

# **Bell Bend Nuclear Power Plant**

## **Combined License Application**

### **Part 4: Technical Specifications and Bases**

Revision 2 |

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## **PART 4 TECHNICAL SPECIFICATIONS AND BASES**

### **Introduction**

The U.S. EPR Generic Technical Specifications and Bases, provided in Chapter 16 of the U.S. EPR FSAR, are incorporated by reference with the following departures and supplements.

Section C.III.1 of Regulatory Guide 1.206 states for Chapter 16 that:

10 CFR Part 52 requires that an applicant for a COL that wishes to reference an approved certified design listed in an appendix to 10 CFR Part 52, e.g., Appendix A to Part 52, Section IV.A.2.c, include as part of its application plant-specific TS, consisting of the generic and site-specific TS, that are required by 10 CFR 50.36 and 10 CFR 50.36a.

The U.S. EPR FSAR is not yet a certified design. As such, the Technical Specifications and Bases are undergoing Staff review and are evolving as that review progresses. In addition, the U.S. EPR COL applicants continue to work with AREVA NP to ensure that the U.S. EPR Generic Technical Specifications are complete and accurate and encompass minor plant specific differences.

To simplify review of this COL Application and reinforce the consistency of this facility with the U. S. EPR design, a complete set of site specific Technical Specifications will not be included in this COLA part until after the Advanced SER for the U.S. EPR is issued by the NRC Staff.

The differences from Revision 1 of the U.S. EPR Design Certification, either due to Reviewer's Notes and brackets called out within the body of the U.S. EPR Generic Technical Specifications and Bases, or as identified by this applicant, are described and justified in the discussion below:

## GENERIC CHANGES

These changes are made for all UniStar fleet COLAs.

### 1 LCO 3.3.1 PROTECTION SYSTEM (PS)

#### Generic Technical Specifications:

- a. LCO 3.3.1, "Protection System," includes a Reviewer's Note in the ACTIONS that states:

"The COL Applicant may revise Condition C, Surveillance Requirements 3.3.1.4 and 3.3.1.6, and Table 3.3.1-2 to reflect the use of a Setpoint Control Program."

- b. Surveillance Requirement 3.3.1.4 states:

"Perform CALIBRATION."

- c. Surveillance Requirement 3.3.1.6 states:

"Perform CALIBRATION."

- d. A Reviewer's Note at the beginning of Table 3.3.1-2 states:

"[Reviewers Note: The values specified in brackets in the Limiting Trip Setpoint column are included for reviewer information only. A plant-specific setpoint study will be conducted. The values in Limiting Trip Setpoint column will then be replaced after the completion of this study.]"

- e. Table 3.3.1-2 contains a "Limiting Trip Setpoint / Design Limit" column. Bracketed numerical values are provided for some reactor trips, Engineered Safety Features Actuation System signals, and Permissives.

- f. Table 3.3.1-2, Footnote b, states:

"If the as-found setpoint is outside its predefined as-found tolerance, then the Trip/Actuation Function shall be evaluated to verify that it is functioning as required before returning the Trip/Actuation Function to service."

- g. Table 3.3.1-2, Footnote c, states:

"The setpoint shall be reset to a value that is within the as-left tolerance around the Limiting Trip Setpoint (LTSP) at the completion of the surveillance; otherwise, the division shall be declared inoperable. Setpoints more conservative than the LTSP are acceptable provided that the as-found and as-left tolerances apply to the actual setpoint implemented in the Surveillance procedures to confirm Trip/Actuation Function performance. The methodologies used to determine the as-found and the as-left tolerances are specified in a document controlled under 10 CFR 50.59."

#### Plant Specific Technical Specifications:

- a. The Reviewer's Note in the Actions for LCO 3.3.1 is deleted.

- b. Surveillance Requirement 3.3.1.4 is revised to state:

“Perform CALIBRATION in accordance with Specification 5.5.18, “Setpoint Control Program (SCP).””

- c. Surveillance Requirement 3.3.1.4 is revised to state:

“Perform CALIBRATION in accordance with Specification 5.5.18, “Setpoint Control Program (SCP).””

- d. The Reviewer's Note at the beginning of Table 3.3.1-2 is deleted.

- e. Table 3.3.1-2 contains a “Limiting Trip Setpoint / Design Limit” column. Where a numerical setpoint is provided in the Limiting Trip Setpoint / Nominal Value column in Table 3.3.1-2 (as opposed to a footnote), the numerical setpoint is being replaced with a new footnote “(w)”. Any existing superscript footnotes associated with the existing numerical Limiting Trip Setpoints / Nominal Values shall remain (i.e., Footnotes (b) and (c)). The new footnote will be placed at the bottom of each page of the table and shall state:

“(w)The Limiting Trip Setpoint / Nominal Value for this Trip / Actuation Function / Permissive is as specified in the Setpoint Control Program.”

Table 3.3.1-2 contains a “Limiting Trip Setpoint / Design Limit” column. The brackets around the reactor trips, Engineered Safety Features Actuation System signals, and Permissives are deleted.

- f. Table 3.3.1-2, Footnote b, is revised to state:

“If the as-found setpoint is outside its predefined as-found tolerance, then the Trip/Actuation Function shall be evaluated to verify that it is functioning as required before returning the Trip/Actuation Function to service in accordance with the Setpoint Control Program.”

- g. Table 3.3.1-2, Footnote c, is revised to state:

“The setpoint shall be reset to a value that is within the as-left tolerance around the Limiting Trip Setpoint (LTSP) at the completion of the surveillance; otherwise, the division shall be declared inoperable. Setpoints more conservative than the LTSP are acceptable provided that the as-found and as-left tolerances apply to the actual setpoint implemented in the Surveillance procedures to confirm Trip/Actuation Function performance. The methodologies used to determine the as-found and the as-left tolerances are specified in the Setpoint Control Program.”

