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March 3, 2010

ATTN: Document Control Desk  
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Washington, DC 20555-0001

**BELL BEND NUCLEAR POWER PLANT  
RESPONSE TO RAI Nos. 86 and 87  
BNP-2010-065      Docket No. 52-039**

- References:
- 1) M. Canova (NRC) to R. Sgarro (PPL Bell Bend, LLC), Bell Bend COLA – Request for Information No. 86 (RAI No. 86) – COLP-4082, email dated February 3, 2010
  - 2) M. Canova (NRC) to R. Sgarro (PPL Bell Bend, LLC), Bell Bend COLA – Request for Information No. 87 (RAI No. 87) – COLP-4083, email dated February 3, 2010

The purpose of this letter is to respond to the requests for additional information (RAI) identified in the referenced NRC correspondence to PPL Bell Bend, LLC. These RAIs address Organizational Structure of Applicant and Operating Organization, as discussed in Section 13.1 of the Final Safety Analysis Report (FSAR), and submitted in Part 2 of the Bell Bend Nuclear Power Plant Combined License Application (COLA).

The enclosure provides our responses to RAI No. 86, Questions 13.01.01-1 through 13.01.01-4, and RAI No. 87, Questions 13.01.02-13.01.03-1 through 13.01.02-13.01.03-5, which includes revised COLA content. 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 March 3, 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 Requests for Additional Information Nos. 86 and 87  
Bell Bend Nuclear Power Plant

**RAI 86**

**Question 13.01.01-1**

In accordance with NUREG-0800 (SRP), Section 13.1.1 I.1.A.iii, a description of the proposed plans for the review and approval of plant design features, including human factors engineering (HFE) considerations, should be included in the application as part of the design and construction responsibilities.

Please indicate where this information could be located in the application.

**Response:**

Bell Bend Nuclear Power Plant FSAR Section 13.1.1.1.1 describes the design and construction responsibilities for the organization. The description of the responsibility for human factors engineering will be specified in this section of the FSAR.

**COLA Impact:**

The COLA will be changed as shown. (Includes text inserted in response to RAI 87, Question 13.01.02-13.01.03-4)

**BBNPP FSAR Chapter 13:**

**13.1.1.1.1 Design and Construction Responsibilities**

The Senior Vice President and Chief Nuclear Officer (CNO), PPL Bell Bend, LLC reports to the Executive Vice President and Chief Operating Officer, PPL Corporation, and is responsible for managing the siting, fabrication, construction, startup, including pre-operational testing, procurement, and information technology during these phases. The siting, design of plant systems (including human factors engineering), fabrication, and construction activities, preparation of design and construction documents, and construction itself are contracted to qualified contractors, which are responsible to this position.

**13.1.1.4.1.6 Management Position Responsible for Engineering Services**

Prior to the Operations Phase, this position reports to the Vice President, Engineering, and is responsible for construction activities as described in Figure 13.1.1.1.1.9

During the operations phase, this position reports to the Vice President, Engineering. The Management Position Responsible for Engineering Services, provides direction for the Configuration Management group, Design Engineering groups (Mechanical/Civil design, I&C design, and Electrical design), and the Major Modifications group. Design Engineering groups provide on-site development of design related to plant modifications and the review of the design of plant systems (including human factors engineering).

The Management Position Responsible for Engineering Services directs a staff of assistant managers, supervisors, engineers and other technical personnel whose primary function is to provide technical support to the operation of BBNPP.

**Bell Bend QAPD:**

**Management Position Responsible for Engineering Services**

During the operations phase, this position reports to the Vice President, Engineering and is responsible for managing the review of the design of plant systems (including human factors engineering), modification, testing, configuration control, and technical support programs.

**RAI 86**

**Question 13.01.01-2**

In accordance with NUREG-0800 (SRP), Section 13.1.1 I.1.B.ii, a description of the development and implementation of the applicant's staff recruiting and training programs should be included in the application as part of the management organization for the initial test program.

