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10 CFR 50.4  
10 CFR 52.79

August 14, 2009

UN#09-337

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

Subject: UniStar Nuclear Energy, NRC Docket No. 52-016  
Response to Request for Additional Information for the  
Calvert Cliffs Nuclear Power Plant, Unit 3,  
RAI No. 95, Technical Specifications

- References:
- 1) John Rycyna (NRC) to Robert Poche (UniStar Nuclear Energy), "RAI No 95 CTSB 2054.doc (PUBLIC)," email dated April 14, 2009
  - 2) UniStar Nuclear Energy Letter UN#09-133, from Greg Gibson to Document Control Desk, U.S. NRC, Submittal of Response to RAI No. 95, Technical Specifications, dated May 13, 2009

The purpose of this letter is to respond to the request for additional information (RAI) identified in the NRC e-mail correspondence to UniStar Nuclear Energy, dated April 14, 2009 (Reference 1). This RAI addresses Technical Specifications, as discussed in Part 2, Final Safety Analysis Report (FSAR), Chapter 16, and Part 4 of the Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 Combined License Application (COLA), Revision 5.

Reference 2 provided an expected response date for RAI No. 95, Questions 16-1 through 16-19 of August 15, 2009. The enclosure to this letter provides our responses to RAI No. 95, Questions 16-1 through 16-19, and includes revised COLA content.

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A Licensing Basis Document Change Request has been initiated to incorporate these changes into a future revision of the COLA.

Our responses to RAI No. 95, Questions 16-1 through 16-19 do not include any new regulatory commitments.

If there are any questions regarding this transmittal, please contact me at (410) 470-4205, or Mr. Michael J. Yox at (410) 495-2436.

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

Executed on August 14, 2009



Greg Gibson

Enclosure: Response to NRC Request for Additional Information, RAI No. 95, Questions 16-1 through 16-19, Technical Specifications, Calvert Cliffs Nuclear Power Plant, Unit 3

cc: John Rycyna, NRC Project Manager, U.S. EPR COL Application  
Laura Quinn, NRC Environmental Project Manager, U.S. EPR COL Application  
Getachew Tesfaye, NRC Project Manager, U.S. EPR DC Application (w/o enclosure)  
Loren Plisco, Deputy Regional Administrator, NRC Region II (w/o enclosure)  
Silas Kennedy, U.S. NRC Resident Inspector, CCNPP, Units 1 and 2  
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GTG/RDS/kat

UN#09-337

**Enclosure**

**Response to NRC Request for Additional Information,  
RAI No. 95, Questions 16-1 through 16-19, Technical Specifications,  
Calvert Cliffs Nuclear Power Plant, Unit 3**

**RAI No 95**

**Question 16-1**

**Section 5.5, Programs and Manuals**

Provide the additional information and make the necessary changes to the Setpoint Control Program Specification to ensure compliance with 10 CFR 50.36(c)(1)(ii)(A).

The CCNPP PTS, ADMINISTRATIVE CONTROLS, Setpoint Control Program Specification (5.5.18), does not provide sufficient detail to ensure regulatory compliance with the requirements of 10 CFR 50.36(c)(1)(ii)(A).

The staff is proposing that applicants provide their Setpoint Control Program Specification by adopting the model specification provided within. It is the staff's position that the model specification satisfies 10 CFR 50.36(c)(1)(ii)(A). Within this model, the approved setpoint methodology will control changes to the specified setpoint program document, instead of the 10 CFR 50.59 process. The model specification also includes a requirement to submit the setpoint program document to the NRC on the same schedule that is specified for submitting the Core Operating Limits Report (COLR). Note: Adoption of the model Setpoint Control Program Specification will make it necessary to revise portions of the Bases discussions pertaining to the SCP in the CCNPP Unit 3 Bases, Sections SR 3.3.1.4 and SR 3.3.1.6.

The SCP should explicitly include:

1. A statement that the Nominal Trip Setpoint (NTSP) corresponds to the Limiting Safety System Setting (LSSS). LSSS are settings for automatic protective devices related to those variables having significant safety functions. The setting is chosen to initiate automatic protective action prior to the associated process variable reaching either an Analytical (protects Safety Limit-LSSS) or Design (protects non Safety Limit-LSSS) Limit. The LSSS may be set to a value as or more conservative than the Limiting Trip Setpoint (LTSP). This value is known as the NTSP. The NTSP ensures that Safety Limits are not exceeded and that automatic protective devices will perform their specified safety function. As such, the NTSP meets the definition of a Limiting Safety System Setting.
2. A requirement to calculate Limiting Trip Setpoint (LTSP), Nominal Trip Setpoint (NTSP), Allowable Value (AV), As-Left Tolerance (ALT), and As-Found Tolerance (AFT) in conformance with the setpoint methodology previously reviewed and approved by NRC, and conditions in the associated NRC staff safety evaluation. (Note: The NRC staff will not approve the methodology unless the methodology allows little variation in the values calculated by different analysts using identical input values (such as uncertainties and calibration drift.)
3. The title and date of the approved setpoint methodology document and the title and date of the associated NRC safety evaluation are explicitly stated. (Note: This will ensure that changes to the methodology or deviations from the conditions in the safety evaluation will require a license amendment.)
4. A requirement for a document to contain the values of the current LTSP, NTSP, AV, ALT, and AFT for each technical specification required automatic protection

instrumentation function, and that the document is controlled by the approved setpoint methodology.

5. A requirement to declare the division inoperable if as-found setting determined during Calibration, Division Operational Test (DOT), or Sensor Operational Test (SOT) is non-conservative to AV. Note: The DOT is not specified in the SURVEILLANCE REQUIREMENTS of LCO 3.3.1 for either the CCNPP Unit 3 PTS or the U.S. EPR GTS. An RAI was submitted to AREVA under the U.S. EPR DCD regarding the absence of the DOT from the SURVEILLANCE REQUIREMENTS.
6. A requirement to evaluate the division functionality if as-found setting determined during Calibration, Division Operational Test, or Sensor Operational Test is non-conservative to AFT (with AFT determined as described in RIS 2006-17).
7. A requirement to set the channel within ALT around NTSP (the actual setting, equal to or conservative to the LTSP, which is the LSP defined in RIS 2006-17) at the completion of Calibration, Division Operational Test, or Sensor Operational Test.
8. A requirement to submit the setpoint program document to the NRC.

#### Example Setpoint Control Program Specification

##### 5.0 ADMINISTRATIVE CONTROLS

##### 5.5 Programs and Manuals

The following programs shall be established, implemented, and maintained.

##### 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. The Nominal Trip Setpoint (a trip setting as or more conservative than the specified Limiting Trip Setting), shall be designated as the LSSS.
- b. The Limiting Trip Setpoint (LTSP), Nominal Trip Setpoint (NTSP), Allowable Value (AV), As-Found Tolerance (AFT), and As-Left Tolerance (ALT) for each 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 January 31, 2008, (ML080590513), and the conditions stated in the associated NRC safety evaluation, Letter to AREVA NP from NRC, FINAL SAFETY EVALUATION REPORT FOR ANP-10275P, "U.S. EPR INSTRUMENT SETPOINT METHODOLOGY

TOPICAL REPORT" (TAC No. MD4976), dated December 20, 2007, (ML073450443).

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. Performance of CALIBRATION, DIVISION OPERATIONAL TEST (DOT), and SENSOR OPERATIONAL TEST (SOT) 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 AFT) 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 specified ALT), 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 AFT), 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 Technical Specification required 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, AFT, and ALT for each Technical Specification required 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 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.

## **Response**

U.S. EPR FSAR, Revision 1, Tier 2 Chapter 16 has been revised to include Reviewer's Notes that permit a COL applicant to utilize a Setpoint Control Program (SCP). Subsequent to the issuance of Revision 1 to the U.S. EPR FSAR, the U.S. EPR Protection System Technical Specifications (LCO 3.3.1) and Bases were revised and submitted in response to RAI Set 103 (ML091820006). As part of that submittal, changes were made to the Technical Specifications to facilitate adoption and NRC approval of a Setpoint Control Program. The Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 COLA will be updated to incorporate a SCP. The following provides a comparison between the NRC suggested SCP, the proposed SCP, and a justification for those differences. The justification is provided as "Discussion Items," which are identified at the end of each paragraph that contains a change. Deletions to the NRC suggested wording are shown with strikeout text and additions are underlined. The references to the Discussion Items are provided in italics and will not be part of the proposed SCP.