**Justification:**

- a. A Setpoint Control Program is being incorporated into the plant-specific Technical Specifications. The Reviewer's Note is no longer necessary.
- b. The CALIBRATION of the Boron concentration sensors must be performed in accordance with the requirements of the Setpoint Control Program. The reference to the location of the Setpoint Control Program in the “Programs and Manuals”

section of the Technical Specifications is provided to ensure compliance with the stated requirements.

- c. The CALIBRATION of specified reactor trip and Engineered Safety Feature sensors must be performed in accordance with the requirements of the Setpoint Control Program. The reference to the location of the Setpoint Control Program in the "Programs and Manuals" section of the Technical Specifications is provided to ensure compliance with the stated requirements.
- d. A Setpoint Control Program is being incorporated into the plant-specific Technical Specifications. The Reviewer's Note is no longer necessary.
- e. A Setpoint Control Program is being incorporated into the plant-specific Technical Specifications. Specific setpoints will no longer be included in Technical Specification Table 3.3.1-2. The brackets in the column are no longer required and the other changes are necessary to specify the location of the setpoints.
- f. The wording of the footnote is revised to reflect the use of a Setpoint Control Program.
- g. The wording of the footnote is revised to reflect the use of a Setpoint Control Program.

## 2 LCO 3.7.10 CONTROL ROOM EMERGENCY FILTRATION (CREF)

### **Generic Technical Specifications:**

TS LCO 3.7.10, "Control Room Emergency Filtration (CREF)," Required Action B.2 and Required Action D.1, contain design information on toxic gas and hazardous chemicals.

### **Plant Specific Technical Specifications:**

This section of the U. S. EPR Generic Technical Specifications is incorporated by reference with the following departures:

The design information regarding toxic gas and hazardous chemicals is deleted from the Plant Specific TS and Bases.

### **Justification:**

Toxic gas and hazardous chemical automatic protection for the Control Room Envelope is not required based on the site-specific evaluation provided in Part 2 of this COL Application (FSAR Sections 2.2.3 and 6.4.4.).

## 3 LCO 3.7.15 SPENT FUEL STORAGE POOL BORON CONCENTRATION AND ENRICHMENT

### **Generic Technical Specifications:**

TS LCO 3.7.15, "Spent Fuel Storage Pool Boron Concentration and Enrichment," includes a Reviewer's Note that states "The design of the spent fuel storage racks is to be provided by the COL applicant. The required boron concentration will be provided as part of the spent fuel rack design." The boron concentration is provided as bracketed text.

**Plant Specific Technical Specifications:**

A plant specific LCO is not being developed at this time.

**Justification:**

As discussed in FSAR Section 9.1, the design and analysis for the new and spent fuel storage racks will be incorporated into a future revision, which will incorporate additional analyses to bound the site-specific conditions at BBNPP. Reviewer's Notes and bracketed information in the Generic Technical Specifications will be addressed in a subsequent revision to this COLA.

**4 LCO 3.7.16 SPENT FUEL STORAGE****Generic Technical Specifications:**

TS LCO 3.7.16 includes a Reviewer's Note that states "The design of the spent fuel storage racks is to be provided by the COL applicant. The required spent fuel storage configuration will be provided as part of the spent fuel rack design."

**Plant Specific Technical Specifications:**

A plant specific LCO is not being developed at this time.

**Justification:**

As discussed in FSAR Section 9.1, the design and analysis for the new and spent fuel storage racks will be incorporated into a future revision, which will incorporate additional analyses to bound the site-specific conditions at BBNPP. Reviewer's Notes and bracketed information in the Generic Technical Specifications will be addressed in a subsequent revision to this COLA.

**5 TS 4.3 FUEL STORAGE****Generic Technical Specifications:**

TS 4.3, "Fuel Storage," Includes a Reviewer's Note that states, "The design of the spent fuel storage racks is to be provided by the COL applicant. The required boron concentration will be provided as part of the spent fuel rack design."

**Plant Specific Technical Specifications:**

The Reviewer's Note in Section 4.3 is deleted.

**Justification:**

A Reviewer's Note for boron concentration is provided in TS 3.7.15. Section 4.3 does not contain any information related to boron concentration.

**6 TS 4.3.1 CRITICALITY****Generic Technical Specifications:**

TS 4.3.1, "Criticality," includes a Reviewer's Note that states "Storage rack uncertainties are discussed in the FSAR or COLA Section 9.1." In addition, TS 4.3.1 includes brackets around the center-to-center distances in 4.3.1.1.c and 4.3.1.2.d.

**Plant Specific Technical Specifications:**

A plant specific DesignFeature is not being developed at this time.

**Justification:**

As discussed in FSAR Section 9.1, The design and analysis for the new and spent fuel pool storage racks will be incorporated into a future revision , which will incorporate additional analyses to bound the site-specific conditions at BBNPP. Reviewer's Notes and bracketed information in the Generic Technical Specifications will be addressed in a subsequent revision to this COLA.

## 7 TS 4.3.3 CAPACITY

**Generic Technical Specifications:**

TS 4.3.3, "Capacity," contains bracketed requirements for the COL application to provide the capacity for spent fuel storage in the spent fuel storage pool.

**Plant Specific Technical Specifications:**

A plant specific DesignFeature is not being developed at this time.

**Justification:**

As discussed in FSAR Section 9.1, The design and analysis for the new and spent fuel pool storage racks will be incorporated into a future revision , which will incorporate additional analyses to bound the site-specific conditions at BBNPP. Reviewer's Notes and bracketed information in the Generic Technical Specifications will be addressed in a subsequent revision to this COLA.