Please indicate where this information could be located in the application.

**Response:**

Staff recruiting is part of the hiring process illustrated in Figure 13.1-3, Hiring and Training Schedule for Plant Staff, which will be added to FSAR Section 13.1. PPL Bell Bend will add information describing the development and implementation of the BBNPP training program to the BBNPP COLA.

**COLA Impact:**

The Bell Bend Nuclear Power Plant COLA FSAR Section 13.1.1 will be supplemented, as shown.

**13.1.1.1.10 Training**

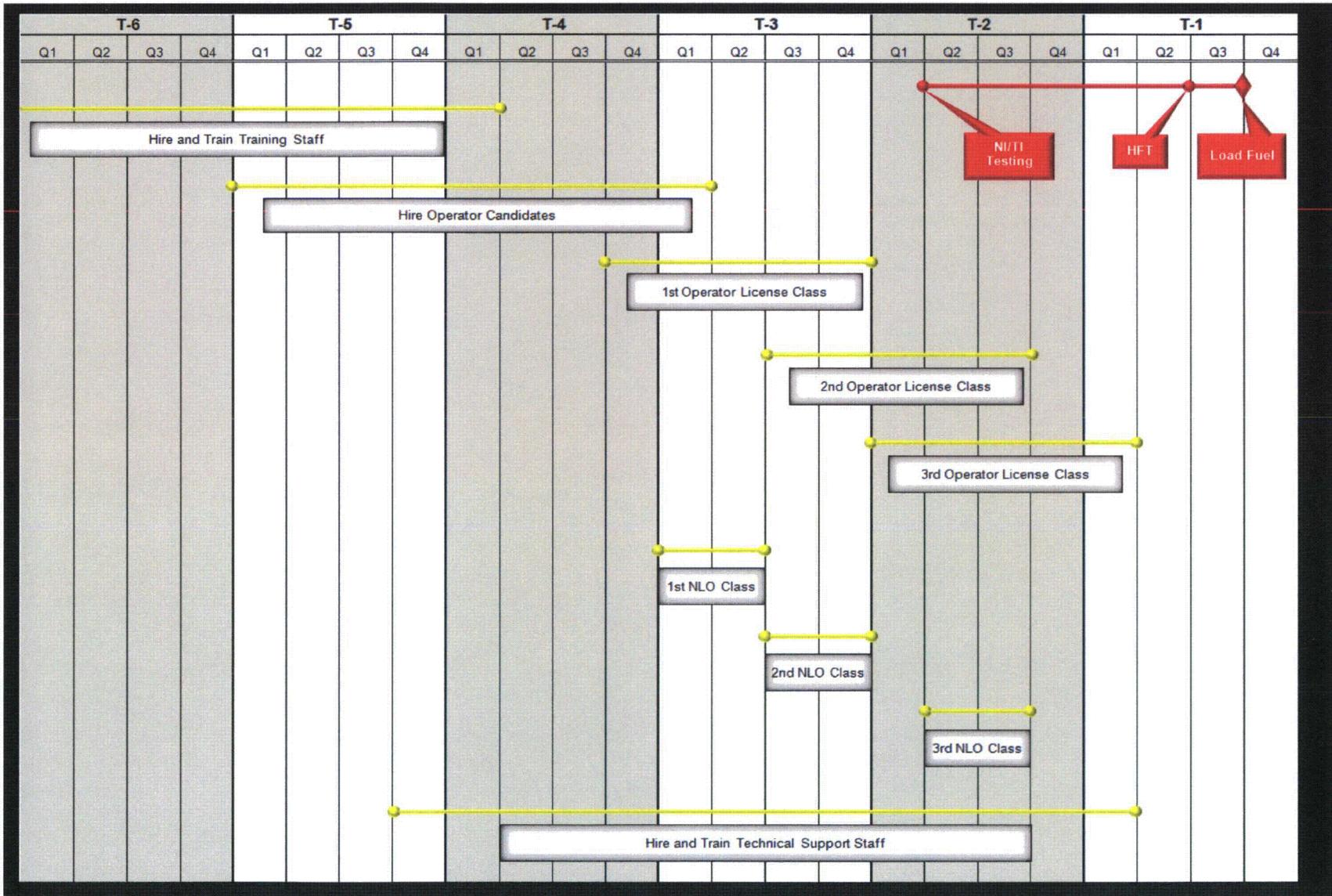
Standardized training services, including simulator training, are developed for a fleet of U.S. EPRs, including BBNPP, by UniStar Nuclear Energy Training. Staffing plans include hiring personnel to develop normal and emergency operating procedures and training lesson plans and associated material. Development of training material, procedures, and simulators is coordinated with the design and construction of BBNPP to assist in design validation, to provide experience for operating and other personnel, and to ensure trained and qualified staff is available when needed to support the safe and efficient design, construction, and testing of BBNPP.