### **PROPOSED SETPOINT CONTROL PROGRAM**

#### **5.0 ADMINISTRATIVE CONTROLS**

#### **5.5 Programs and Manuals**

The following programs shall be established, implemented, and maintained.

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. ~~The Nominal Trip Setpoint (a trip setting as or more conservative than the specified Limiting Trip Setting), shall be designated as the LSSS. (See Discussion Item 1)~~
  
- b. The Limiting Trip Setpoint (LTSP), Nominal Trip Setpoint (NTSP), Allowable Value (AV), ~~As-Found Tolerance (AFT), 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: *(See Discussion Items 2 and 3)*
  1. ANP-10275P-A, "U.S EPR Instrument Setpoint Methodology Topical Report," Revision 0, dated ~~January 31, 2008, (ML080590513) February 26, 2008 (ML080590482)~~, and the conditions stated in the associated NRC safety evaluation, ~~Letter to AREVA NP from NRC, FINAL SAFETY EVALUATION REPORT FOR ANP-10275P, "U.S. EPR INSTRUMENT SETPOINT METHODOLOGY TOPICAL REPORT" (TAC No. MD4976), dated December 20, 2007, (ML073450443).~~ *(See Discussion Item 4)*
  
  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)]. *(See Discussion Item 4)*
  
- c. For each required Technical Specification automatic protection instrumentation function, performance ~~Performance of CALIBRATION, DIVISION OPERATIONAL TEST (DOT), and SENSOR OPERATIONAL TEST (SOT)~~ surveillances shall include the following: *(See Discussion Items 5 and 6)*
  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 AFT 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 specified ALT the square-root-sum-of-squares of reference accuracy, measurement and test equipment, and readability uncertainties), but not both of these. *(See Discussion Items 2 and 7)*
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 AFT 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 required automatic protection instrumentation function shall be trended and evaluated to verify that the instrument division is functioning in accordance with its design basis. *(See Discussion Item 8)*
  - e. The SCP shall establish a document containing the current value of the specified LTSP, NTSP, AV, AFT, PTAC, and ALT for each required Technical Specification required 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 ~~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. (See Discussion Items 2, 8, and 9)

#### DISCUSSION ITEM 1

The NRC suggested sentence: "The Nominal Trip Setpoint (a trip setting as or more conservative than the specified Limiting Trip Setting), shall be designated as the LSSS." was deleted. This sentence was deleted for the following reasons:

- This statement explicitly conflicts with the definition of the LSSS in NRC approved AREVA Topical Report ANP-10275P-A, "U.S EPR Instrument Setpoint Methodology Topical Report." Specifically, on Page 1-2 of the Topical Report, it states: "The limiting trip setpoint (LTSP) is the limiting safety system setting (LSSS) since all known errors are appropriately combined in the total loop uncertainty calculation (TSTF-493)." Conflicts between the description of the Setpoint Control Program in the Technical Specifications and the Topical Reports referenced in the program description would result in compliance issues.
- Selection of the LTSP as the LSSS is permitted by current regulatory guidance. RIS 2006-017 states:

Section 50.36(c)(1)(ii)(A) states: "Limiting safety system settings for nuclear reactors are settings for automatic protective devices related to those variables having significant safety functions. Where a limiting safety system setting is specified for a variable on which a safety limit has been placed, the setting must be so chosen that automatic protective action will correct the abnormal situation before a safety limit is exceeded. If, during operation, it is determined that the automatic safety system does not function as required, the licensee shall take appropriate action, which may include shutting down the reactor.

10 CFR 50.36(c)(1)(ii)(A) requires that the Technical Specifications (TS) include limiting safety system settings (LSSS) for variables that have significant safety functions. For variables on which a safety limit (SL) has been placed, the LSSS must be chosen to initiate automatic protective action to correct abnormal situations before the SL is exceeded. Many licensees have TS that specify an allowable value (AV) as the LSSS. During periodic surveillances, no actions are required by TS (e.g., resetting) as long as the results indicate that the as-found channel trip setpoint (TSP) is conservative with respect to the AV. Many licensees rely on administrative controls to reset the instrument TSP to the limiting trip setpoint (LTSP) or to a value more conservative than LTSP at the conclusion of periodic testing, but these controls are given in documents other than the TS. However, if the instrument TSP is not left at a value that is conservative with respect to the LTSP, then there may not be assurance that the SL will be protected until the next periodic surveillance because instrument drift and other changes in setpoint can occur. These uncertainties are accounted for in the calculation of the LTSP. It is the NRC staff's position that the LTSP protects the SL. (Definition of acronyms added.)

- Selection of the LTSP as the LSSS is also permitted by current industry guidance. TSTF 493, Revision 3, Section 3.0 "Background," (at the top of Page 5) states:

The "[Limiting Trip Setpoint (LTSP)]" is the limiting setting for the channel trip setpoint (TSP) considering all credible instrument errors associated with the instrument channel. The [LTSP] is the least conservative value (with an as-left tolerance) to which the channel must be reset at the conclusion of periodic testing to ensure that the Analytical Limit (AL) will not be exceeded during an AOO before the next periodic surveillance or calibration.

The "Nominal Trip Setpoint (NTSP)" is the Limiting Trip Setpoint with margin added. The [NTSP] is always equal to or more conservative than the [LTSP].

In addition, in Section 4.0 "Technical Analysis," (last full paragraph on Page 9) states:

10 CFR 50.36(c)(1)(ii)(A) requires that the LSSS be included in Technical Specifications. The [LTSP] is the LSSS required by 10 CFR 50.36(c)(1)(ii)(A).

- In Reference 11, the NRC staff requested GE Hitachi to revise their proposed Setpoint Control Program specification by adopting the model specification and reviewer's note provided in Enclosure 2 of that letter. The model Setpoint Control Program proposed by the NRC Staff to GE Hitachi did not contain this sentence. Therefore, its deletion will improve standardization.

## DISCUSSION ITEM 2

The use of the term "As-Found Tolerance (AFT)" was replaced with the term "Performance Testing Acceptance Criteria (PTAC)." The change in terminology is required to ensure consistency with NRC approved AREVA Topical Report ANP-10275P-A, which reflects the terminology used by the supporting industry standard.

As stated in U.S. EPR FSAR Tier 2 Section 7.1.2.4.7, the setpoint methodology described in ANP-10275P implements the guidance of Setpoints for Nuclear Safety Related Instrumentation (ANSI/ISA-67.04.01-2006). Section 4.6 of ANSI/ISA-67.04.01-2006 and ANP-10275P-A utilize the term PTAC instead of AFT. Section 4.6 states that the PTAC may also be know as the as-found limits (or band) for the test being performed.

## DISCUSSION ITEM 3

The term "applicable" was added to the wording in the sentence that requires the LTSP, NTSP, AV, PTAC, and ALT be calculated for each Technical Specification required automatic protection instrumentation function.

Not all functions listed in Table 3.3.1-2 of the Protection System Technical Specifications have associated LTSP, NTSP, AV, PTAC, and ALT values. For example, the Main Feedwater Full Load Closure on Reactor Trip (All SGs) function does not have an associated setpoint. Therefore, the associated controls regarding LSSS settings during periodic testing and calibration of instrument channels are not applicable.

#### DISCUSSION ITEM 4

The reference to the document date and accession number were revised to reflect the publication of ANP-10275P-A, "U.S. EPR Instrument Setpoint Methodology Topical Report." The subsequent citation to the NRC SER was deleted since the SER is included as part of the published version of the approved Topical Report. ANP-10287P, "Incore Trip Setpoint and Transient Setpoint Methodology For U.S. EPR," has been submitted for NRC review. The reference to NRC approval will be updated in a future revision to the COLA once NRC approval has been received.

#### DISCUSSION ITEM 5

The phrase: "For each required Technical Specification automatic protection instrumentation function," was added to establish the applicable scope for the requirement.

#### DISCUSSION ITEM 6

References to DIVISION OPERATIONAL TEST (DOT), and SENSOR OPERATIONAL TEST (SOT) were deleted from the paragraph that specifies requirements for surveillance testing. The term "DIVISION OPERATIONAL TEST" was not referenced in any U.S. EPR Technical Specification Surveillance Requirement. Therefore, it was deleted from the Definitions Section in Revision 1 of the U.S. EPR FSAR. The SENSOR OPERATIONAL TEST does not result in the adjustment of setpoints. Setpoints are software-specified values in the digitally based U.S. EPR Protection System. Actions necessary to provide assurance of the accuracy of the sensor input are performed as part of the CALIBRATION in the U.S. EPR Technical Specifications.