## 8 TS 5.1 RESPONSIBILITY

**Generic Technical Specifications:**

TS 5.1, "Responsibility," includes two Reviewer's Notes:

1. "Titles for members of the unit staff shall be specified by use of an overall statement referencing an ANSI Standard acceptable to the NRC staff from which the titles were obtained, or an alternative title may be designated for this position. Generally, the first method is preferable; however, the second method is adoptable to those unit staffs requiring special titles because of unique organizational structures.
2. The ANSI Standard shall be the same ANSI Standard referenced in Section 5.3, Unit Staff Qualifications. If alternative titles are used, all requirements of these Technical Specifications apply to the position with the alternative title applied with the specified title. Unit staff titles shall be specified in the Final Safety Analysis Report or Quality Assurance Plan. Unit staff titles shall be maintained and revised using those procedures approved for modifying/revising the Final Safety Analysis Report or Quality Assurance Plan."

**Plant Specific Technical Specifications:**

TS 5.1 is revised to remove the Reviewer's Notes and replace them with a note requiring that the organizational positions listed in the Administrative Controls section have corresponding plant-specific titles specified in the Final Safety Analysis Report (FSAR).



**Justification:**

The use of generic titles in the TS, and the inclusion of plant-specific, corresponding titles in the FSAR, is consistent with Improved Standard Technical Specifications, Revision 3.1 of NUREG-1430 through NUREG-1434.

**9 TS 5.2.2 UNIT STAFF****Generic Technical Specifications:**

TS 5.2.2, "Unit Staff," contains a Reviewer's Note specifying the number of non-licensed operators required for two units when both units are shutdown or defueled.

**Plant Specific Technical Specifications:**

TS 5.2.2, "Unit Staff," is revised to remove the Reviewer's Note.

**Justification:**

This is a single unit facility.

**10 TS 5.3 UNIT STAFF QUALIFICATIONS****Generic Technical Specifications:**

TS 5.3, "Unit Staff Qualifications," contains a Reviewer's Note on the specification of the minimum qualifications of the unit staff.

**Plant Specific Technical Specifications:**

TS 5.3, "Unit Staff Qualifications," is revised to remove the Reviewer's Note.

**Justification:**

The unit staff qualifications standards are provided consistent with the FSAR, including FSAR Section 13.2.

**11 TS 5.5.11 GASEOUS WASTE PROCESSING SYSTEM RADIOACTIVITY MONITORING PROGRAM****Generic Technical Specifications:**

TS 5.5.11, "Gaseous Waste Processing System Radioactivity Monitoring Program," contains a Reviewer's Note for COL applicants incorporating outdoor liquid radioactive waste storage tanks in their design.

**Plant Specific Technical Specifications:**

TS 5.5.11, "Gaseous Waste Processing System Radioactivity Monitoring Program," is revised to remove the Reviewer's Note.

**Justification:**

The plant specific design does not include outdoor liquid radioactive waste storage tanks.

**12 TS 5.5.15 CONTAINMENT LEAKAGE RATE TESTING PROGRAM****Generic Technical Specifications:**

TS 5.5.15, "Containment Leakage Rate Testing Program," contains a Reviewer's Note indicating that, as discussed in U. S. EPR FSAR Section 6.2.6, the U.S. EPR has no penetrations that are classified as bypass leakage paths.

**Plant Specific Technical Specifications:**

TS 5.5.15, "Containment Leakage Rate Testing Program," is revised to remove the Reviewer's Note.

**Justification:**

The plant specific design has no penetrations that are classified as bypass leakage paths.

**13 TS 5.5.17 CONTROL ROOM ENVELOPE HABITABILITY PROGRAM****Generic Technical Specifications:**

TS 5.5.17, "Control Room Envelope Habitability Program," contains design information regarding hazardous chemical release.

**Plant Specific Technical Specifications:**

This section of the U. S. EPR Generic Technical Specifications is incorporated by reference with the following departures:

The design information regarding hazardous chemical release is deleted from the Plant Specific Technical Specifications.

**Justification:**

Toxic gas and hazardous chemical automatic protection for the Control Room Envelope is not required based on the site-specific evaluation provided in Part 2 of this COL Application (FSAR Sections 2.2.3 and 6.4.4.).

**14 TS 5.5.18 SETPOINT CONTROL PROGRAM****Generic Technical Specifications:**

At the end of Technical Specification Section 5.5, "Programs and Manuals," a Reviewer's Note states that:

"The COL Applicant may add an additional program description to reflect the use of a Setpoint Control Program".

**Plant Specific Technical Specifications:**

- a. TS 5.5 is revised to remove the Reviewer's Note.
- b. The following program description is being added:

