Calvert Cliffs Nuclear Power Plant Unit 3

Combined License Application

Part 4: Technical Specifications and Bases

Revision 9
March, 2013

This COLA Part includes RCOLA generic text. Site Specific Text is enclosed in braces: {Site Specific Information}

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PART 4 TECHNICAL SPECIFICATIONS AND BASES

Introduction

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

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

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

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

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

The differences from Revision 4 of the U.S. EPR Design Certification, either due to Reviewer's Notes and brackets called out within the body of the U.S. EPR Generic Technical Specifications and Bases, or as identified by this applicant, are described and justified in the discussion below:

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GENERIC CHANGES

These changes are made for all UniStar fleet COLAs.

1 TS 1.1 DEFINITIONS

Generic Technical Specifications:

a. The RESPONSE TIME definition includes brackets around the following:

"In lieu of measurement, response time may be verified for selected components provided that the components and methodology for the verification have been previously reviewed and approved by the NRC."

b. A Reviewer's Note in the RESPONSE TIME definition states:

“The last sentence in the RESPONSE TIME definition applies to plants that have obtained NRC approval to utilize allocations for selected components based on NRC-approved U.S. EPR-applicable Topical Reports.”

Plant-Specific Technical Specifications:

a. The brackets and associated text in the RESPONSE TIME definition are deleted.

b. The Reviewer's Note in the RESPONSE TIME definition is deleted.

Justification:

a. The brackets and associated text are no longer required because there are no NRC approved Topical Reports which may be utilized to modify the requirements for response time surveillance testing.

b. The Reviewer's Note is no longer required because there are no NRC approved Topical Reports which may be utilized to modify the requirements for the response time surveillance testing.

2 LCO 3.3.1 DISTRIBUTED CONTROL SYSTEM (DCS)

Generic Technical Specifications:

a. Surveillance Requirement 3.3.1.4 states:

”Perform CALIBRATION.”

b. Surveillance Requirement 3.3.1.6 states:

”Perform CALIBRATION.”

c. Surveillance Requirement 3.3.1.9 states:

"Verify NTSPs properly loaded in APUs."

d. Surveillance Requirement 3.3.1.10 states:

“Verify NTSPs properly loaded in SAS Control Units.”

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

f. Table 3.3.1-3 contains a “Nominal Trip Setpoint” column. Bracketed numerical values are provided in this column.

g. The “Applicable APU” column of Table 3.3.1-2 and the “Applicable” CU column of Table 3.3.1-3 contain bracketed information.

h. Table 3.3.1-2, Footnote x, states:

"As specified in the Core Operating Limits Report (COLR)."

i. Table 3.3.1-2, Footnote y, states:

"As specified in the Pressure Temperature Limits Report."

Plant-Specific Technical Specifications:

a. Surveillance Requirement 3.3.1.4 is revised to state:

”Perform CALIBRATION in accordance with Specification 5.5.19, ”Setpoint Control Program (SCP). ””

b. Surveillance Requirement 3.3.1.6 is revised to state:

”Perform CALIBRATION in accordance with Specification 5.5.19, ”Setpoint Control Program (SCP).””

c. Surveillance Requirement 3.3.1.9 is revised to state:

"Verify NTSPs are properly loaded in APUs in accordance with Specification 5.5.19, "Setpoint Control Program.""

d. Surveillance Requirement 3.3.1.10 is revised to state:

“Verify NTSPs are properly loaded in SAS Control Units in accordance with Specification 5.5.19, "Setpoint Control Program.”

e. Table 3.3.1-2 contains a "Nominal Trip Setpoint" column. This column is deleted.

f. Table 3.3.1-3 contains a “Nominal Trip Setpoint” column. The column is deleted.

g. The bracketed information in the “Applicable APU” column of Table 3.3.1-2 and the “Applicable CU” column of Table 3.3.1-1 is deleted and will be addressed by the “Setpoint Control Program.”

h. Table 3.3.1-2, Footnote x, is revised to state:

Deleted.

i. Table 3.3.1-2, Footnote y, is revised to state:

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Deleted.

Justification:

a. 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.

b. 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.

c. A Setpoint Control Program is being incorporated into the Plant-Specific Technical Specifications.

d. A Setpoint Control Program is being incorporated into the Plant-Specific Technical Specifications.

e. A Setpoint Control Program is being incorporated into the Plant-Specific Technical Specifications. Specific setpoints will no longer be included in Table 3.3.1-2.

f. The column is no longer required due to the use of a Setpoint Control Program.

g. The bracketed information is no longer required due to the use of a Setpoint Control Program.

h. The footnote is no longer required due to the use of a Setpoint Control Program.

i. The footnote is no longer required due to the use of a Setpoint Control Program.

