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

**BELL BEND NUCLEAR POWER PLANT
RESPONSE TO RAI No. 34
BNP-2009-242 Docket No. 52-039**

References: 1) M. Canova (NRC) to R. Sgarro (PPL Bell Bend, LLC), Bell Bend COLA – Request for Information No. 34 (RAI No. 34) – ICE1 - 1990, email dated July 9, 2009

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 Instrumentation, Controls and Electrical Engineering, as discussed in Section 9.5 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. 34, Questions 09.05.02-1 through 09.05.02-5, which include revised COLA content. A Licensing Basis Document Change Request has been initiated to incorporate this change in a future revision of the COLA. This future revision of the COLA is the only new regulatory commitment.

Should you have 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 August 26, 2009

Respectfully,


Rocco R. Sgarro

RRS/kw

Enclosure: As stated

D079
NRD

cc: (w/o Enclosures)

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Enclosure 1

Response to NRC Request for Additional Information Set No. 34
Bell Bend Nuclear Power Plant

Question 09.05.02-1

Identify the primary and backup power sources, and their transfer capability, for the offsite communication systems, in particular, the NRC's Emergency Notification System (ENS) and other Emergency Offsite Communications paths. Include this information in the Bell Bend FSAR.

The Bell Bend COL FSAR Section 9.5.2.3 states that: "Except for the sound-powered system, the communication subsystem are powered from the class 1E Emergency Uninterruptable Power Supply System (EUPS) or the Class 1E Emergency Power Supply System (EPSS), which are supported by the emergency and station blackout (SBO) diesel generators to provide backup power." NRC Bulletin 80-15 states that the licensees should address ENS system availability in case of a loss-of-offsite-power event.

Identify which power source or sources among the EUPS, EPSS and the SBO diesel generator provide primary and backup power to the offsite communications paths, including the ENS, NRC's Health Physics Network HPN, NRC's Emergency Response Data Network (ERDS) and backup communications methods. Provide this information and include it in Bell Bend COL FSAR Section 9.5.2.3.

09.05.02-1 Response

ENS and HPN Communications

The Bell Bend ENS and HPN lines in the Control Room and the TSC will be powered from either a safety related power source or non-safety related power source with a UPS having either a battery or generator backup. The system will be routed through the site PABX which provides access to multiple paths for call routing. U.S. EPR FSAR Revision 1 Section 9.5.2.2.2 states that the PABX is equipped with a DC power unit and connected to a rectifier/charger and battery system having two hours of backup battery capacity.

Additional conceptual design of the ENS and HPN communication system, including power supplies is necessary to specify which of the power sources will provide the primary and backup power supply to the ENS and HPN communication system. The design of the ENS and HPN communication system will comply with the requirements of Appendix E to 10 CFR Part 50, Part IV.E(9)

The Bell Bend EOF is located outside the 10 mile EPZ on East Mountain Boulevard in Plains Township, off PA Route 115 (five miles north of exit 105 (old exit 36) of the Northeast Extension of the Pennsylvania Turnpike and one mile south of exit 170A (old exit 47A) of Interstate 81. The ENS and HPN lines in the EOF are powered via two independent underground lines that supply the industrial park complex.

The long distance portion of the lines are provided for and paid by the NRC using direct access lines (DALs) to the Federal long distance service directed through a toll-free (800/888) exchange.

In addition to the primary ENS and HPN lines (dedicated system), alternate methods of communications are provided through the use of standard telephone circuits which would be used to connect into the NRC bridge in the event of a failure of the dedicated system. Cellular telephones may also be used as needed.

ERDS

The NRC ERDS system, which currently utilizes dial up telephone modems, is being replaced by an internet based system (see draft NRC RIS 2009-xx, Emergency Response Data System Upgrade from Modem to Virtual Private Network Appliance, ML091350153).

At this time the level of plant design information is not detailed enough to identify the type of equipment used to transmit ERDS data or its specific location. When installed, the Bell Bend equipment used to provide plant data to the ERDS will comply with all applicable regulations for primary and backup power.

COLA Impact:

Changes to COLA Part 5 describing primary and backup power for the ENS and HPN are included in Attachment 2 of this Enclosure.