Training services include:

- ◆ development of initial and continuing training programs (including methods and materials) for licensed and non-licensed BBNPP plant personnel;
- ◆ obtaining initial Institute of Nuclear Power Operations (INPO) training accreditation during the project development phase;
- ◆ coordination with the UniStar central training authority, for development of standardized non-licensed operator training material and sharing of EPR operating experience related to training; and
- ◆ development of standardized operating procedures and guidelines for use by BBNPP.

Figure 13.1-3, shown below, will be added to FSAR Section 13.1

Figure 13.1-3 {Hiring and Training Schedule for Plant Staff}<sup>1</sup>



Note:

1. T = Year of Commercial Operation

**RAI 86****Question 13.01.01-3**

In accordance with NUREG-0800 (SRP), Section 13.1.1 I.1.B.iii, a description of the proposed plans for the development of plant maintenance programs should be included in the application as part of the management organization for the initial test program.

FSAR Section 13.1.2.2.3.3 discusses responsibility for the development of the instrumentation and controls maintenance programs. Please indicate where this information could be located in the application for the remaining maintenance programs.

**Response:**

The responsibility for the development of the plant maintenance program will be clarified in FSAR Section 13.1.2.2.3.4, "Maintenance Supervisors." The development of the plant maintenance program, including preventive and predictive maintenance, is discussed in FSAR Section 13.5.2.2.6, Maintenance Procedures.

**COLA Impact:**

BBNPP COLA Part 2, FSAR Section 13.1.2.2.3.4 will be supplemented, as follows:

**13.1.2.2.3.4 Maintenance Supervisors**

The individuals serving in this position report to the Management Position Responsible for Maintenance, they are responsible for the development and implementation of maintenance programs, supervising maintenance activities, assisting in the planning of future maintenance efforts, guiding the efforts of mechanics, electricians, and instrumentation and controls technicians, and performing the planning and scheduling of preventive and corrective maintenance and surveillance testing. In addition, they supervise the activities of the craft personnel.

**RAI 86****Question 13.01.01-4**

In accordance with NUREG-0800 (SRP), Section 13.1.1 I.1.B.xi, the application should include, as part of the management organization for the initial test program, for the identified positions or classes of positions that have functional responsibilities other than for the COL application, the expected proportion of time assigned to the other activities.

Please indicate where this information could be located in the application.

**Response:**

The Startup Manager, Preoperational Test Engineers, Startup Test Engineers and System Engineers have functional responsibilities, other than for the COL application, in the initial test program. The Startup Manager, Preoperational Test Engineers, Startup Test Engineers are assigned exclusively to the initial test program and the System Engineers will devote approximately 25% of their time to the initial test program.