#### DISCUSSION ITEM 7

The phrase "the specified ALT" is used in parentheses twice in this paragraph. The second use was intended to clarify the uncertainties associated with the setting tolerance band. In Section 2.1.2 of ANP-10275P, it states that the U.S. EPR methodology adopts the use of an NTSP-based assessment of As-found (AF) values based on the specific conditions stated in RIS 2006-17. Those conditions are:

- The setting tolerance band is less than or equal to the SRSS of reference accuracy, measurement and test equipment (M&TE), and readability uncertainties.

In order to avoid confusion and to more accurately reflect both the AREVA Topical Report and regulatory guidance, the parenthetical term associated with the setting tolerance band was revised to read "the square-root-sum-of-squares of reference accuracy, measurement and test equipment, and readability uncertainties."

#### DISCUSSION ITEM 8

The phrase "for each Technical Specification required automatic protection instrumentation function" was changed to "for each required Technical Specification automatic protection instrumentation function." The change in the placement of the term "required" was necessary to reflect the scope of the functions that require trending and evaluation and the scope of the setpoints specified in the document established by the Setpoint Control Program. Not all

Engineered Safety Features functions have LTSPs, NTSP, AVs, as-found or as-left values [e.g., Partial Cooldown Actuation on Safety Injection Signal Actuation or Containment Isolation (Stage 1) on SIS Actuation]. In addition, not all functions provide an automatic trip setpoint that protects against violating the Reactor Core Safety Limits or Reactor Coolant System Pressure Safety Limit during AOOs (e.g., Control Room HVAC Reconfiguration to Recirculation Mode on High Intake Activity). The required Technical Specification automatic protection instrumentation functions are identified by the use of Footnotes (b) and (c) in the Limiting Trip Setpoint / Design Limit column in Table 3.3.1-2 of the U.S. EPR Technical Specifications.

## DISCUSSION ITEM 9

A requirement was added such that changes to instrumentation settings will be governed by 10 CFR 50.59. In Reference 11, the NRC staff requested GE Hitachi to revise their proposed Setpoint Control Program specification by adopting the model specification and reviewer's note provided in Enclosure 2 of that letter. The model Setpoint Control Program proposed by the NRC Staff to GE Hitachi contained this change. Therefore, its incorporation will improve standardization.

### COLA Impact

Note: The proposed changes take into account the proposed changes to U.S. EPR FSAR Tier 2 transmitted by AREVA to the NRC in its response to RAI 103<sup>1</sup>.

FSAR Section 1.8.2 will be updated as follows in a future COLA revision:

### 1.8.2 DEPARTURES

The U.S. EPR FSAR includes the following COL Item in Section 1.8.2:

A COL applicant that references the U.S. EPR design certification will provide a list of any departures from the FSAR in the COL FSAR.

This COL Item is addressed as follows:

{The list of departures from the U.S. EPR FSAR is as follows:

Maximum Differential Settlement	FSAR 2.5.4 and 3.8.5
Maximum Annual Average Atmospheric Dispersion Factor	FSAR 2.3.5
Accident Atmospheric Dispersion Factor from 0 - 2 Hours for the Low Population Zone	FSAR 2.3.4 and 15.0.3
Maximum Ground Water Elevation	FSAR 2.4.12, 3.4.2, and 3.8.5
Toxic Gas Detection and Isolation	FSAR 6.4 and 9.4.1
Technical Specifications Setpoint Control Program	FSAR 16.3.3, 16.5.5, and Bases 16.3.3

<sup>1</sup> R. Wells (AREVA) to G. Tesfaye (NRC), "Response to U.S. EPR Design Certification Application RAI No. 103, FSAR Ch.16, Supplement 2," email dated June 30, 2009.

FSAR Chapter 16 will be updated as follows in a future COLA revision:

## 16.0 TECHNICAL SPECIFICATIONS

The differences from Revision 1 0 ~~(including supplement 1 and 2)~~ of the U.S. EPR Design Certification, either due to Reviewer's Notes 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 Part 4 of this COLA.

Part 4 will be updated as follows in a future COLA revision:

## PART 4 TECHNICAL SPECIFICATIONS AND BASES

### Introduction

The differences from Revision 1 0 ~~(including supplement 1 and 2)~~ of the U.S. EPR Design Certification, either due to Reviewer's Notes 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

### 1 LCO 3.3.1 PROTECTION SYSTEM (PS)

#### Generic Technical Specifications:

~~Table 3.3.1-2 includes a bracketed Reviewer's Note that states "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 of the Limiting Trip Setpoint will then be replaced after the completion of the study."~~

~~Note (c) of Table 3.3.1.2 contains the sentence "The methodologies used to determine the as-found and the as-left tolerances are specified in a document controlled under 10 CFR 50.59."~~

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:**

~~Table 3.3.1-2 is revised to remove the Reviewer's Note.~~

~~The last sentence is removed from note (c)~~

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 plant specific setpoint study cannot be completed until after selection of instrumentation, which may not occur until after approval of the COL application is granted. The values in the Limiting Trip Setpoint column represent the best information currently available. A plant specific setpoint study will be performed prior to fuel load to confirm acceptability of the Limiting Trip Setpoints. If that plant specific study identifies any necessary alterations to the table, they will be made at that time.~~

~~A license condition is provided in Part 10 Inspection, Test, and Analysis Acceptance Criteria (ITAAC) of this application to require an amendment to be submitted once the setpoint study is completed. The amendment will provide any revised plant specific values, and update Table 3.3.1-2.~~

~~Changes to plant documents must be controlled under 10 CFR 50.59. Therefore the statement in the note is unnecessary.~~

- 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.

**15 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.

**4516 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".

Note: The existing entries (a, b, and c) will be re-numbered (b, c, and d).

**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.

Note: The existing entries (a, b, and c) will be re-numbered (b, c, and d).

- e. TS 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."

- f. TS 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."

- g. TS 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."

- h. TS 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."

- i. TS 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."

- j. TS 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."

- k. TS 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."

- l. TS 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."

- m. TS 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."

- n. TS 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.

Note: The existing entries (a, b, and c) will be re-numbered (b, c, and d).

- ~~ab~~ ~~As discussed for LCO 3.3.1, a plant specific setpoint study cannot be completed until after selection of instrumentation, which may not occur until after approval of the COL application is granted. That justification includes a license condition to amend the Technical Specifications once the setpoint study is completed. The~~

Bases will be updated to support any changes to the LCO or to Table 3.3.1-2. A Setpoint Control Program is being incorporated into the plant-specific Technical Specifications. The Reviewer's Note is no longer necessary.

ed The application of the actions required by notes (b) and (c) to all the Limiting Trip Setpoints identified in Table 3.3.1-1 is acceptable until a plant specific setpoint study is completed. If that plant specific study identifies any necessary alterations to the table, they will be made at that time. 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.

e.-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.

Generic changes 16 through 20 will be renumbered as 17 through 21.

Part 7 will be updated as follows in a future COLA revision:

## **1.1 DEPARTURES**

### **1.1.6 GENERIC TECHNICAL SPECIFICATIONS AND BASES - SETPOINT CONTROL PROGRAM**

Affected U.S. EPR FSAR Sections: Tier 2, Section 16 - Technical Specifications (TS) 3.3.1 and 5.5, and Bases 3.3.1

#### **Summary of Departure:**

A Setpoint Control Program (SCP) is adopted in the CCNPP Unit 3 Technical Specifications (TS). TS 3.3.1 is revised to delete the associated Reviewer's Notes and bracketed information. Applicable Surveillance Requirements and footnotes are revised to reference the SCP. Numerical setpoints are removed and replaced with a reference to the SCP. TS 5.5 is revised to delete the associated Reviewer's Note. Also, a SCP description will be added to the Administrative Controls - Programs and Manuals section (5.5). The SCP description references the NRC approved setpoint methodology documents that shall be used for the development of required numerical setpoints. The TS Bases 3.3.1 are revised to delete the associated Reviewer's Note, incorporate additional background information, and clarify the applicability of the program to certain specific functions.

#### **Scope/Extent of Departure:**

This Departure is identified in Section A of Part 4 of the CCNPP Unit 3 COL Application, Generic Change Items 1, 15 and 16.