Question 09.05.02-2

“Emergency Communications” information is documented for the Bell Bend COL FSAR and located in Part II, Section F of the Bell Bend COL Emergency Plan. Bell Bend COL FSAR Section 9.5.2, which describes all site communications, and therefore, includes Emergency Communications and other site-specific information should refer to FSAR Part II, Section F. Provide a reference in Section 9.5.2 of the Bell Bend COL FSAR to the Bell Bend COL Emergency Plan, Part II, Section F.

09.05.02-2 Response

U.S. EPR FSAR Revision 1 Section 9.5.2.2.5, Emergency Offsite Communications, provides a reference to Section 13.3, which is the Emergency Plan. Bell Bend COL FSAR Sections 9.5.2 and 9.5.2.2 state no departures or supplements to the U.S. EPR FSAR Revision 1 Sections 9.5.2 and 9.5.2.2.

COLA Impact:

No change to the COLA is required.

Question 09.05.02-3

Provide additional details on the backup power sources for communications to the locations of the Commonwealth and Local warning points.

Appendix E to 10 CFR Part 50, IV.E(9), requires that the applicant provide reliable back up power in the case of a loss of offsite power. This is also reinforced by guidance from NRC Bulletin 80-15. Part 50, Appendix E, IV.D(1) requires a description of the administrative and physical means for notifying local, State and Federal officials and agencies and agreements reached with these officials and agencies for the prompt notification of the public and for public evacuation or other protective measures, should they become necessary. Based on the staff's evaluation of the communications interfaces depicted in Figure F-1 of Section F of the Bell Bend COL Emergency Plan, the staff requests additional information to evaluate the adequacy of these interfaces to satisfy the requirements of Part 50, Appendix E, IV.D(1).

Figure F-1, in Bell Bend COL Emergency Plan, Part II, Section F, shows that the communication ties between site EOF and local and Commonwealth warning points are on commercial lines. Section F of the Emergency Plan does not provide details on the identity of the warning points. Figure F-1 does not specify whether this system is tied into the PBX Telephone System, Local Commercial lines or the Centrex Telephone Network. Please specify the locations of the local and Commonwealth warning points and the communication system used to connect to each warning point. Describe in detail the back-up power sources used for the communications method that allows for offsite communications to the warning points locations.

09.05.02-3 Response

The Centrex Telephone Network (CTN) is the primary system for emergency communications. It is currently in place at the Commonwealth and local facilities and is used by SSES. Bell Bend will utilize this system for emergency communications.

Warning points are located at the Commonwealth and risk county EOCs and 911 centers.

The Luzerne County EOC is located in the Emergency Management Building in Wilkes-Barre, Pennsylvania. The Columbia County EOC is located in the Columbia County Courthouse Annex in Bloomsburg, Pennsylvania. Both the Luzerne County Emergency Management Agency (LCEMA) and the Columbia County Department of Public Safety (CCDPS) have EOCs that meet or exceed the minimum Federal criteria for sufficient space, communications, warning systems, self-sufficiency in supplies and accommodations and radiological protection factor. Both counties maintain full-time employees, providing 24-hour per day coverage either at their EOC or their 911 Centers, to coordinate emergency planning and evaluation.

The State EOC is within the Pennsylvania Emergency Management Agency (PEMA) headquarters, located on Interstate Drive, one mile north of the Progress Avenue exit on Interstate 81. This center is equipped with a reliable communications system that includes CTN telephone connections between the EOC and the utility response facilities, as well as ties to all area and county EOCs.

Communications systems in the Control Room and the TSC will be powered from either a safety related power source or non-safety related power source with a UPS having either a battery or generator backup.

Communications systems in the EOF are powered via two independent underground power lines that supply the industrial park complex.

The EOF is equipped, and the TSC will be equipped, with a two-channel 150 MHz VHF radio system with digital voice privacy capability. The VHF radio is an emergency backup for communication with LCEMA and CCDPS.

Cellular telephones may also be used as needed.

COLA Impact:

No change to the COLA is required.

Question 09.05.02-4

Demonstrate that local environmental conditions will not impede the wireless communication system where supporting equipment is installed.

Section 9.5.2.III.1 of the SRP directs the staff to verify that effective communication will not be impeded by transmission through barriers, high-noise areas, personnel protective equipment, inadequate number of communication channels, interference between channels or subsystems, or interface from other electronic or electrical equipment. Bell Bend COL FSAR Section 9.5.2.3 states the following: "A portable wireless communication system will also be provided for use by fire brigade and other operations personnel required to achieve safe plant shutdown." The staff requests that the applicant provide additional information (1) to demonstrate that environmental conditions will not impede the Portable Wireless Communications system for which the equipment for this system will be installed (including noise level, electromagnetic interference (EMI), and radio frequency interference (RFI) as well as other potential impediments listed above); (2) as to whether the portable wireless system is intended to be a radio system per 10 CFR 73.55(f)(3); and as to whether the wireless system will serve as a back-up communications system to any dedicated telephone line system.