5.5.18 Setpoint Control Program (SCP)

- a. The Setpoint Control Program implements the regulatory requirement of 10 CFR 50.36(c)(1)(ii)(A) that technical specifications will include items in the category of limiting safety system settings (LSSS), which are settings for automatic protective devices related to those variables having significant safety functions.
- b. The Limiting Trip Setpoint (LTSP), Nominal Trip Setpoint (NTSP), Allowable Value (AV), Performance Testing Acceptance Criteria (PTAC), and As-Left Tolerance (ALT) for each applicable Technical Specification required automatic protection instrumentation function shall be calculated in conformance with the instrumentation setpoint methodology previously reviewed and approved by the NRC in the following documents:
  1. ANP-10275P-A, "U.S EPR Instrument Setpoint Methodology Topical Report," Revision 0, dated February 26, 2008 (ML080590482), and the conditions stated in the associated NRC safety evaluation.
  2. [ANP-10287P-A, "Incore Trip Setpoint and Transient Setpoint Methodology For U.S. EPR," Revision #, dated Month dd, yyyy, (MLxxxxxxx)], and the conditions stated in the associated NRC safety evaluation, [Letter to AREVA NP from NRC, Title, dated Month, dd, yyyy, (MLxxxxxxx)].
- c. For each required Technical Specification automatic protection instrumentation function, performance of CALIBRATION surveillances shall include the following:
  1. The as-left value of the instrument division trip setting shall be the value at which the division was set at the completion of the surveillance with no additional adjustment of the instrument division. The as-found value of the instrument division trip setting shall be the trip setting value measured during the subsequent performance of the surveillance before making any adjustment to the instrument division that could change the trip setting value.
  2. The as-found value of the instrument division trip setting shall be compared with the previous as-left value or the specified NTSP. If the as-found value is compared with the specified NTSP to meet this requirement, the following conditions apply:
    - i. the setting tolerance band (the specified ALT) must be less than or equal to the square root of the sum of the squares of reference accuracy, measurement and test equipment, and readability uncertainties;
    - ii. the setting tolerance band (the specified ALT) must be included in the total loop uncertainty; and
    - iii. the pre-defined test acceptance criteria band (the specified PTAC) for the as-found value must include either the setting tolerance band (the specified ALT) or the uncertainties associated with the setting tolerance band (the square-root-sum-of-squares of

reference accuracy, measurement and test equipment, and readability uncertainties), but not both of these.

3. If the as-found value of the instrument division trip setting differs from the previous as-left value or the specified NTSP by more than the pre-defined test acceptance criteria band (the specified PTAC), when compared in accordance with paragraph c.2 above, then this condition shall be dispositioned by the plant's corrective action program, and the instrument division shall be evaluated to verify that it is functioning in accordance with its design basis before declaring the surveillance requirement met and returning the instrument division to service.
  4. If the as-found value of the instrument division trip setting is less conservative than the specified AV, then the surveillance requirement is not met and the instrument division shall be immediately declared inoperable.
  5. The instrument division trip setting shall be set to a value within the specified ALT around the specified NTSP (a trip setting as or more conservative than the specified LTSP) at the completion of the surveillance; otherwise, the surveillance requirement is not met and the instrument division shall be immediately declared inoperable.
- d. The difference between the instrument division trip setting as-found value and either the previous as-left value or the specified NTSP, for each required Technical Specification automatic protection instrumentation function shall be trended and evaluated to verify that the instrument division is functioning in accordance with its design basis.
  - e. The SCP shall establish a document containing the current value of the specified LTSP, NTSP, AV, PTAC, and ALT for each required Technical Specification automatic protection instrumentation function, a record of changes to those values, and references to the calculation documentation. Changes to this document shall be governed by the regulatory requirements of 10 CFR 50.59. In addition, changes to this document shall be governed by the approved setpoint methodology. This document, including any midcycle revisions or supplements, shall be provided to the NRC upon issuance for the initial cycle and each reload cycle.

**Justification:**

- a. A Setpoint Control Program is being incorporated into the plant-specific Technical Specifications. The Reviewer's Note is no longer necessary.
- b. In accordance with Interim Staff Guidance COL/DC-ISG-8, Necessary Content of Plant-Specific Technical Specifications, present and future COL applicants shall propose plant-specific Technical Specifications containing all site-specific information necessary to ensure plant operation within its design basis. A COL applicant may propose to resolve this requirement by establishing an administrative control program. The changes to TS 5.5, "Programs and Manuals," coupled with the addition of supporting changes to LCO 3.3.1, "Protection System (PS)," and Bases 3.3.1, "Protection System (PS)," will satisfy this requirement.

**15      TS 5.6.1      ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT****Generic Technical Specifications:**

TS 5.6.1, "Annual Radiological Environmental Operating Report," contains a Reviewer's Note to allow a single report submittal for all units at a multi-unit site.

**Plant Specific Technical Specifications:**

TS 5.6.1, "Annual Radiological Environmental Operating Report," is revised to remove the Reviewer's Note.

**Justification:**

The allowance for submittal of single reports for multiple units is not being pursued at this time.

**16      TS 5.6.2      RADIOACTIVE EFFLUENT RELEASE REPORT****Generic Technical Specifications:**

TS 5.6.2, "Radioactive Effluent Release Report" contains a Reviewer's Note to allow a single report submittal for all units at a multi-unit site.

**Plant Specific Technical Specifications:**

TS 5.6.2, "Radioactive Effluent Release Report" is revised to remove the Reviewer's Note.

**Justification:**

The allowance for submittal of single reports for multiple units is not being pursued at this time.

**17      BASES 3.3.1      PROTECTION SYSTEM (PS)****Generic Technical Specifications:**

- a. TS Bases 3.3.1, "Protection System (PS)" includes a Reviewer's Note at the beginning of the Background section that states: "The COL Applicant may revise the Background, Applicable Safety Analyses, LCO, and Applicability, Actions, and Surveillance Requirements sections to reflect the use of a Setpoint Control Program".
- b. TS Bases 3.3.1, "Protection System (PS)," includes a Reviewer's Note in the Background section that describes the term Limiting Trip Setpoint and plant specific requirements when LTSPs are not included in Table 3.3.1-2.
- c. TS Bases 3.3.1, "Protection System (PS)," includes a Reviewer's Note in the Surveillance Requirements section that states "In order for a plant to take credit for topical reports as the basis for justifying Frequencies, topical reports must be supported by an NRC staff SER that establishes the acceptability of each topical report for that unit."
- d. TS Bases 3.3.1, "Protection System (PS)," includes a Reviewer's Note in the Surveillance Requirements section that states "The Notes in Table 3.3.1-1 requiring reset of the division to a predefined as-left tolerance and the verification of the