**COLA Impact:**

BBNPP COLA Part 2, FSAR Section 13.1.2. will be supplemented, as follows:

**13.1.2.2.3.8 Startup Manager**

This position reports to the Vice President, Engineering, and is responsible for the overall preoperational and startup test program. This individual is responsible for the development of preoperational and startup test procedures, providing technical advice to people conducting the tests, briefing personnel responsible for operation of the plant during the tests, ensuring that the tests are performed in accordance with the applicable procedures, and generating test reports. Approximately 100% of the Startup Managers' time will be spent supporting the initial test program. The Preoperational Test Engineers and Startup Test Engineers report to the Startup Manager. Approximately 100% of the Preoperational Test Engineers' and Startup Test Engineers' time will be spent supporting the initial test program.

**13.1.2.2.5.1 System Engineers**

A staff of System Engineers reports to the Engineering Support Supervisors. This group is responsible for balance of plant, electrical, mechanical, instrumentation and control, reactor systems, and reactor engineering, and focusing on day to day equipment and operational issues. They assist in planning programs for the plant to improve equipment performance, reliability or work practices, and conducting the operational test phase and analyzing the results. They are responsible for identifying plant spare parts for their applicable systems. Approximately 25% of the System Engineers' time will be spent supporting the initial test program.

## **RAI 87**

### **Question 13.01.02-13.01.03-1**

In accordance with NUREG-0800 (SRP), Section 13.1.2 – 13.1.3, “Operating Organization,” Section I.1.B, a description of the applicant’s commitment to meet the guidelines of Regulatory Guide 1.33 for onsite review and rules of practice should be included in the application.

Please indicate where this information could be located in the application.

### **Response:**

In response to NRC RAI 67, Question 17.5-7, PPL Bell letter BNP-2010-016, dated February 2, 2010, PPL Bell Bend, LLC stated:

“The BBNPP QAPD will be revised to commit to adhering to Regulatory Guides 1.8, 1.28 and 1.33.”

The requested information will be located in the BBNPP COLA Part 11A Quality Assurance Program Description (QAPD).

In response to NRC RAI 71, Question 01-2, PPL Letter BNP-2010-015, dated February 4, 2010, PPL Bell Bend, LLC stated:

“BBNPP FSAR 17.5.1 will be revised as follows:

#### **17.5.1 QA PROGRAM RESPONSIBILITIES**

The Bell Bend QAPD is submitted in Part 11 of this COL Application. The Bell Bend QAPD is applicable to the siting, design, fabrication, construction (including pre-operational testing), operation (including testing), maintenance and modification of the facility. The Bell Bend QAPD conforms to the criteria established in 10 CFR 50, Appendix B, (CFR, 2008a). PPL Bell Bend, LLC commits to implement the:

- ◆ Basic Requirements and Supplements of ANSI/NQA-1-1994, “Quality Assurance Requirements for Nuclear Facility Applications,” (ANSI, 1994) as described in the QAPD.
- ◆ Specific subparts of NQA-1-1994, as described in the QAPD.

The Bell Bend QAPD conforms to the Regulatory Guides governing quality assurance identified or referenced in FSAR Section 1.9.1 with the exceptions taken as noted in FSAR Table 1.9-1. These Regulatory Guides are addressed in the Bell Bend QAPD, Section U.”

FSAR Table 1.9-1 “Conformance with Regulatory Guides” lists the exceptions to Regulatory Guides for BBNPP. Bell Bend Nuclear Power Plant conforms to applicable Regulatory Guides, including Regulatory Guide 1.33, and does not take exception to onsite review and rules of practice of Regulatory Guide 1.33.

### **COLA Impact:**

The COLA will not be changed as a result of this response.

**RAI 87**

**Question 13.01.02-13.01.03-2**

In accordance with NUREG-0800 (SRP), Section 13.1.2 – 13.1.3, “Operating Organization,” Section I.1.G, a schedule relative to fuel loading for each unit for filling all positions should be included in the application. FSAR sections 13.1.1, 13.1.1.2, and 13.1.2 state that “the schedule for filling key organization positions is provided in Table 13.1-1.”

Please indicate where in Table 13.1-1 this information could be located.