09.05.02-4 Response

U.S. EPR FSAR Section 9.5.2.3 states that the COL applicant referencing the U.S. EPR certified design will identify additional site-specific communication locations necessary to support effective communication between plant personnel in all vital areas of the plant during normal operation, as well as during accident conditions.

The Bell Bend COL FSAR Section 9.5.2.3 identifies the ESWEMS Pumphouse as one of these areas since it contains safety-related equipment and is a site-specific vital area.

- 1) Demonstration of the portable wireless communications system is addressed in U.S. EPR FSAR Section 9.5.2.2.1, Portable Wireless Communication System as follows:

The portable wireless communication system is designed to provide a standalone method of plant-wide communication between designated personnel equipped with, or having access to, wireless two way radios. This system, illustrated in Figure 9.5.2-1 - Portable Wireless Communication System, is provided for use by fire brigade and other operations personnel required to achieve safe plant shutdown. The radio equipment enables interface to the PA system, as well as to the digital telephone system. The portable radios can dial the digital telephone terminal extensions directly, access a paging channel, or dial to external telephone numbers via an interconnection to the public switched telephone network (PSTN).

The portable wireless communication system is comprised of transmitters, receivers, antennas, amplifiers, and radio base station equipment. Antennas and amplifiers are distributed throughout the plant to enable seamless radio coverage. Radio coverage is provided throughout the plant, although radio usage in certain instrumentation and control (I&C) areas are restricted due to potential EMI/RFI considerations. These areas will have posted warning signs. The COMS system is designed, installed, and tested so that I&C system circuits are not adversely impacted by EMI/RFI from transmitting sources.

The portable wireless communication system has an adequate number of channels to accommodate anticipated functions such as fire, operations, health physics, fuel reloading, emergency, and security.

Mobile, hand-held units are used for direct, unit-to-unit communication via the base station. These units are robust, highly reliable and can withstand the harsh operating environment of the facility. The air interface and radio equipment parameters are identical to that for the base station, except for transmitter power.

The base station equipment for the portable wireless communication system is housed in NEMA 250 Type 4 rated cabinets, which are physically separated from the other subsystem equipment such as the digital telephone, PA, and alarm system. Physical separation of the cabinets increases protection against a single accident or fire from affecting multiple modes of communication throughout the plant.

Repeaters are utilized to allow seamless radio coverage throughout the plant. Antennas and cables interconnecting the repeaters to the base station equipment are located in a manner to facilitate the improved radio signal penetration into areas that are not properly served by the primary antenna. In accordance with NRC RG 1.189 Fire Protection for Nuclear Power Plants, the repeaters are protected from exposure to fire damage.

Radio trunking is implemented through the use of a trunking controller. Trunking provides improved channel utilization, spectrum availability, and feature flexibility.

Bell Bend COL FSAR Section 9.5.2.2 states no departures or supplements to the U.S. EPR FSAR Section 9.5.2.2.

- 2) 10 CFR 73.55(f)(3) addresses target set equipment or elements that are not contained within a protected or vital area. The wireless communications system discussed in Bell Bend COL FSAR Section 9.5.2.3 refers to the ESWEMS Pumphouse which is located in a site-specific vital area of the plant.
- 3) The wireless communications system used in the ESWEMS Pumphouse is one of several communications systems available within the area. Other communications systems available in the ESWEMS Pumphouse include the plant digital telephone system, PA and alarm system, and sound powered system.

COLA Impact:

No change to the COLA is required.

Question 09.05.02-5

Provide clarification on the specific telephone circuits that will be used to facilitate site communications to the NRC.

In Bell Bend COL Emergency Plan, Part II, Section F, Figure F-3, a note states the following: "ENS and HPN circuits may use the federally maintained system, company tie lines, or PBX as dedicated primary communications systems and have commercial backups." Appendix E to 10 CFR Part 50, Part IV.E(9) requires the applicant to provide reliable communications paths, in particular, to address back-up communications methods and back-up power sources in the event of a loss of offsite power. Additional recommendations are also available in NRC Bulletin 80-15. The staff requests the following information:

1. Identify the primary telephone circuits for which emergency communications will be implemented. Provide the type of circuit employed as company telephone circuits or local telephone company circuits or federally maintained circuits (FTS 2001).
2. Provide the back-up communication method for NRC communications.
3. Provide the primary and secondary power sources for the primary and secondary communications paths.