as-found tolerance are only associated with SL-LSSS values. Therefore, the Notes are placed at the top of the LTSP column in the Table and applied to all Functions with LTSPs in the table. The Notes may be applied to specific SRs for the associated functions in the SR column only. This is followed by a second note that describes exclusions that would preclude the notes from being applicable. This third Reviewers Note concludes with the statement "Each licensee proposing to fully adopt this TSTF must review the potential SL-LSSS Functions to identify which of the identified functions are SL-LSSS according to the definition of SL-LSSS and their plant specific safety analysis. The two TSTF Notes are not required to be applied to any of the listed Functions which meet any of the exclusion criteria or are not SL-LSSS based on the plant specific design and analysis."

#### **Plant Specific Technical Specifications:**

- a. TS Bases 3.3.1, "Protection System (PS)" is revised to remove the Reviewer's Note from the Background section.
- b. TS Bases 3.3.1, "Protection System (PS)," in the Surveillance Requirements section, is revised to remove the Reviewer's Note regarding topical reports.
- c. TS Bases 3.3.1, "Protection System (PS)," in the Surveillance Requirements section, is revised to remove the two Reviewer's Note regarding Notes (b) and (c) in Table 3.3.1-2.
- d. Bases 3.3.1, Background, the paragraph that begins with "However, there is also some point beyond which" is revised to include the following sentence at the end of the paragraph:

"In accordance with Specification 5.5.18, the Setpoint Control Program shall establish a document that contains the current value of the specified LTSP, Nominal Trip Setpoint (NTSP), Allowable Value (AV), Performance Test Acceptance Criteria (PTAC), and As-Left Tolerance (ALT) for each Technical Specification required automatic protection instrumentation function."

- e. Bases 3.3.1, Applicable Safety Analyses, LCO and Applicability, Section B.9.c - Containment Isolation - Isolation (Stage 2) on High-High Containment Pressure, is revised to add the following at the end of the section:

"The setpoint for this function does not provide an automatic trip setpoint that protects against violating the Reactor Core Safety Limits or Reactor Coolant System Pressure Safety Limit during AOOs. This LSSS is not a SL-LSSS."

- f. Bases 3.3.1, Applicable Safety Analyses, LCO and Applicability, Section B.9.d - Containment Isolation - Isolation (Stage 1) on High Containment Radiation, is revised to add the following at the end of the section:

"The setpoint for this function does not provide an automatic trip setpoint that protects against violating the Reactor Core Safety Limits or Reactor Coolant System Pressure Safety Limit during AOOs. This LSSS is not a SL-LSSS."

- g. Bases 3.3.1, Applicable Safety Analyses, LCO and Applicability, Section B.10.a - Emergency Diesel Generator - Start on Degraded Grid Voltage, is revised to add the following at the end of the section:

“The setpoint for this function does not provide an automatic trip setpoint that protects against violating the Reactor Core Safety Limits or Reactor Coolant System Pressure Safety Limit during AOOs. This LSSS is not a SL-LSSS.”

- h. Bases 3.3.1, Applicable Safety Analyses, LCO and Applicability, Section B.10.b - Emergency Diesel Generator - Start on LOOP, is revised to add the following at the end of the section:

“The setpoint for this function does not provide an automatic trip setpoint that protects against violating the Reactor Core Safety Limits or Reactor Coolant System Pressure Safety Limit during AOOs. This LSSS is not a SL-LSSS.”

- i. Bases 3.3.1, Applicable Safety Analyses, LCO and Applicability, Section B.12.a and 12.b - PSRV Actuation - First and Second Valve, is revised to add the following at the end of the section:

“The setpoint for this function does not provide an automatic trip setpoint that protects against violating the Reactor Core Safety Limits or Reactor Coolant System Pressure Safety Limit during AOOs. This LSSS is not a SL-LSSS.”

- j. Bases 3.3.1, Applicable Safety Analyses, LCO and Applicability, Section B.13 – Control Room HVAC Reconfiguration to Recirculation Mode on High Intake Activity, is revised to add the following at the end of the section:

“The setpoint for this function does not provide an automatic trip setpoint that protects against violating the Reactor Core Safety Limits or Reactor Coolant System Pressure Safety Limit during AOOs. This LSSS is not a SL-LSSS.”

- k. Bases 3.3.1, Actions, the following sentence is added to the end of the first paragraph:

“The Setpoint Control Program ensures that divisions are performing as expected by confirming that the drift and other related errors are consistent with the supporting setpoint methodologies and calculations.”

- l. Bases 3.3.1, Surveillance Requirements, SR 3.3.1.4, will be revised to add the following paragraph at the end of the SR:

“In accordance with Specification 5.5.18, the Setpoint Control Program shall establish a document that containing the current value of the specified LTSP, NTSP, AV, PTAC, and ALT for each required Technical Specification automatic protection instrumentation function. The Setpoint Control Program also establishes requirements for the performance of CALIBRATION surveillances.”

- m. Bases 3.3.1, Surveillance Requirements, SR 3.3.1.6, will be revised to add the following paragraph at the end of the SR:

“In accordance with Specification 5.5.18, the Setpoint Control Program shall establish a document that containing the current value of the specified LTSP, NTSP, AV, PTAC, and ALT for each required Technical Specification automatic protection instrumentation function. The Setpoint Control Program also establishes requirements for the performance of CALIBRATION surveillances.”