**Response:**

FSAR Table 13.1-1, “BBNPP Position/Site Specific Position Cross Reference,” includes four columns labeled: “Design Review Phase,” “Construction Phase,” “Pre-op Phase,” and “Operational Phase,” which are high level schedule milestones and list the functions, titles, and staffing for the milestones. BBNPP will update the title and number of non-licensed operators to reflect shift staffing plans and add a more detailed hiring and training schedule for plant staff in FSAR Section 13.1.

**COLA Impact:**

The Bell Bend Nuclear Power Plant COLA FSAR Section 13.1 will be updated, as shown:

**13.1.1 MANAGEMENT AND TECHNICAL SUPPORT ORGANIZATION**

{Section 17.5 and the Bell Bend Quality Assurance Program Description (PPL Bell Bend LLC, COLA Part 11a) describe the authority and lines of communication for the Bell Bend Organization that will support the siting, design, licensing, engineering, procurement, fabrication, construction, startup and operation of BBNPP facilities.

The organizations include, but are not limited to, Project Management, Regulatory Affairs, Technical Services, Operations Support, and Quality & Performance Improvement. An estimate of the number of persons to be assigned to various groups, and the schedule for filling key organization positions are provided in Table 13.1-1 and are shown in Figure 13.1-3.

**13.1.1.2 Pre-Operational Responsibilities**

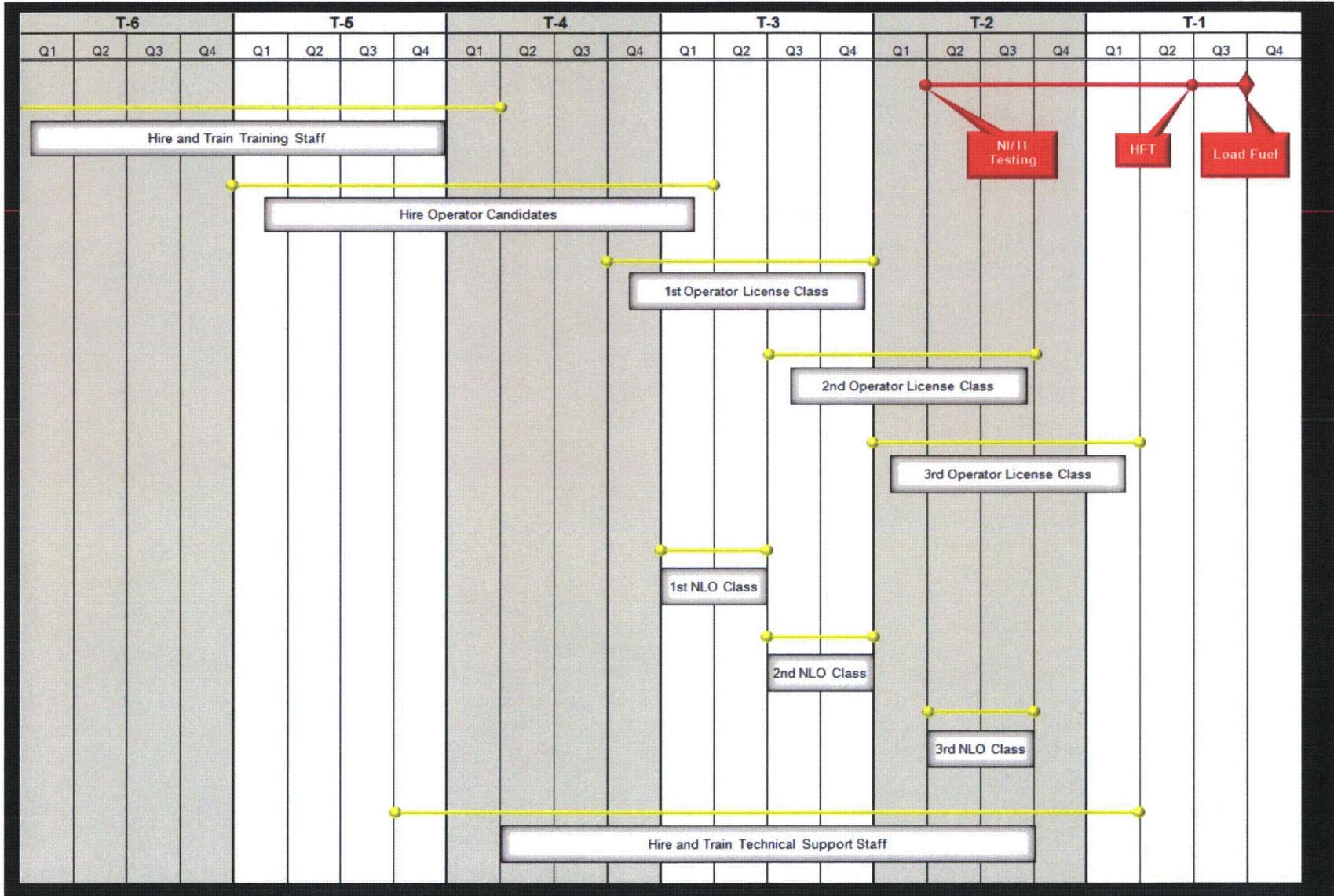
An estimate of the number of persons to be assigned to various groups, and the schedule for filling the corporate and operating organization positions are provided in Table 13.1-1 and are shown in Figure 13.1-3. To support these personnel in the performance of their duties and responsibilities, PPL Bell Bend, LLC will develop and implement the appropriate training programs in a timely manner such that personnel receive the required training prior to performing their assigned duties. The training program is described in Section 13.2.

