scheduled transmission and/or substation facility outages. PPL EU will perform, but is not limited to, the following inspection and preventative maintenance activities on PPL EU switchyard assets:

- Support initial acceptance and commissioning inspections and tests.
- Perform periodic station inspections.
- Perform periodic infrared inspections.
- Perform periodic battery impedance and inter-cell connection resistance tests.
- Perform periodic battery capacity tests.
- Periodically monitor service and overhaul circuit breakers.
- Periodically service motor-operated disconnect switches.
- Periodic AC Power Factor and oil dielectric testing of oil filled equipment, if applicable.
- Periodic inspection and testing of gas-insulated equipment.

PPL EU will perform, but is not limited to, the following inspection and preventative maintenance activities on PPL EU transmission line assets. PPL EU may add, delete and replace maintenance activities when beneficial to take advantage of new technologies or equipment improvements. PPL EU may also adjust inspection or maintenance schedules on PPL EU equipment when it is advantageous to group activities with other scheduled transmission and/or substation facility outages.

Significant preventative transmission line maintenance activities include:

- Support initial acceptance and commissioning inspections and tests.
- Perform periodic line equipment and right-of-way inspections via foot patrol.
- Perform periodic routine overhead line equipment and right-of-way inspections via contract helicopter services.
- Perform periodic comprehensive overhead line equipment and right-of-way inspections via contract helicopter services.
- Perform preventative maintenance repairs of deficiencies found during inspections that are required to ensure line availability and reliability. Deficiencies unable to be repaired via contract helicopter will be completed with line outage coordinated with Bell Bend.

Final maintenance activities and schedules will be developed once the complete list of proposed equipment is provided to the PPL EU Transmission and Substation Maintenance department, negotiated with representatives of PPL Bell Bend, LLC and included in the final interface agreement.

COLA Impact:

The BBNPP FSAR will be revised as shown:

8.2.2.5 Compliance with GDC 18

The U.S. EPR FSAR includes the following COL Item in Section 8.2.2.5:

A COL applicant that references the U.S. EPR design certification will provide site-specific information for the station switchyard equipment inspection and testing plan.

This COL Item is addressed as follows:

{BBNPP shall establish an interface agreement that defines the interfaces and working

relationships between various BBNPP site organizations and PPL EU to ensure the offsite power design requirements for the transmission facilities are maintained. The agreement defines the necessary requirements for operation, maintenance, calibration, testing and modification of transmission lines, switchyards, and related equipment. ~~The BBNPP and PPL EU are~~ is responsible for maintaining these facilities.

For performance of maintenance, testing, calibration and inspection, PPL EU follows its own field test manuals, vendor manuals and drawings, industry's maintenance practices and conforms to Federal Energy Regulatory Commission (FERC) requirements.

The BBNPP 500 kV Switchyard grounding and lightning protection systems will meet the requirements of GDC 18 and comply with testing and inspection requirements in accordance with Regulatory Guide 1.204 (NRC, 2005).

Regular inspections and maintenance of the transmission system and right-of-ways will be performed. These inspections and maintenance include patrols and maintenance of transmission line hardware on a periodic and as-needed basis. Vegetation maintenance may include tree trimming and application of herbicide. Maintenance of the proposed onsite corridors including vegetation management will be implemented under the existing PPL EU Corporation procedure. Additionally, the following major inspection and maintenance activities are performed on the PPL EU transmission system:

- ◆ Support initial acceptance and commissioning inspections and tests.
- ◆ Perform periodic line equipment and right-of-way inspections via foot patrol.
- ◆ Perform periodic routine overhead line equipment and right-of-way inspections via contract helicopter services.
- ◆ Perform periodic comprehensive overhead line equipment and right-of-way inspections via contract helicopter services.
- ◆ Perform preventative maintenance repairs of deficiencies found during inspections that are required to ensure line availability and reliability.
- ◆ Deficiencies unable to be repaired via contract helicopter will be completed with line outage coordinated with BBNPP.

Multiple levels of inspection and maintenance are performed on the BBNPP and Susquehanna 500 kV switchyards and associated switchyards and substation facilities. This inspection and maintenance is as follows.

- ◆ Support initial acceptance and commissioning inspections and tests.
- ◆ Walk-throughs and visual inspections of each substation facility including, but not limited to, reading and recording of equipment counters and meters, site temperature and conditions, and equipment condition.
- ◆ Protective relay system testing including: visual inspection, calibration, verification of current and potential inputs, functional trip testing, and correct operation of relay communication equipment.

- ◆ AC Power Factor testing and oil sampling of large power transformers. Oil samples are evaluated through the use of gas chromatography and dielectric breakdown analysis.
- ◆ Several levels of inspection and maintenance for power circuit breakers. The frequency of each is a function of the number of operations and the length of time in service. External visual inspection of all functional systems, an external test, and an internal inspection. Frequency of the various maintenance/inspection efforts is based on a combination of operating history of the type of breaker, industry practice and manufacturer's recommended maintenance requirements.
- ◆ Periodically service motor-operated disconnect switches.
- ◆ Check GIS SF₆ gas density weekly or bi-weekly per instruction of BBNPP GIS Supplier.
- ◆ Inspect and test operating components inside SF₆ gas chamber per instructions of BBNPP GIS Supplier.
- ◆ The testing will performed to check:
 - a. functionality of GIS System
 - b. commissioning of GIS System and the associated GIS components per instructions of the BBNPP GIS Supplier
 - c. periodic operations and maintenance of individual GIS components per instructions of BBNPP GIS Supplier.
- ◆ Testing and handling of SF₆ (e.g., leakage detection, gas density, etc.) per instructions of BBNPP GIS Supplier.
- ◆ Testing and inspecting operating components inside the SF₆ gas chamber per instructions of the BBNPP GIS Supplier.
- ◆ Thermography is used periodically to identify potential thermal heating issues on buses, conductors, connectors and switches.
- ◆ Maintenance of battery systems is performed on a periodic basis to test battery impedance and inter-cell connection resistance, battery capacity and, including includes quarterly visual inspections, verification of battery voltage, and verification of electrolyte level.}