**Departure Justification:**

Certain plant specific setpoints cannot be determined until after the selection of instrumentation and require as-built system design information, which may not occur until after the approval of the COL application is granted. SECY-08-0142, Change in Staff Position Concerning Information in Plant-Specific Technical Specifications that Combined License Applicants Must Provide to Support Issuance of Combined Licenses," states that "the plant-specific Technical Specifications issued with a combined license must be complete, implementable, and provide a basis for the Commission to conclude that the plant will operate in accordance with the relevant requirements." An option to satisfy this requirement is to relocate numerical values out of the TS and replace them with an administrative program that references NRC approved methodologies for determining these values. Writer Notes in the Generic Technical Specifications permit the COL applicant to relocate these numeric values through the use of a SCP. The methodologies to be cited in the SCP for determining these numerical values have been submitted to NRC. Referencing these NRC approved methodologies in the TS provide reasonable assurance that the facility will be operated in conformity with the license, the provisions of the Act, and the Commission's rules and regulations.

**Departure Evaluation:**

This Departure, the inclusion of a Setpoint Control Program and the associated changes in the TS and Bases, provides adequate assurance the required Limiting Trip Setpoints and Nominal Trip Setpoints are developed and maintained such that safety functions will actuate at the point assumed in the applicable safety analysis. Accordingly, the Departure does not:

1. Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific FSAR;
2. Result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety and previously evaluated in the plant-specific FSAR;
3. Result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific FSAR;
4. Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the plant-specific FSAR;
5. Create a possibility for an accident of a different type than any evaluated previously in the plant-specific FSAR;
6. Create a possibility for a malfunction of an SSC important to safety with a different result than any evaluated previously in the plant-specific FSAR;
7. Result in a design basis limit for a fission product barrier as described in the plant specific FSAR being exceeded or altered; or
8. Result in a departure from a method of evaluation described in the plant-specific FSAR used in establishing the design bases or in the safety analyses.

This Departure does not affect resolution of a severe accident issue identified in the plant specific FSAR.

Therefore, this Departure has no safety significance.

## 1.2 EXEMPTION REQUESTS

~~5. For these reasons, Unistar Nuclear requests approval of the requested exemption from the U.S. EPR FSAR Tier 2 requirements to correct errors in the Limiting Trip Setpoints in Table 3.3.1-2 of generic U.S. EPR Technical Specification 3.3.1.,~~

Exemptions 6, 7, and 8 will be renumbered as 5, 6, and 7.

Part 10 will be updated as follows in a future COLA revision:

## **Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) and ITAAC Closure**

### **Appendix A- Proposed Combined License Conditions**

#### ~~10. PLANT SPECIFIC TECHNICAL SPECIFICATIONS~~

~~The Generic Technical Specifications provide Limiting Trip Setpoints that cannot be determined until after the COL is issued.~~

#### ~~PROPOSED LICENSE CONDITION:~~

~~TS 3.3.1 (Calvert Cliffs Unit 3 Nuclear Power Plant) shall submit a license amendment following completion of a plant-specific setpoint study following selection of the plant-specific instrumentation. This amendment shall update Table 3.3.1-2 and the associated Bases to provide plant-specific setpoint information.~~

Note: The subsequent sections will be renumbered.

## Question 16-2

### LCO 3.3.1, Protection System

Provide the additional information and make the necessary changes regarding the reference to the Limiting Trip Setpoint (LTSP) as the Limiting Safety System Setting (LSSS) in the CCNPP Unit 3 Bases.

The CCNPP Unit 3 PTS, Bases, BACKGROUND, page B 3.3.1-3 (first paragraph), makes a direct correlation between the Limiting Trip Setpoint (LTSP) and the Limiting Safety System Setting (LSSS). LSSS are settings for automatic protective devices related to those variables having significant safety functions. The setting is chosen to initiate automatic protective action prior to the associated process variable reaching either an Analytical Limit (protects Safety Limit-LSSS) or Design Limit (protects non Safety Limit-LSSS). The LTSP is defined in RIS 2006-17, as the "limiting setting for the channel trip setpoint (TSP) considering all credible instrument errors associated with the instrument channel." In addition, the LTSP is described in the U.S. EPR Instrument Setpoint Methodology Topical Report (ANP-10275P-A) as "the limiting value for the nominal trip setpoint so that the trip or actuation will occur before the AL is reached ..."

The LSSS may be set to a value as or more conservative than the Limiting Trip Setpoint (LTSP). This value is known as the Nominal Trip Setpoint (NTSP) and is the "TSP value selected by the licensee for plant operations" as defined in RIS 2006-17. The NTSP ensures that Safety Limits are not exceeded and that automatic protective devices will perform their specified safety function. As such, the NTSP meets the definition of a Limiting Safety System Setting and is the actual setting value programmed for LSSS protective trip functions.

Revise the Bases to ensure that all references to the LTSP pertaining to its designation as the LSSS value are replaced by references to the NTSP.

The additional information is needed to ensure the accuracy and completeness of the CCNPP Unit 3 Bases.

## Response

As discussed in the response to RAI 95, Question 16-1, the Limiting Trip Setpoint (LTSP) is the Limiting Safety System Setting (LSSS) in the U.S. EPR Design Certification. NRC approved AREVA Topical Report ANP-10275P-A, "U.S EPR Instrument Setpoint Methodology Topical Report," Page 1-2 states: "The limiting trip setpoint (LTSP) is the limiting safety system setting (LSSS) since all known errors are appropriately combined in the total loop uncertainty calculation (TSTF-493)."

This position complies with current regulatory and industry guidance:

- As stated on TSTF-493, Rev. 3, Page 1: "In all cases, the term Limiting Trip Setpoint" may be replaced in the Technical Specifications and in the Bases by a term (e.g. NTSP) consistent with the plant-specific setpoint methodology."
- RIS 2006-017 states that "It is the NRC staff's position that the LSP protects the SL."

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Conflicts between the description of the Setpoint Control Program in the Technical Specifications and the Topical Reports referenced in the program description would result in compliance issues.

**COLA Impact**

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

### Question 16-3

#### LCO 3.3.1, Protection System

Provide the additional information and any changes necessary to explain and correct potential discrepancies regarding the omission of U.S. EPR Bases information from the "BACKGROUND," "APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY," and "ACTIONS" Sections of the CCNPP Unit 3 Bases.

The CCNPP Unit 3 PTS, Bases, BACKGROUND, page B 3.3.1-2 (second paragraph), omits the last sentence of the corresponding paragraph in the U.S. EPR Bases, BACKGROUND, which states that "[t]he subset of LSSS that directly protect against violating the reactor core and RCS pressure boundary safety limits during AOOs are referred to as Safety Limit LSSS (SL-LSSS)."

The CCNPP Unit 3 PTS, Bases, BACKGROUND, page B 3.3.1-3 (first paragraph), omits the last sentence of the corresponding paragraph in the U.S. EPR Bases, BACKGROUND, which states that "[a]s such, the LTSP meets the definition of a SL-LSSS." Note: Replacing "LTSP" with "NTSP" in the referenced statement is being evaluated under a separate RAI on the basis that the NTSP meets the definition of a Limiting Safety System Setting and is the actual setting value programmed for LSSS protective trip functions.

The CCNPP Unit 3 PTS, Bases, BACKGROUND, page B 3.3.1-4 (fifth paragraph), omits the last sentence of the corresponding paragraph in the U.S. EPR Bases, BACKGROUND, which states that "[h]owever, these values and their associated LTSPs are not considered to be LSSS as defined in 10 CFR 50.36." Note: Replacing "LTSP" with "NTSP" in the referenced statement is being evaluated under a separate RAI on the basis that the NTSP meets the definition of a Limiting Safety System Setting and is the actual setting value programmed for LSSS protective trip functions.

The CCNPP Unit 3, Bases, BACKGROUND, Sensors, page B 3.3.1-6, omits the last paragraph associated with permissives and interlocks in the corresponding section of the U.S. EPR Bases (page B 3.3.1-6, fourth full paragraph). Although an RAI was submitted to AREVA under the U.S. EPR FSAR regarding the perspective that permissive setpoints are generally considered as nominal values without regard to measurement accuracy, it is unclear why the paragraph was omitted.

In the CCNPP Unit 3 Bases, APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY, page B 3.3.1-12 (second paragraph), the information associated with permissives and interlocks are missing from the comparable paragraph on page B 3.3.1-12 (second paragraph) of the U.S. EPR Bases. Although an RAI was submitted to AREVA under the U.S. EPR FSAR regarding the perspective that permissive setpoints are generally considered as nominal values without regard to measurement accuracy, it is unclear why the information was omitted.