**Justification:**

- a. A Setpoint Control Program is being incorporated into the plant-specific Technical Specifications. The Reviewer's Note is no longer necessary.
- b. The specified Frequencies in the plant specific TS 3.3.1 are based on the Frequencies specified in the generic TS 3.3.1. Topical reports are not credited as the basis for justifying Surveillance Frequencies.
- c. The application of the actions required by notes (b) and (c) are applied only to the required functions. The Reviewer's Note is no longer necessary.
- d.-n. In accordance with Interim Staff Guidance COL/DC-ISG-8, Necessary Content of Plant-Specific Technical Specifications, present and future COL applicants shall propose plant-specific Technical Specifications containing all site-specific information necessary to ensure plant operation within its design basis. A COL applicant may propose to resolve this requirement by establishing an administrative control program. The changes to Bases 3.3.1, coupled with the addition of a Setpoint Control Program to TS 5.5, "Programs and Manuals," and supporting changes to LCO 3.3.1, "Protection System (PS)," will satisfy this requirement.

**18 BASES 3.6.1 CONTAINMENT****Generic Technical Specifications:**

TS Bases 3.6.1, "Containment," contains a Reviewer's Note, in the Bases for SR 3.6.1.1 indicating that Regulatory Guide 1.163 and NEI 94-01 contain acceptance criteria for containment leakage which may be reflected in the Bases.

**Plant Specific Technical Specifications:**

TS Bases 3.6.1, "Containment," is revised to remove the Reviewer's Note.

**Justification:**

The Containment Leakage Rate Testing Program is conducted as required by TS 5.5.15, "Containment Leakage Rate Testing Program," and U.S. EPR FSAR Section 6.2.6, "Containment Leakage Testing." U.S. EPR FSAR Section 6.2.6 was developed to be consistent with Regulatory Guide 1.163 and NEI 94-01. Therefore, the information reflected in the Reviewer's Note does not need to be included in the Bases.

**19 BASES 3.7.10 CONTROL ROOM EMERGENCY FILTRATION (CREF)****Generic Technical Specifications:**

This section of the U. S. EPR General Technical Specifications is incorporated by reference with the following departures:

TS Bases 3.7.10, "Control Room Emergency Filtration (CREF)," contains design information regarding hazardous chemicals, toxic gas detectors, and Control Room isolation for toxic gas.

**Plant Specific Technical Specifications:**

The detection of toxic gases and subsequent automatic isolation of the Control Room Envelope (CRE) is not required and is not a part of the design basis. An evaluation of the site-specific toxic chemical hazards in BBNPP FSAR Section 2.2.3 did not identify any credible toxic chemical



accidents that exceeded the Main Control Room IDLH limits within two minutes of detection. In accordance with Regulatory Guide 1.78 (NRC, 2001), human exposures to toxic chemicals can be tolerated for up to two minutes at IDLH without incapacitation. Thus, a two minute exposure to IDLH limits provides an adequate margin of safety for control room operators. It is expected that a control room operator will take protective measures within two minutes (adequate time to don a respirator and protective clothing) after the detection and, therefore, will not be subjected to prolonged exposure at the IDLH concentration levels. The only chemical hazards that result in exceeding the IDLH after two minutes from detection threshold in the control room are natural gas/methane and ammonia and are identified in FSAR Table 2.2-10. No specific detection and automatic actuation features are necessary to protect the control room operators from an event involving release of a toxic gas. Therefore, detection of toxic gases and subsequent automatic isolation of the Control Room Envelope is not required and is not part of the BBNPP site-specific design basis. This represents a Departure from the U.S. EPR FSAR. As a result, toxic gas detectors and CRE isolation are not required. Therefore all the associated design information is deleted.

In addition, there are several statements within the bases that relate to the toxic gas and hazardous chemicals design information. These are described below:

The first sentence in the sixth paragraph of the Background:

Actuation of the CREF places the system in either of two separate states (emergency radiation state or toxic gas isolation state) of the emergency mode of operation, depending on the initiation signal.

is deleted. The last sentence in the seventh paragraph:

The actions taken in the toxic gas isolation state are the same, except that the signal switches the CREF to an isolation alignment to minimize any outside air from entering the CRE through the CRE boundary.

is deleted. The last sentence in the eighth paragraph:

The actions of the toxic gas isolation state are more restrictive, and will override the actions of the emergency radiation state.

is also deleted.

Within the Actions section of the Bases, the last (third) paragraph in the discussion of Actions D.1 and D.2:

Required Action D.1 is modified by a Note indicating to place the system in the toxic gas isolation state with outside air isolated.

is deleted.

**Justification:**

Toxic gas and hazardous chemical automatic protection for the Control Room System is not required based on the site-specific evaluation provided in Part 2 of this COL Application (FSAR Sections 2.2.3 and 6.4.4.).

**20 BASES 3.7.12 SAFEGUARD BUILDING CONTROLLED AREA VENTILATION SYSTEM (SBVS)****Generic Technical Specifications:**

TS Bases 3.7.12, "Safeguard Building Controlled Area Ventilation System (SBVS)," contains a Reviewer's Note in the Actions section for Required Action B.1, that indicates that the adoption of Condition B is dependent on a commitment from the licensee to have guidance available describing compensatory measures to be taken in the event of intentional or unintentional entry into Condition B. The discussion also includes design information regarding toxic gas and hazardous chemicals.