Table 13.1-1-{BBNPP Position/Site Specific Position Cross Reference}

Nuclear Function	Function Position (ANS-3.1-1993 section)	Nuclear Plant Position (Site-Specific)	Estimated Numbers of Full Time Equivalents			
			Design Review Phase	Construction Phase	Pre-op Phase	Operational Phase
	Non-Licensed Operator (4.5.2)	Equipment Auxiliary Operator			42 <u>30</u>	42 <u>30</u>

Figure 13.1-3, shown below, will be added to FSAR Section 13.1

Figure 13.1-3 {Hiring and Training Schedule for Plant Staff}<sup>1</sup>



Note:

1. T = Year of Commercial Operation

**RAI 87****Question 13.01.02-13.01.03-3**

In accordance with NUREG-0800 (SRP), Section 13.1.2 - 13.13, "Operating Organization," Section I.2.A, the application should include an organization chart with the title of each position, the minimum number of persons to be assigned to duplicated positions, the number of operating shift crews, and the positions for which reactor operator and senior reactor operator licenses are required.

Please indicate where this information could be located in the application.

**Response:**

BBNPP COLA FSAR Table 13.1-1 provides the site specific titles for each nuclear position as well as the number of persons to be assigned to duplicate positions.

Operations shift personnel are discussed in FSAR Section 13.1.2.2.2. The operating shift crews are discussed in FSAR Section 13.1.2.3. Table 13.1-2 defines the position titles, license requirements and minimum shift staffing for various modes of operation.

The FSAR will be revised to add a diagram of the BBNPP Operating Organization illustrating the title of each position, lines of responsibility, number of personnel, and license requirements for shift staffing to the BBNPP COLA.

**COLA Impact:**

The Bell Bend Nuclear Power Plant FSAR will be changed as shown.

