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February 12, 2010

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

BELL BEND NUCLEAR POWER PLANT
RESPONSE TO RAI No. 81
BNP-2010-043 Docket No. 52-039

References: 1) M. Canova (NRC) to R. Sgarro (PPL Bell Bend, LLC), Bell Bend COLA – Request for Information No. 81 (RAI No. 81) – SBPA - 3916, email dated January 25, 2010

The purpose of this letter is to respond to the request for additional information (RAI) identified in the referenced NRC correspondence to PPL Bell Bend, LLC. This RAI addresses Station Service Water, as discussed in Section 9.2 of the Final Safety Analysis Report (FSAR), as submitted in Part 2 of the Bell Bend Nuclear Power Plant Combined License Application (COLA).

The enclosure provides our response to RAI No. 81, Question 09.02.01-1, which includes revised COLA content. This future revision of the COLA is the only new regulatory commitment.

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

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

Executed on February 12, 2010

Respectfully,

Rocco R. Sgarro

RRS/kw

Enclosure: As stated

D079
NRO

cc: (w/o Enclosures)

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Enclosure 1

Response to NRC Request for Additional Information No. 81, Question 09.02.01-1
Bell Bend Nuclear Power Plant

Question 09.02.01-1:

Supplemental information is provided in Section 9.2.1 of the Bell Bend FSAR that does not pertain to the essential service water system (ESWS). In particular, the information is related to FSAR Chapter 2 considerations (e.g., COL Items 2.0-1, 2.3-1, 2.3-2, 2.3-3, and 2.3-10). Because this information does not pertain to the ESWS and it is not evaluated in Section 9.2.1 of the Safety Evaluation Report, the applicant is requested to relocate this information to the Chapter 2 sections of the Bell Bend FSAR that are relevant.

Response:

PPL Bell Bend, LLC will remove the supplemental information that does not pertain to the Essential Service Water System (ESWS) from the BBNPP FSAR Section 9.2.1. The BBNPP FSAR Chapter 2 already contains the climatological-meteorological information relevant to COL Items 2.0-1, 2.3-1, 2.3-2, 2.3-3, and 2.3-10.

COLA Impact:

The BBNPP FSAR Section 9.2.1 will be modified as shown.

9.2.1 ESSENTIAL SERVICE WATER SYSTEM

No departures or supplements.

9.2.1.1 Design Bases

{No departures or supplements. ~~The temperatures in U.S. EPR FSAR Tables 2.1-3 and 2.1-4 envelope the temperature data for the BBNPP Site and are described below.~~

~~The BBNPP site-specific wet and dry bulb temperatures were determined using the guidance of Regulatory Guide 1.27 (NRC, 1976) and 23 years of climatology data (1978-2000) from the Wilkes-Barre/Scranton National Weather Service site, that is 36 miles (58 km) northeast of the BBNPP site. The data analysis yielded a maximum calculated wet bulb temperature, when applying a 0% exceedance criterion, of 75.4° F (24.1° C) with a coincident dry bulb temperature of 95.3° F (37° C). The 0% exceedance criterion means that the wet bulb temperature does not exceed the 0% exceedance value for more than two consecutive data occurrences, and the Wilkes-Barre/Scranton National Weather Service data was recorded hourly.~~

~~The Essential Service Water System (ESWS) cooling towers for BBNPP are designed in accordance with Regulatory Guide 1.27 guidance and the requirements of U.S. EPR FSAR Table 2.1-1. The tower size is thus based on a wet bulb temperature of 81° F (27° C) with a coincident 115° F (46° C) dry bulb temperature. The wet bulb temperature includes a 1° F (0.5° C) addition for "interference" due to each pair of ESWS towers' close proximity to each other.~~

~~The higher wet bulb temperature of 75.4° F (24.1° C) is the controlling factor for establishing the tower basin water temperature because of the more limited ability of the ambient air to absorb heat energy in moving through the tower. Alternatively, the higher difference between wet and coincident dry bulb temperatures (81° F (27° C) wet bulb coincident with 115° F (46° C) dry bulb) indicates lower humidity and resultant higher evaporation rate, thus making this the~~

~~controlling factor for determining both makeup water demand and required tower basin water volume. In applying these factors to BBNPP , the resulting maximum ESWS tower basin water temperature is less than the 95° F (35° C) worst-case design basis for the ESWS and the Component Cooling Water System (CCWS) heat exchangers. Based on the analysis of the ESWS (i.e., Ultimate Heat Sink (UHS)) with local meteorological data, it has been determined that the maximum ESWS supply temperature is less than 95° F (35° C) and the maximum evaporative loss from a ESWS cooling tower is 571 gpm (2,160 lpm), during design basis accident conditions, as described in U.S. EPR FSAR Table 2.1-1.~~}

9.2.1.8 References

{No departures or supplements. ~~**NRC, 1976.** Ultimate Heat Sink for Nuclear Power Plants (for Comment), Regulatory Guide 1.27, Revision 2, U. S. Nuclear Regulatory Commission, January 1976.~~}