**Plant Specific Technical Specifications:**

This section of the U. S. EPR Generic Technical Specifications is incorporated by reference with the following departures:

TS Bases 3.7.12, "Safeguard Building Controlled Area Ventilation System (SBVS)," is revised to remove the Reviewer's Note and modify the discussion for Required Action B.1 to include the required commitment. The revision also deletes the design information regarding toxic gas and hazardous chemicals. The revised text is:

**B.1**

If the safeguard buildings or fuel building boundary is inoperable in MODE 1, 2, 3, or 4, the SBVS trains may not be able to perform their intended functions. Actions must be taken to restore an OPERABLE safeguard buildings and fuel building boundaries within 24 hours. During the period that the safeguard buildings or fuel building boundary is inoperable, appropriate compensatory measures consistent with the intent, as applicable, of GDC 19 and 10 CFR Part 100 shall be utilized to protect plant personnel from potential hazards such as radioactive contamination, smoke, temperature and relative humidity, and physical security. Preplanned measures shall be available and implemented upon entry into the condition to address these concerns regardless of whether the entry is intentional or unintentional entry. The 24 hour Completion Time is reasonable based on the low probability of a postulated accident occurring during this time period, and the use of compensatory measures. The 24 hour Completion Time is a typically reasonable time to diagnose, plan and possibly repair, and test most problems with the safeguard buildings or fuel building boundary.

**Justification:**

The site specific commitment provided is consistent with the requirements in the Reviewer's Note for adoption of the allowance provided in Condition B of TS 3.7.12, "Safeguard Building Controlled Area Ventilation System (SBVS)."

Toxic gas and hazardous chemical protection for the CREF is not required based on the site-specific evaluation provided in Part 2 of this COL application (FSAR Section 2.2.3 and 6.4.4).

**21 BASES 3.7.15 SPENT FUEL POOL BORON CONCENTRATION AND ENRICHMENT****Generic Technical Specifications:**

TS Bases 3.7.15, "Spent Fuel Pool Boron Concentration and Enrichment," contains a Reviewer's Note stating that the design of the spent fuel storage racks is to be provided by the COL applicant and that the required boron concentration will be provided as a part of the spent fuel

rack design. A second Reviewer's Note in the APPLICABLE SAFETY ANALYSES section states that "A COL applicant that references the U.S. EPR design certification will demonstrate that the design satisfies the criticality analysis requirements for the spent fuel storage racks." Boron concentrations are provided as bracketed text in the BACKGROUND and LCO sections.

**Plant Specific Technical Specifications:**

A plant specific LCO and Bases is not being developed at this time.

**Justification:**

As discussed in FSAR Section 9.1, the design and analysis for the new and spent fuel storage racks will be incorporated into a future revision, which will incorporate additional analyses to bound the site-specific conditions at BBNPP. Reviewer's Notes and bracketed information in the Generic Technical Specifications will be addressed in a subsequent revision to this COLA.

**22 BASES 3.7.16 SPENT FUEL STORAGE**

**Generic Technical Specifications:**

TS Bases 3.7.16, "Spent Fuel Storage," contains a Reviewer's Note stating that the design of the spent fuel storage racks is to be provided by the COL applicant and that the required spent fuel storage configuration will be provided as a part of the spent fuel rack design. The minimum storage capacity is provided as bracketed text in the BACKGROUND section. The LCO section includes an assumption of unborated water in bracketed text.

A second Reviewer's Note in the APPLICABLE SAFETY ANALYSES section states that "A COL applicant that references the U.S. EPR design certification will demonstrate that the design satisfies the criticality analysis requirements for the spent fuel storage racks."

**Plant Specific Technical Specifications:**

A plant specific LCO and Bases is not being developed at this time.

**Justification:**

As discussed in FSAR Section 9.1, the design and analysis for the new and spent fuel storage racks will be incorporated into a future revision, which will incorporate additional analyses to bound the site-specific conditions at BBNPP. Reviewer's Notes and bracketed information in the Generic Technical Specifications will be addressed in a subsequent revision to this COLA.

## SITE SPECIFIC CHANGES

{The following supplements are unique to Bell Bend Nuclear Power Plant.

### 1 LCO 3.7.19 ULTIMATE HEAT SINK (UHS)

#### Generic Technical Specifications:

TS 3.7.19, "Ultimate Heat Sink (UHS)," contains no LCOs or SRs or bracketed requirements for the Emergency Makeup Water source. However, the TS Bases 3.7.19, "Ultimate Heat Sink (UHS)," contains a bracketed requirement in the background section:

[The Seismic Category 1 makeup necessary to support 30 days of post accident mitigation is site specific and details are to be provided by the COL applicant]

And a related bracketed requirement in the LCO section:

[COL applicant to provide definition of OPERABLE makeup source.]

#### Plant Specific Technical Specifications:

Bell Bend Nuclear Power Plant has added a Required Action and two Surveillance Requirements for the ESW Emergency Makeup System (ESWEMS) Retention Pond.

The new Condition and Required Action is:

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. ESW Emergency Makeup System Retention Pond level or temperature not within limit.	C.1 Restore ESW Emergency Makeup System Retention Pond level or temperature, as applicable.	72 hours

The previous Condition C has been renumbered to Condition D. In addition two new Surveillance Requirements have been added:

SURVEILLANCE	FREQUENCY
SR 3.7.19.4 Verify average water temperature of the ESW Emergency Makeup System Retention Pond is $\leq 95^{\circ}\text{F}$ .	24 hours
SR 3.7.19.5 Verify water level of the ESW Emergency Makeup System Retention Pond is $\geq 664$ feet mean sea level (msl).	24 hours

#### Justification:

The additional Condition, Required Action, and Surveillance Requirements regarding the ESWEMS Retention Pond water level and average water temperature are necessary to ensure that the ESWEMS remains OPERABLE.

## 2 TS 4.1 SITE LOCATION

### Generic Technical Specifications:

TS 4.1, "Site Location," contains a bracketed requirement for the COL applicant to provide site specific information for Section 4.1, "Site Location."