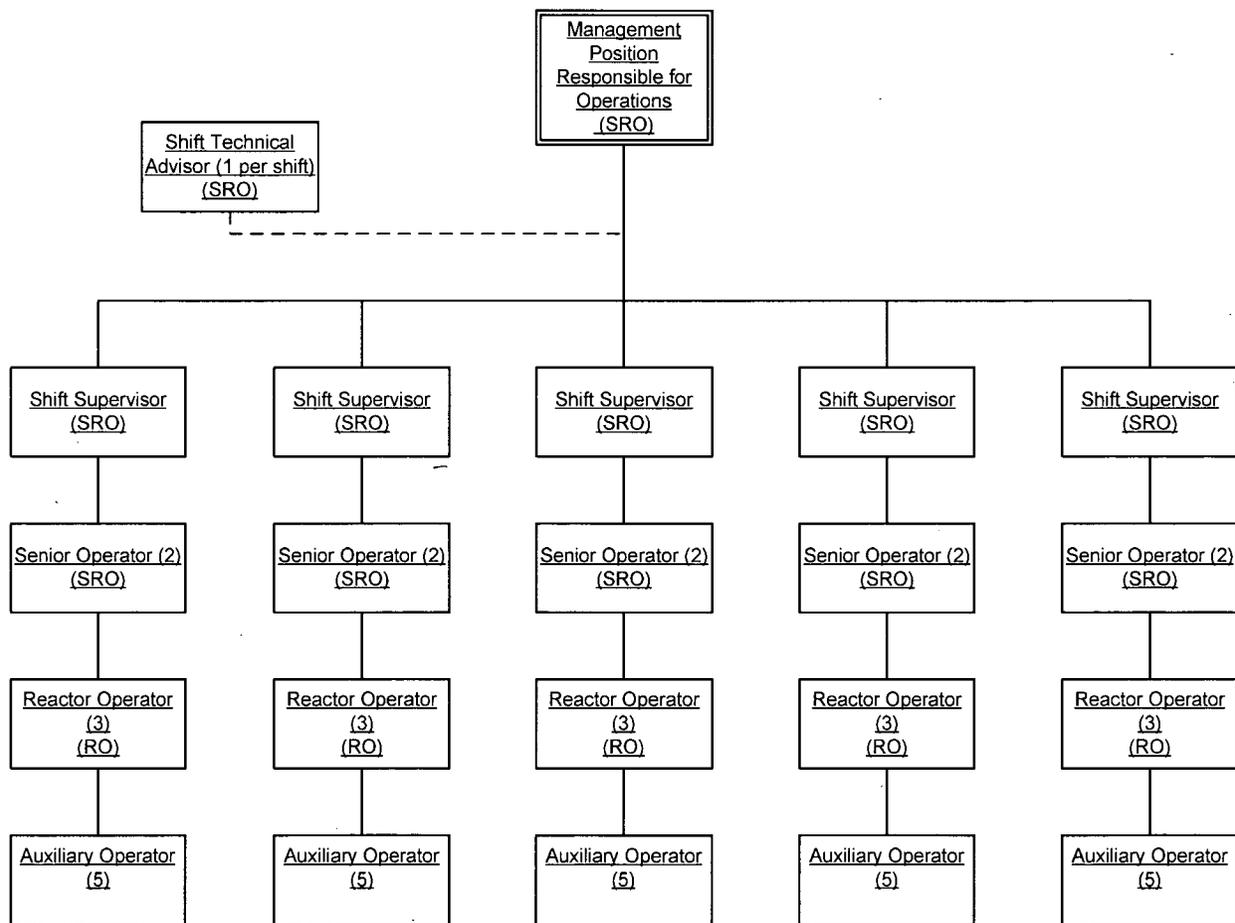
**13.1.2.2.1.3 Management Position Responsible for Operations**

This position reports to the Management Position Responsible for Direction of Plant Operations and is responsible for the day-to-day operation of all equipment associated with the generation of power including Chemistry and Radwaste. This position assures the safe, reliable, and efficient operation of the plant within the constraints of applicable regulatory requirements, operating license and the quality assurance program. This position has the authority to remove equipment from service, if the equipment is judged to be unsafe to operate. This individual coordinates the maintenance of adequate records to historically record the operation of the unit. The Management Position Responsible for Operations shall have a Senior Reactor Operator (SRO) license.