The CCNPP Unit 3 Bases, ACTIONS, page B 3.3.1-65 (top of page), omits the entire first paragraph from page B 3.3.1-65 of the corresponding section in the U.S. EPR Bases regarding the Operability of functions within a specific division.

It appears that the omitted U.S. EPR Bases information may be relevant. Determine whether or not the omissions are warranted and make any necessary corrections to the CCNPP Unit 3

Bases. Include any discussions necessary to ensure a clear understanding of these departures from the U.S. EPR Bases.

The additional information is needed to ensure the accuracy and completeness of the CCNPP Unit 3 Bases.

**Response**

The departures from the U.S. EPR Technical Specifications were removed as part of CCNPP Unit 3 COLA, Revision 4. COLA, Part 4, does not revise the Technical Specification Bases text cited in RAI 95, Question 16-3. Therefore, the NRC cited differences between the U.S. EPR Technical Specifications and the COLA Technical Specifications no longer exist.

**COLA Impact**

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

#### **Question 16-4**

##### LCO 3.3.1, Protection System

Provide the additional information and any changes necessary to explain and correct a potential discrepancy regarding the surveillances specified in the BACKGROUND Section of the CCNPP Unit 3 Bases.

The CCNPP Unit 3 Bases, BACKGROUND, page B 3.3.1-4 (first paragraph), states that "this value is specified in the SCP, as required by Specification 5.5.18, in order to define OPERABILITY of the devices and is designated as the Allowable Value, which is the least conservative value of the as-found setpoint that a division can have during a periodic CALIBRATION or SENSOR OPERATIONAL TEST." The surveillances specified do not include the DIVISION OPERATIONAL TEST (DOT) surveillance. The DOT is defined in USE AND APPLICATION Section 1.1, Definitions, as "the injection of a simulated or actual signal into the division as close to the sensor as practicable to verify OPERABILITY of all devices in the division required for OPERABILITY. The DOT shall include adjustments, as necessary, of the required alarm, interlock, and trip setpoints required for division OPERABILITY such that the setpoints are within the necessary range and accuracy. The DOT may be performed by means of any series of sequential, overlapping, or total steps."

On the basis of the definition, the DIVISION OPERATIONAL TEST appears to qualify as a periodic surveillance during which the as-found setpoint value of a Limiting Safety System Setting (LSSS) can be determined. Note: The DOT is not specified in the SURVEILLANCE REQUIREMENTS of LCO 3.3.1 for either the CCNPP Unit 3 PTS or the U.S. EPR GTS. An RAI was submitted to AREVA under the U.S. EPR FSAR regarding the absence of the DOT from the SURVEILLANCE REQUIREMENTS.

Determine if the DIVISION OPERATIONAL TEST should be included amongst the surveillances specified and make any necessary changes to the Bases. The additional information is needed to ensure the accuracy and completeness of the CCNPP Unit 3 Bases.

#### **Response**

As discussed in the response to RAI 95, Question 16-1, the term "DIVISION OPERATIONAL TEST" was not referenced in any U.S. EPR Technical Specification Surveillance Requirement. Therefore, it was deleted from the Definitions Section in Revision 1 of the U.S. EPR FSAR.

The departures from the U.S. EPR Technical Specifications were removed as part of CCNPP Unit 3 COLA, Revision 4. COLA, Part 4, does not revise the Technical Specification Bases to include a discussion of a DIVISION OPERATIONAL TEST.

Therefore, there are no references to a DIVISION OPERATIONAL TEST in either the U.S. EPR Technical Specifications or the COLA.

#### **COLA Impact**

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

### **Question 16-5**

#### **LCO 3.3.1, Protection System**

Provide the additional information and any changes necessary to explain and correct a potential discrepancy regarding the one second time delay for ESFAS Function B.1, "Turbine Trip on Reactor Trip."

The CCNPP Unit 3 Bases, APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY, page B 3.3.1-29, adds the following statement to the end of the first paragraph: "the one second time delay is an Analytical Limit." The one second time delay for the "Turbine Trip on Reactor Trip Function" (B.1), is specified as a Limiting Trip Setpoint (LTSP) in the U.S. EPR GTS, Table 3.3.1-2 (page 3 of 6), and as a Setting Basis/Analytical Limit in the CCNPP Unit 3 PTS, Table 3.3.1-2 (page 3 of 6). The LTSP is the "limiting" predetermined setting for a protective device chosen to ensure automatic actuation prior to the process variable reaching the Analytical Limit, thus ensuring that a Safety Limit (SL) would not be exceeded. The LTSP and the Setting Basis/Analytical Limit cannot be the same number. Validate the Bases statement. Explain how the one second time delay can be specified as both a LTSP (U.S. EPR GTS) and Setting Basis/Analytical Limit, (CCNPP Unit 3 RCOLA). Make any necessary corrections to the CCNPP Unit 3 PTS and Bases.

The additional information is needed to ensure the accuracy and completeness of the CCNPP Unit 3 PTS and Bases.

### **Response**

The departures from the U.S. EPR Technical Specifications were removed as part of CCNPP Unit 3 COLA, Revision 4. Currently, the contents of the Limiting Trip Setpoint / Design Limit column in COLA Part 4 Table 3.3.1-2 are being replaced as discussed in the response to RAI 95, Question 16-1. Therefore, the NRC cited differences between the U.S. EPR Technical Specifications and the COLA Technical Specifications no longer exist.

With regard to the function discussed in the RAI 95, Question 16-5, the one second delay is a function calculated by the Protection System Actuation and Processing Unit (APU) computer. For purely digital components, such as the APUs, there is no expected change in results between surveillance performances and any test result other than the identified Technical Specification surveillance acceptance criteria would be considered inoperable. Therefore, the Notes used to identify potential Safety Limit Limiting Safety System Settings (SL-LSSS) do not apply.

### **COLA Impact**

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

### Question 16-6

#### LCO 3.3.1, Protection System

Provide the additional information and any changes necessary to explain, clarify, and correct potential discrepancies associated with the Setting Basis values specified in the CCNPP Unit 3 PTS.

The CCNPP Unit 3 PTS, Table 3.3.1-2, specifies "Setting Basis" values instead of the Limiting Trip Setpoint (LTSP) values specified in the U.S. EPR GTS, Table 3.3.1-2. The CCNPP Unit 3 Bases, BACKGROUND, page B 3.3.1-2 (third paragraph), states that the Analytical Limits and Design Limits "constitute the Setting Basis specified in Table 3.3.1-2." Validate the Setting Basis values and make any necessary corrections. Specify which Reactor Trip/ESFAS Instrumentation Functions have Analytical Limits and which ones have Design Limits. Ensure that this information is clearly stated in the Bases. Include any discussions necessary to ensure a clear understanding of the criteria used to determine the type of Limit specified (Analytical or Design) for each of the functions listed in Table 3.3.1-2.

The CCNPP Unit 3 PTS, Table 3.3.1-2, specifies inequality signs for the Setting Basis values. Inequality signs are typically only specified for Allowable Values, not Analytical/Design Limits. The Allowable Value (AV) is defined in RIS 2006-17 as "a limiting value of an instrument's as-found trip setting used during surveillances." The CCNPP Bases, BACKGROUND, page B 3.3.1-4 (first paragraph), states that the AVs are specified in the Setpoint Control Program (SCP) "to define OPERABILITY of the devices." Inequality signs associated with Analytical/Design Limits may introduce potential ambiguities regarding the OPERABILITY of devices whose as-found setpoints are conservative with respect to the Setting Basis, but non-conservative relative to the AV. Justify the use of inequality signs with Setting Basis values and make any necessary corrections. Note: It appears that revisions associated with the inequality signs specified for the following functions in Table 3.3.1-2 may be incorrect. If the use of an inequality is warranted, the inequality sign information must be validated for these functions.

- A.3, High Neutron Flux Rate of Change (Power Range)
- A.14, Steam Generator (SG) Pressure Drop
- B.2.c, Startup and Shutdown Feedwater Isolation on SG Pressure Drop (All SGs)
- B.8.a, Main Steam Isolation Valve (MSIV) Closure on SG Pressure Drop (All SGs)

The additional information is needed to ensure the accuracy, completeness, and consistency of the CCNPP Unit 3 PTS and Bases.