### Plant Specific Technical Specifications:

The bracketed information is replaced with the following site specific information:

The BBNPP site is located within Salem Township, in the southwestern quadrant of Luzerne County, Pennsylvania. The BBNPP site is situated on the west bank of the North Branch of the Susquehanna River. The BBNPP site is found approximately 5 mi northeast of the Borough of Berwick, Pennsylvania and 1.5 mi to the north and west of the North Branch of the Susquehanna River. The Exclusion Area Boundary (EAB) for the BBNPP site is a circle with a radius of 2,272 ft or approximately 0.43 mi measured at the centerpoint of the Reactor Containment Building. The EAB establishes a radius of at least 0.393 mi from the potential release points. The Low Population Zone (LPZ) is a circle with a radius of 1.5 miles measured at the centerpoint of the Reactor Containment Building.

### Justification:

The site location information provided is consistent with the Bell Bend Nuclear Power Plant FSAR description of site location.

## 3 BASES 3.7.19 ULTIMATE HEAT SINK (UHS)

### Generic Technical Specifications:

TS-Bases 3.7.19, "Ultimate Heat Sink (UHS)," contains a bracketed requirement in the Background section:

[The Seismic Category 1 makeup necessary to support 30 days of post accident mitigation is site specific and details are to be provided by the COL applicant]

and a related bracketed requirement in the LCO section :

[COL applicant to provide definition of OPERABLE makeup source.]

### Plant Specific Technical Specifications:

TS-Bases 3.7.19, "Ultimate Heat Sink (UHS)," is revised, in the Background section, to remove the bracketed requirement and provide plant specific information. The following text is inserted:

The Seismic Category 1 emergency makeup water source to the ESW System (ESWS) cooling tower basins, necessary to support 30 days of post accident mitigation is provided by the safety-related Essential Service Water Emergency Makeup System (ESWEMS) that draws water from the ESWEMS Retention Pond. Water is drawn from the ESWEMS Retention Pond by four independent ESWEMS pumps, one for each ESW division. Each ESWEMS pump has its own suction supply from the ESWEMS Retention Pond; there is no shared suction line for any of the ESWEMS pumps. Each ESWEMS train has one pump, a discharge check valve, a strainer, a pump discharge manual isolation valve, all housed in the ESWEMS Pumphouse. In each ESW building, a motor operated valve is provided to allow makeup to the associated ESW cooling tower basin. Each ESWEMS pump is rated at 400 gpm.

Additional supporting information is added to the Applicable Safety Analysis section. Specifically the following sentences are added to the end of the third and fourth paragraphs (respectively) in this section.

The volume of water in the ESWEMS Pond is assumed to be at less than or equal to 95°F during normal plant operation to prevent exceeding the maximum ESW temperature during a LOCA.

and

This make-up is provided by the ESWEMS.

To address the bracketed text in the LCO section, the bracketed text and the end of the preceding sentence “. . .with capability from makeup from an Operable source.” is replaced with the following:

. . .with capability for makeup from an OPERABLE source. An OPERABLE emergency makeup water source consists of one OPERABLE train of the ESWEMS capable of providing makeup water to its associated ESW cooling tower basin. Each ESWEMS train includes a pump, valves, piping, instruments and controls to ensure the transfer of the required supply of water from the ESWEMS Retention Pond to its associated ESW cooling tower.

In order for the ESWEMS Retention Pond to be OPERABLE, the level must be greater than or equal to 664 feet mean sea level (msl) with an average water temperature less than or equal to 95°F.

As described previously, a new Condition and Required Action was created for LCO 3.7.9. A discussion of the Required Action is added to the Action section of the Bases:

#### C.1

If the ESWEMS Retention Pond level or average temperature is not within limits, action must be taken to restore the ESWEMS Retention Pond average temperature or level, as applicable, within limits within 72 hours. In this condition, there is either an insufficient pond volume to ensure a 27 day emergency makeup source to the ESW cooling tower basin(s) or the average emergency makeup water temperature is not bounded by initial conditions assumed in accident analysis for long term heat removal post-LOCA. The 72 hour Completion Time is based on the requirements to maintain a minimum of 3 days water inventory in each ESW cooling tower basin in order for the train to be considered OPERABLE, and the low probability of a postulated accident occurring during this time period.

and the title for the existing C.1 and C.2 is revised to D.1 and D.2.

A discussion of the two new surveillances is added at the end of the Surveillance Requirements section. New SR 3.7.19.4 and SR 3.7.19.5 are provided below:

#### SR 3.7.19.4

This SR verifies that the ESW System is available to cool the CCW System and EDG heat exchangers to at least its maximum design temperature with the maximum accident or normal design heat loads for 30 days following a postulated accident. With the average ESWEMS Retention Pond temperature less than or equal to 95°F, the design basis assumption associated with initial ESW temperature is bounded and long term cooling capability of the Emergency

Core Cooling System (ECCS) loads and EDGs is assured. The 24 hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES.

#### SR 3.7.19.5

This SR verifies that adequate long term ESW cooling tower basin makeup (i.e., 27 days) is available. The specified level also ensures that sufficient NPSH is available to operate the ESWEMS pumps during the 27 days post-LOCA. The 24 hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES. This SR verifies that the ESWEMS Retention Pond elevation is greater than or equal to 664 feet msl, which ensures the necessary pond volume is available to support 30 days of ESW system operation.

#### **Justification:**

The site specific information provided is consistent with the Bell Bend Nuclear Power Plant FSAR Section 9.2 description of Seismic Category 1 ESW System makeup source.}