09.05.02-5 Response

Bulletin 80-15 was issued to address a potential loss of ENS communications due to a loss of offsite power. At that time, the telecommunications systems and technologies were significantly different than they are today.

In SECY-98-0194, "Upgrading the NRC Operations Center Emergency Telecommunications System," the NRC staff identified options for more efficiently providing ETS services for nuclear power plants. The option supported by the staff and approved by the Commission in Staff Requirement Memorandum (SRM) dated December 9, 1998, involved using preexisting licensee communications networks to provide access to long distance service in a manner that would be independent of the local telephone company's switch. Booz-Allen Hamilton's (BAH's) study and NRC's survey of representative licensee sites indicated that most utilities had established corporate telecommunications capabilities which already provided independent access to long distance networks (i.e., avoided the local telephone company's switch). Therefore, ETS functionality could be provided over corporate networks at minimal additional cost to licensees and would eliminate the large recurring government costs associated with the NRC's dedicated circuits. This upgrade was implemented in FY 2001 as part of FTS 2001, a follow-on contract to FTS 2000. This upgrade is discussed in RIS 2000-011 "NRC Emergency Telecommunications System."

1. The configuration of the current NRC Emergency Telephone System (ETS) ENS line is a two-wire system, similar to a domestic phone system, which is configured as a "non-local serving wire center" analog telephone path.

As such, the Bell Bend ENS line would be routed through the site PBX which provides access to multiple paths for call routing. The long distance portion of the line is provided for and paid by the NRC using direct access lines (DALs) to the Federal long distance service directed through a toll-free (800/888) exchange. The current ETS design using DALs to bypass the local telephone switch ensures that emergency calls can be made even if the local telephone switch is congested or out of service.

2. FTS lines for Bell Bend will be installed in the Control Room, TSC and EOF. The geographic separation between the site and the EOF provides an inherent back-up capability. Additional back-up methods for NRC communications are provided through the use of standard telephone circuits which would be used to connect into the NRC bridge in the event of a failure of the dedicated FTS system. Cellular telephones may also be used as needed.
3. The Bell Bend ENS and HPN lines will be powered locally from either a safety related power source or non-safety related power source with a UPS having either a battery or generator backup. The system would be routed through the site PBX which provides access to multiple paths for call routing. The long distance portion of the lines are provided for and paid by the NRC using direct access lines (DALs) to the Federal long distance service directed through a toll-free (800/888) exchange. The current ETS design using DALs to bypass the local telephone switch ensures that emergency calls can be made even if the local telephone switch is congested or out of service.

COLA Impact:

No change to the COLA is required.

Attachment 1

**Revision to COLA Part 5
BBNPP Emergency Plan**

(The content below is taken from the BBNPP Emergency Plan Revision 1 Part II, Planning Standards and Criteria, Section F, Emergency Communications, Subsection 1, Communications/Notifications, Page F-3.)

f. NRC Communications (ENS and HPN)

Communications with the NRC Operations Center will be performed via the NRC ENS and HPN circuits or commercial telephone line. Information is normally communicated from an approved NRC Event Notification Worksheet prior to establishing an open ENS and/or HPN line.

{The Bell Bend ENS and HPN lines in the Control Room and the TSC are powered from either a safety related power source or non-safety related power source with a UPS having either a battery or generator backup. The system is routed through the site PABX which provides access to multiple paths for call routing. The PBAX is described in FSAR Section 9.5.2.2.2.

The Bell Bend ENS and HPN lines in the EOF are powered via two independent underground lines that supply the industrial park complex.}

Installation and use of these NRC telephones is under the direction of the NRC (see Figure F-3).

- 1) Emergency Notification System (ENS): Dedicated telephone equipment is in place between the site's Control Room and the NRC, with an extension of that line in the TSC. A separate line is available in the EOF with the capability of being patched with the site through the NRC. This line is used for NRC event notifications and status updates.
- 2) Health Physics Network (HPN): There also exists a separate dedicated telephone between the NRC, the TSC, and EOF for conveying health physics information to the NRC as requested or as an open line.