## Response

The departures from the U.S. EPR Technical Specifications were removed as part of CCNPP Unit 3 COLA, Revision 4. Currently, the contents of the Limiting Trip Setpoint / Design Limit column in COLA Part 4 Table 3.3.1-2 are being replaced as discussed in the response to RAI 95, Question 16-1. Therefore, the NRC cited differences between the U.S. EPR Technical Specifications and the COLA Technical Specifications no longer exist. Inequality signs are not used in the U.S. EPR Technical Specifications.

The setpoints for credited reactor trips and Engineered Safety Feature functions listed in the U.S. EPR Technical Specifications are conservatively treated as being related to functions that provide automatic trips which directly protect against violating the reactor core and the Reactor Coolant System pressure boundary safety limits during anticipated operational occurrences, with the exception of:

- ESF for Containment Isolation (Stage 2) on High-High Containment Pressure. This function trips the Reactor Coolant Pumps to limit energy input into containment during Loss of Coolant Accidents of sufficient size or the inadvertent opening of a pressurizer pilot operated safety valve. Protection of containment integrity is not directly related to the protection of a safety limit. This design limit was chosen without applying the setpoint methodology provided in the AREVA Topical Reports referenced in the proposed Setpoint Control Program.
- Containment Isolation (Stage 1) on High Containment Radiation. In case of a significant release of radioactivity into the containment, the containment is isolated to ensure 10 CFR 50.34 and 10 CFR 100.21 limits are not exceeded. Dose limits are not directly related to the protection of a safety limit. This design limit was chosen without applying the setpoint methodology provided in the AREVA Topical Reports referenced in the proposed Setpoint Control Program.
- Emergency Diesel Generator (EDG) Start on Degraded grid Voltage. Initiation of emergency power is not part of the direct success path for accident mitigation and protection of a safety limit. Offsite power is the primary power source. This design limit was chosen without applying the setpoint methodology provided in the AREVA Topical Reports referenced in the proposed Setpoint Control Program.
- EDG Start on Loss of Offsite Power. Initiation of emergency power is not part of the direct success path for accident mitigation and protection of a safety limit. Offsite power is the primary power source. This design limit was chosen without applying the setpoint methodology provided in the AREVA Topical Reports referenced in the proposed Setpoint Control Program.
- Pressurizer Safety Relief Valve (PSRV) Actuation - First Valve and Second Valve. At low coolant temperature, the cylindrical part of the vessel could fail by brittle fracture before the design pressure of the RCS is reached. Therefore, the low-temperature overpressure protection (LTOP) is ensured by automatic opening of the PSRVs. LTOP protection is not directly related to the protection of a safety limit. In accordance with Technical Specification 5.6.4, the analytical methods used to determine the RCS pressure and temperature limits shall be those previously reviewed and approved by the NRC, specifically those described in AREVA Topical

Report ANP-10283, "U.S. EPR Pressure-Temperature Limits Methodology for RCS Heatup and Cooldown."

- Control Room Heating, Ventilation, and Air Conditioning Reconfiguration to Recirculation Mode on High Intake Activity. In case of a significant release of radioactivity, the Control Room HVAC is reconfigured to ensure 10 CFR 50.34 limits are not exceeded. Dose limits are not directly related to the protection of a safety limit. This design limit was chosen without applying the setpoint methodology provided in the AREVA Topical Reports referenced in the proposed Setpoint Control Program.

#### **COLA Impact**

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

**Question 16-7**

LCO 3.3.1, Protection System

Provide the additional information and any changes necessary to explain and correct potential discrepancies regarding the Setting Basis values for ESFAS Functions B.9.d and B.13.

The CCNPP Unit 3 PTS, Table 3.3.1-2, Setting Basis values for Function B.9.d, "Containment Isolation (Stage 1) on High Containment Radiation," and Function B.13, "Control Room Heating, Ventilation, and Air Conditioning Reconfiguration to Recirculation Mode on High Intake Activity," are also specified as Limiting Trip Setpoints (LTSP) in the U.S. EPR GTS, Table 3.3.1-2. The LTSP is the "limiting" predetermined setting for a protective device chosen to ensure automatic actuation prior to the process variable reaching the Analytical Limit, thus ensuring that a Safety Limit (SL) would not be exceeded. The LTSP and the Setting Basis/Analytical Limit cannot be the same number. Validate the Setting Basis values for ESFAS Functions B.9.d and B.13. Justify specifying the same value as both a LTSP (U.S. EPR GTS) and Setting Basis/Analytical Limit, (CCNPP Unit 3 RCOLA). Make any necessary corrections to the CCNPP Unit 3 PTS and Bases.

The additional information is needed to ensure the accuracy and completeness of the CCNPP Unit 3 PTS and Bases.

**Response**

The departures from the U.S. EPR Technical Specifications were removed as part of CCNPP Unit 3 COLA, Revision 4. Currently, the contents of the Limiting Trip Setpoint / Design Limit column in COLA Part 4 Table 3.3.1-2 are being replaced as discussed in the response to RAI 95, Question 16-1. Therefore, the NRC cited differences between the U.S. EPR Technical Specifications and the COLA Technical Specifications no longer exist.

With regard to the function discussed in the RAI 95, Question 16-7, and as discussed in the response to RAI 95, Question 16-6, the values specified for the Containment Isolation (Stage 1) on High Containment Radiation, and Control Room Heating, Ventilation, and Air Conditioning Reconfiguration to Recirculation Mode on High Intake Activity functions are not related to functions that provide automatic trips which directly protect against violating the reactor core and the Reactor Coolant System pressure boundary safety limits during anticipated operational occurrences.

**COLA Impact**

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

**Question 16-8**

LCO 3.3.1, Protection System

Provide the additional information and any changes necessary to explain and correct potential discrepancies regarding the Setting Basis values for Reactor Trip Function A.14, and ESFAS Functions B.2.c and B.8.a.

The CCNPP Unit 3 PTS, Table 3.3.1-2, "Maximum Setpoint" and "Variable Setpoint Rate" Setting Basis values for Function A.14, "Steam Generator (SG) Pressure Drop," Function B.2.c, "Startup and Shutdown Feedwater Isolation on SG Pressure Drop (All SGs)," and Function B.8.a, "Main Steam Isolation Valve (MSIV) Closure on SG Pressure Drop (All SGs)," are also specified as Limiting Trip Setpoints (LTSP) in the U.S. EPR GTS, Table 3.3.1-2. The LTSP is the "limiting" predetermined setting for a protective device chosen to ensure automatic actuation prior to the process variable reaching the Analytical Limit, thus ensuring that a Safety Limit (SL) would not be exceeded. The LTSP and the Setting Basis/Analytical Limit cannot be the same number. Validate the Setting Basis values for Reactor Trip Function A.14, and ESFAS Functions B.2.c and B.8.a. Justify specifying the same value as both a LTSP (U.S. EPR GTS) and Setting Basis/Analytical Limit, (CCNPP Unit 3 RCOLA). Make any necessary corrections to the CCNPP Unit 3 PTS and Bases.

The additional information is needed to ensure the accuracy and completeness of the CCNPP Unit 3 PTS and Bases.

**Response**

The departures from the U.S. EPR Technical Specifications were removed as part of CCNPP Unit 3 COLA, Revision 4. Currently, the contents of the Limiting Trip Setpoint / Design Limit column in COLA Part 4 Table 3.3.1-2 are being replaced as discussed in the response to RAI 95, Question 16-1. Therefore, the NRC cited differences between the U.S. EPR Technical Specifications and the COLA Technical Specifications no longer exist.

**COLA Impact**

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

**Question 16-9**

LCO 3.3.1, Protection System

Provide the additional information and any changes necessary to explain and correct a potential discrepancy associated with footnote (j) in the CCNPP Unit 3 PTS, Table 3.3.1-2.

The CCNPP Unit 3 PTS, Table 3.3.1-2, Function B 3.a, "Safety Injection System (SIS) Actuation on Low Pressurizer Pressure," specifies footnote (j) in Mode 3. It appears that footnote (f) should actually be specified instead of footnote (j). Footnote (f) states "with pressurizer pressure  $\geq$  2005 psia." The CCNPP Bases, APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY, page B 3.3.1-33 (second paragraph), states that "the automatic SIS Actuation on Low Pressurizer Pressure function requires four divisions of the following sensors and processors to be OPERABLE in MODES 1 and 2 and MODE 3 with the pressurizer pressure greater than or equal to 2005 psia." In addition, footnote (f) corresponds to footnote (h) in the U.S. EPR GTS, Table 3.3.1-2, which is also specified in Mode 3 for Function B.3.a. Determine the correct footnote and make any necessary changes.