**13.1.2.3 Operating Shift Crews**

The shift manning for the unit will be a five shift rotation, with one shift dedicated to training at any given time. Table 13.1-2 defines the position titles, license requirements and minimum shift manning for various modes of operation. Figure 13.1-2 illustrates the operating shift organization. The operating shift staffing meets or exceeds the requirements of NUREG-0737, Action Plan Items I.A.1.1 and I.A.1.3 (NRC, 1980), 10 CFR 50.54(m) (CFR, 2008), and the NRC's "Policy Statement on Engineering Expertise on Shift" (NRC, 1986)

Figure 13.1-2 {Bell Bend Nuclear Power Plant Operating Shift Organization}<sup>1,2</sup>



Notes:

1. The number of personnel greater than one assigned to the position is indicated in parenthesis.

2. The license requirement is indicated in parenthesis.

## RAI 87

### Question 13.01.02-13.01.03-4

In accordance with NUREG-0800 (SRP), Section 13.1.2 – 13.1.3, "Operating Organization," Section I.2.C, the application should include a description, for each position, of the functions, responsibilities, and authorities and, where applicable, required interfaces with offsite personnel or positions identified in Section 13.1.1 of the application. Such interfaces include defined lines of reporting responsibilities (e.g., from the plant manager to the immediate superior), lines of authority, and communication channels.

Please indicate where this information could be located in the application.

#### Response:

The Senior Vice President and CNO, PPL Bell Bend, LLC reports to the Executive Vice President and Chief Operating Officer, PPL Corporation, and is responsible for managing the siting, design, fabrication, and construction activities. Preparation of design and construction documents, and construction itself are contracted to qualified contractors, which are responsible to the Senior Vice President and CNO, as discussed in FSAR Section 13.1.1.1.1.

BBNPP COLA FSAR, Figure 13.1-1, illustrates the Bell Bend Nuclear Power Plant site organization. The description, function, responsibilities and authorities of each position are discussed in Section 13.1.1 of the BBNPP FSAR and Section A of the Bell Bend QAPD.

BBNPP COLA Part 1: General Information, Figure 1.0-1, Organizational Structure, illustrates the PPL Corporate Structure with which the site organization interfaces.

#### COLA Impact:

The Bell Bend Nuclear Power Plant COLA will be changed as shown. (Includes text inserted in response to RAI 86, Question 13.01.01-1)

*Section A, Bell Bend QAPD:*

#### **Senior Vice President and CNO, PPL Bell Bend, LLC (onsite)**

This position reports to the Executive Vice President and Chief Operating Officer, PPL Corporation, and is responsible for the overall corporate QA policy, for the implementation of the quality assurance program and provides executive direction and guidance as well as promulgates corporate policy through the Company's senior management staff.

*Section 13.1.1, BBNPP FSAR:*

#### **13.1.1.1.1 Design and Construction Responsibilities**

The Senior Vice President and Chief Nuclear Officer (CNO), PPL Bell Bend, LLC reports to the Executive Vice President and Chief Operating Officer, PPL Corporation, and is responsible for managing the siting, fabrication, construction, startup, including pre-operational testing, procurement, and information technology during these phases. The siting, design, of plant systems (including human factors engineering), fabrication, and construction activities, preparation of design and construction documents, and construction itself are contracted to qualified contractors, which are responsible to this position.

**RAI 87**

**Question 13.01.02-13.01.03-5**

In accordance with NUREG-0800 (SRP), Section 13.1.2 - 13.13, "Operating Organization," Section I.2.G, the application should include a description of the shift crew staffing plans specific to refueling operations.

Please indicate where this information could be located in the application.

**Response:**

The operating shift crew is discussed in FSAR Section 13.1.2.3, Operating Shift Crews. Table 13.1-2, Minimum Shift Crew Composition, defines the position titles, license requirements and minimum shift manning for various modes of operation including shutdown and refueling modes. The requirements for a Radiation Protection Technician and fire brigade team members are also specified.

**COLA Impact:**

The COLA will not be changed as a result of this response.