The additional information is needed to ensure the accuracy and completeness of the CCNPP Unit 3 PTS.

**Response**

The departures from the U.S. EPR Technical Specifications were removed as part of CCNPP Unit 3 COLA, Revision 4. COLA Part 4 does not revise the Technical Specification text cited in RAI 95, Question 16-9. Therefore, the NRC cited differences between the U.S. EPR Technical Specifications and the COLA Technical Specifications no longer exist.

**COLA Impact**

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

**Question 16-10**

LCO 3.3.1, Protection System

Provide a technical justification for removal of the time delays for Reactor Trip Function A.18, and ESFAS Function B.2.b, in the CCNPP Unit 3 PTS, Table 3.3.1-2.

The U.S. EPR GTS, Table 3.3.1-2, includes Limiting Trip Setpoint (LTSP) values with time delays for Function A.18, High Steam Generator (SG) Level, and Function B.2.b, Main Feedwater Full Load Closure on High SG Level (Affected SGs). The time delays have been removed from the Setting Basis values for these functions in the CCNPP Unit 3 PTS, Table 3.3.1-2. The justification for the FSAR Departure, which is identified in Section A of Part 4 of the CCNPP Unit 3 COL Application, Item 4, states that "the change corrects errors in the GTS to be consistent with the U.S. EPR design and analyses. These errors will be corrected in the GTS in a future revision." Identify the errors in the GTS that are being corrected by elimination of the time delays and justify that their removal will facilitate consistency with the U.S. EPR design and analyses. Provide a technical justification that addresses removal of the time delays and explains the justification provided in the referenced Departures section of the CCNPP Unit 3 COL Application.

The technical justification is needed to ensure the accuracy and completeness of the CCNPP Unit 3 PTS, Table 3.3.1-2.

**Response**

The departures from the U.S. EPR Technical Specifications were removed as part of CCNPP Unit 3 COLA, Revision 4. Currently, the contents of the Limiting Trip Setpoint / Design Limit column in COLA Part 4 Table 3.3.1-2 are being replaced as discussed in the response to RAI 95, Question 16-1. Therefore, the NRC cited differences between the U.S. EPR Technical Specifications and the COLA Technical Specifications no longer exist.

**COLA Impact**

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

### **Question 16-11**

#### **LCO 3.3.1, Protection System**

Provide the additional information and any changes necessary to explain and correct potential discrepancies associated with references to the Analytical and Design Limits (Setting Basis) in both the REACTOR TRIPS and ESFAS FUNCTIONS sections of the CCNPP Unit 3 Bases.

The CCNPP Unit 3 Bases, APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY, replaces numerous U.S. EPR Bases references to the Limiting Trip Setpoint (LTSP), with either "Analytical Limit" or "Design Limit" in the Bases discussions of the individual Reactor Trip and ESFAS Functions. The limit type (Analytical or Design) depends on whether the associated Limiting Safety System Setting (LSSS) specified for a given process variable protects a Safety Limit (SL) or not. The LTSP is the "limiting" predetermined setting for a protective device chosen to ensure automatic actuation prior to the process variable reaching the Analytical or Design Limit.

Although the individual Reactor Trip and ESFAS Function Bases discussions contain information pertaining to LSSS Setpoint selection considerations, the Setting Basis is referenced. The Limiting Safety System Settings establish the operating envelopes and margins to various limits, not the Analytical or Design Limits. As an example, the Analytical Limit is the limit of the process variable at which a safety action is initiated, as established by the safety analysis, to ensure that a SL is not exceeded. Automatic protection actions however, are initiated by automatic protective devices whose actual settings are more conservative than the Analytical Limit to account for instrument loop uncertainties related to the setting. 10 CFR 50.36(c)(1)(ii)(A) states that "limiting safety system settings for nuclear reactors are settings for automatic protective devices...so chosen that automatic protective actions will correct the abnormal situation before a safety limit is exceeded." As such, the LSSS setpoint selected by the licensee for plant operations (i.e. LTSP, NTSP) should be the value actually referenced in the aforementioned Bases sections, not the Setting Basis. Determine the setpoint value which will correspond to the LSSS and revise the CCNPP Unit 3 Bases accordingly. Ensure that the word "set," which was deleted to facilitate references to the Analytical and Design Limits, is reintroduced in order to reestablish the original intent of the REACTOR TRIPS and ESFAS FUNCTIONS sections of the Bases.

Note: A revision to the Bases that would replace all references to the Limiting Trip Setpoint (LTSP) as the LSSS, with references to the Nominal Trip Setpoint (NTSP) as the LSSS, is being evaluated under a separate RAI on the basis that the NTSP meets the definition of a Limiting Safety System Setting and is the actual setting value programmed for LSSS protective trip functions.

The revision is needed to ensure the accuracy and completeness of the CCNPP Unit 3 Bases.

### **Response**

The departures from the U.S. EPR Technical Specifications were removed as part of CCNPP Unit 3 COLA, Revision 4. COLA Part 4 does not revise the Technical Specification Bases text cited in RAI 95, Question 16-11. Therefore, the NRC cited differences between the U.S. EPR Technical Specifications Bases and the COLA Technical Specifications Bases no longer exist.

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A discussion of the designation of the Limiting Trip Setpoint as the LSSS is provided as part of the response to RAI 95, Question 16-1.

**COLA Impact**

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

**Question 16-12**

LCO 3.3.1, Protection System

Revise the reference to 10 CFR 50.36(d)(2)(ii) in the CCNPP Unit 3 Bases.

The CCNPP Unit 3 Bases, APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY, page B 3.3.1-12 (third paragraph), states that "the PS sensors, manual actuation switches, signal processors, and specified actuation devices satisfy Criterion 3 of 10 CFR 50.36(d)(2)(ii)." 10 CFR 50.36, "Technical Specifications," has been amended by changing the designation of paragraph (d) to paragraph (c), in order to resolve administrative issues. Correct the 10 CFR 50.36 reference in the Bases statement.

The revision is needed to ensure the accuracy and completeness of the CCNPP Unit 3 Bases.

**Response**

The departures from the U.S. EPR Technical Specifications were removed as part of CCNPP Unit 3 COLA, Revision 4. COLA Part 4 does not revise the Technical Specification Bases text cited in RAI 95, Question 16-12. The correction to the 10 CFR 50.36 reference were incorporated into Revision 1 of the U.S. EPR Technical Specifications.

**COLA Impact**

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

**Question 16-13**

LCO 3.3.1, Protection System

Provide the additional information and any changes necessary to explain and correct inconsistencies between departures identified in Part 4 of the CCNPP Unit 3 COL Application and the CCNPP Unit 3 Bases.

Departure item 21 identified in Part 4 of the CCNPP Unit 3 COL Application states that "CCNPP Unit 3 Bases 3.3.1, "Protection System (PS)," in the Applicable Safety Analyses, LCO, and Applicability section is revised to eliminate the discussion of Function A.20, Manual Reactor Trip."

Departure item 22 identified in Part 4 of the CCNPP Unit 3 COL Application states that "CCNPP Unit 3 Bases 3.3.1, "Protection System (PS)," in the Applicable Safety Analyses, LCO, and Applicability section is revised to eliminate the discussion of the LTSP for Function B.5, Partial Cooldown on SIS Actuation."

The CCNPP Unit 3 Bases, APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY section (COLA revision 3), has not been revised to eliminate the discussions identified in departure items 21 and 22. Validate the inconsistencies and make any necessary corrections.

The additional information is needed to ensure the accuracy and completeness of the CCNPP Unit 3 Bases.

**Response**

The departures from the U.S. EPR Technical Specifications were removed as part of CCNPP Unit 3 COLA, Revision 4. COLA Part 4 does not revise the Technical Specification Bases text cited in RAI 95, Question 16-13. Therefore, the NRC cited differences between the U.S. EPR Technical Specifications Bases and the COLA Technical Specifications Bases no longer exist.

**COLA Impact**

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

**Question 16-14**

LCO 3.3.1, Protection System

Provide the additional information and any changes necessary to explain and correct a potential discrepancy associated with the Bases discussion for SR 3.3.1.5.

The CCNPP Unit 3 Bases, SURVEILLANCE REQUIREMENTS, SR 3.3.1.5, page B 3.3.1-74, adds the following statement to the end of the first paragraph: "any setpoint adjustment shall be consistent with the assumptions of the current setpoint methodology as required by the SCP." The Sensor Operational Test (SOT) is defined in the USE AND APPLICATION Section 1.1, Definition, as "the injection of a simulated or actual signal into the division as close to the sensor as practicable to verify OPERABILITY of all devices in the input circuit required for OPERABILITY. The SOT shall include the verification of the accuracy and time constants of the analog input modules. The SOT may be performed by means of any series of sequential, overlapping, or total steps." The SOT definition makes no reference to setpoints or setpoint adjustments. The SOT is a new surveillance requirement that was introduced with the U.S. EPR GTS. It is unclear whether or not there are provisions within the SOT to actually perform setpoint adjustments on the basis of the definition. Note: An RAI was submitted to AREVA under the U.S. EPR FSAR regarding this issue.

Determine if the Bases statement is applicable within the context of the SR 3.3.1.5 Bases discussion and make any necessary corrections.

The additional information is needed to ensure the accuracy and completeness of the CCNPP Unit 3 Bases.

**Response**

As stated in the response to RAI 95, Question 16-1, the SENSOR OPERATIONAL TEST does not result in the adjustment of setpoints. Setpoints are software-specified values in the digitally based U.S. EPR Protection System. Actions necessary to provide assurance of the accuracy of the sensor input are performed as part of the CALIBRATION in the U.S. EPR Technical Specifications.

The departures from the U.S. EPR Technical Specifications were removed as part of CCNPP Unit 3 COLA, Revision 4. COLA Part 4 does not revise the Technical Specification Bases text cited in RAI 95, Question 16-14. Therefore, the NRC cited differences between the U.S. EPR Technical Specifications and the COLA Technical Specifications no longer exist.

**COLA Impact**

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

**Question 16-15**

LCO 3.3.2, PAM Instrumentation

Revise the reference to 10 CFR 50.36(d)(2)(ii)(C) in the CCNPP Unit 3 Bases.

The CCNPP Unit 3 Bases, APPLICABLE SAFETY ANALYSES, page B 3.3.2-2 (first paragraph), states that "pAM instrumentation used to support pre-planned, manually controlled actions satisfy Criterion 3 of 10 CFR 50.36(d)(2)(ii)(C)." 10 CFR 50.36, "Technical Specifications," has been amended by changing the designation of paragraph (d) to paragraph (c), in order to resolve administrative issues. Correct the 10 CFR 50.36 reference in the Bases statement.

The revision is needed to ensure the accuracy and completeness of the CCNPP Unit 3 Bases.

**Response**

The departures from the U.S. EPR Technical Specifications were removed as part of CCNPP Unit 3 COLA, Revision 4. COLA Part 4 does not revise the Technical Specification Bases text cited in RAI 95, Question 16-15. The correction to the 10 CFR 50.36 reference was incorporated into Revision 1 of the U.S. EPR Technical Specifications.

**COLA Impact**

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

**Question 16-16**

LCO 3.3.2, PAM Instrumentation

Correct page numbering discrepancies identified in the CCNPP Unit 3 Bases.

The CCNPP Unit 3 Bases, LCO 3.3.2, Post Accident Monitoring (PAM) Instrumentation, has two pages designated as B 3.3.2-1. Correct the page numbering discrepancy and renumber the remaining pages accordingly.

The page numbering corrections are needed to ensure the accuracy and completeness of the CCNPP Unit 3 Bases.

**Response**

The departures from the U.S. EPR Technical Specifications were removed as part of CCNPP Unit 3 COLA, Revision 4. COLA Part 4 does not revise the Technical Specification Bases text cited in RAI 95, Question 16-16. The correction to the page numbering was incorporated into Revision 1 of the U.S. EPR Technical Specifications.

**COLA Impact**

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

**Question 16-17**

LCO 3.3.3, Remote Shutdown System (RSS)

Revise the reference to 10 CFR 50.36(d)(2)(ii) in the CCNPP Unit 3 Bases.

The CCNPP Unit 3 Bases, APPLICABLE SAFETY ANALYSES, page B 3.3.2-2 (third paragraph), states that "the RSS satisfies Criterion 4 of 10 CFR 50.36(d)(2)(ii)." 10 CFR 50.36, "Technical Specifications," has been amended by changing the designation of paragraph (d) to paragraph (c), in order to resolve administrative issues. Correct the 10 CFR 50.36 reference in the Bases statement.

The revision is needed to ensure the accuracy and completeness of the CCNPP Unit 3 Bases.

**Response**

The departures from the U.S. EPR Technical Specifications were removed as part of CCNPP Unit 3 COLA, Revision 4. COLA Part 4 does not revise the Technical Specification Bases text cited in RAI 95, Question 16-17. The correction to the 10 CFR 50.36 reference was incorporated into Revision 1 of the U.S. EPR Technical Specifications.

**COLA Impact**

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

**Question 16-18**

3.8, Electrical Power Systems

Revise the Electrical Power Systems Bases references to 10 CFR 50.36(d)(2)(ii) in the CCNPP Unit 3 Bases.

10 CFR 50.36, "Technical Specifications," has been amended by changing the designation of paragraph (d) to paragraph (c), in order to resolve administrative issues. Correct the 10 CFR 50.36 reference in the following LCO Bases sections of the CCNPP Electrical Power Systems Bases (COLA Revision 3):

- B 3.8.1, AC Sources - Operating, page B 3.8.1-4
- B 3.8.2, AC Sources - Shutdown, page B 3.8.2-2
- B 3.8.3, Diesel Fuel Oil, Lube Oil, and Starting Air, page B 3.8.3-2
- B 3.8.4, DC Sources - Operating, page B 3.8.4-3
- B 3.8.5, DC Sources - Shutdown, page B 3.8.5-2
- B 3.8.6, Battery Parameters, page B 3.8.6-1
- B 3.8.7, Inverters - Operating, page B 3.8.7-1
- B 3.8.8, Inverters - Shutdown, page B 3.8.8-2
- B 3.8.9, Distribution Systems - Operating, page B 3.8.9-2
- B 3.8.10, Distribution Systems - Shutdown, page B 3.8.10-1

The revisions are needed to ensure the accuracy and completeness of the CCNPP Unit 3 Bases.

**Response**

The departures from the U.S. EPR Technical Specifications were removed as part of CCNPP Unit 3 COLA, Revision 4. COLA Part 4 does not revise the Technical Specification Bases text cited in RAI 95, Question 16-18. The corrections to the 10 CFR 50.36 references were incorporated into Revision 1 of the U.S. EPR Technical Specifications.

**COLA Impact**

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

**Question 16-19**

**3.8, Electrical Power Systems**

Revise the CCNPP Unit 3 Bases to correct editorial and formatting errors identified in Bases Section 3.8 - Electrical Power Systems.

The CCNPP Unit 3 Bases, ELECTRICAL POWER SYSTEMS (B 3.8), pages B 3.8.2-2, B 3.8.3-1, B 3.8.3-2 and B 3.8.5-2 contain the following editorial and formatting errors:

- The CCNPP Unit 3 Bases, B 3.8.2, AC Sources - Shutdown, page B 3.8.2-2, incorrectly specifies "BACKGROUND" instead of "APPLICABLE SAFETY ANALYSES (continued)" in the upper left hand corner of the page.
- The CCNPP Unit 3 Bases, B 3.8.5, DC Sources - Shutdown, page B 3.8.5-2, incorrectly specifies "BACKGROUND" instead of "APPLICABLE SAFETY ANALYSES (continued)" in the upper left hand corner of the page.
- The CCNPP Unit 3 Bases, B 3.8.3, Diesel Fuel Oil, Lube Oil, and Starting Air, refers to "APPLICABLE SAFETY ANALYSES" as "APPLICABLE SAFETY ANALYSIS" in the Bases section title on pages B 3.8.3-1 and B 3.8.3-2. "ANALYSIS" should be pluralized to reflect consistent use of the word "ANALYSES" throughout the Bases.

The revisions are needed to ensure the accuracy and consistency of the CCNPP Unit 3 Bases.

**Response**

The departures from the U.S. EPR Technical Specifications were removed as part of CCNPP Unit 3 COLA, Revision 4. COLA Part 4 does not revise the Technical Specification Bases text cited in RAI 95, Question 16-19. The correction to the cited editorial and formatting issues were incorporated into Revision 1 of the U.S. EPR Technical Specifications.

**COLA Impact**

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