3 LCO 3.7.10 CONTROL ROOM EMERGENCY FILTRATION (CREF)

Generic Technical Specifications:

TS LCO 3.7.10, "Control Room Emergency Filtration (CREF)," Required Action B.2 contains bracketed information on toxic gas.

TS 3.7.10 Required Actions B.2 and D.1 contain a Reviewer's Note that states "The need for toxic gas isolation state will be determined by the COL applicant." Requirements for CREF isolation to mitigate toxic gas events are placed in brackets indicating that they are not required for plants that do not credit the CREF for mitigation of toxic gas events.

TS 3.7.10 Required Action D.1 has a Note stating: "Place CREF train in toxic gas isolation state if automatic transfer to toxic gas isolation state is inoperable."

Plant-Specific Technical Specifications:

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

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The bracketed information regarding toxic gas is deleted from the Plant-Specific Technical Specifications and Bases.

The following references to toxic gas in TS 3.7.10 are deleted:

TS 3.7.10 Required Actions B.2 and D.1 Reviewer's Notes stating "The need for toxic gas isolation state will be determined by the COL applicant."

TS 3.7.10 Required Action D.1 Note stating "Place CREF train in toxic gas isolation state if automatic transfer to toxic gas isolation state is inoperable."

The bracketed information [toxic gas,] in TS 3.7.10 Required Action B.2.

Justification:

Toxic gas and hazardous chemical automatic protection for the Control Room Envelope is not required based on the site-specific evaluation provided in Part 2 of this COL Application (FSAR Sections 2.2.3, 6.4.1 and 6.4.3).

4 TS 5.1 RESPONSIBILITY

Generic Technical Specifications:

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

1. "Titles for members of the unit staff shall be specified by use of an overall statement referencing an ANSI Standard acceptable to the NRC staff from which the titles were obtained, or an alternative title may be designated for this position. Generally, the first method is preferable; however, the second method is adoptable to those unit staffs requiring special titles because of unique organizational structures.

2. The ANSI Standard shall be the same ANSI Standard referenced in Section 5.3, Unit Staff Qualifications. If alternative titles are used, all requirements of these Technical Specifications apply to the position with the alternative title applied with the specified title. Unit staff titles shall be specified in the Final Safety Analysis Report or Quality Assurance Plan. Unit staff titles shall be maintained and revised using those procedures approved for modifying/revising the Final Safety Analysis Report or Quality Assurance Plan."

Plant-Specific Technical Specifications:

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

Justification:

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

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5 TS 5.2.2 UNIT STAFF

Generic Technical Specifications:

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

Plant-Specific Technical Specifications:

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

Justification:

This is a single unit facility.

6 TS 5.3 UNIT STAFF QUALIFICATIONS

Generic Technical Specifications:

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

Plant-Specific Technical Specifications:

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

Justification:

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

7 TS 5.5.11 GASEOUS WASTE PROCESSING SYSTEM RADIOACTIVITY MONITORING PROGRAM

Generic Technical Specifications:

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

Plant-Specific Technical Specifications:

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

Justification:

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

8 TS 5.5.15 CONTAINMENT LEAKAGE RATE TESTING PROGRAM

Generic Technical Specifications:

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

Plant-Specific Technical Specifications:

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

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Justification:

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

9 TS 5.5.17 CONTROL ROOM ENVELOPE HABITABILITY PROGRAM

Generic Technical Specifications:

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

Plant-Specific Technical Specifications:

This section of the U. S. EPR Generic Technical Specifications is incorporated by reference with the following supplemental information to TS 5.5.17.e:

The licensing basis analyses for hazardous chemicals does not assume automatic actuation of the CREF.

Justification:

Toxic gas and hazardous chemical automatic protection for the Control Room Envelope is not required based on the site-specific evaluation provided in Part 2 of this COL Application (FSAR Sections 2.2.3, 6.4.1 and 6.4.3).

10 TS 5.5.19 SETPOINT CONTROL PROGRAM

Generic Technical Specifications:

The Generic Technical Specifications do not describe a Setpoint Control Program.

Plant-Specific Technical Specifications:

The following program description represents an Exemption and Departure to the U.S. EPR FSAR. It is added to the Plant-Specific Technical Specifications.

5.5.19 Setpoint Control Program

a. The Setpoint Control Program (SCP) 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 LSSS for both SL related and Non-SL related automatic protection instrumentation functions are included in the scope of the Setpoint Control Program.

b. The Limiting Trip Setpoint (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, except for permissive functions, which only require the NTSP, AV, PTAC, and ALT, shall be calculated in conformance with the instrumentation setpoint methodology 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.

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2. [ANP-10287P-A, "Incore Trip Setpoint and Transient Setpoint Methodology For U.S. EPR," Revision #, dated Month dd, yyyy, (MLxxxxxxxxx)], and the conditions stated in the associated NRC safety evaluation, [Letter to AREVA NP from NRC, Title, dated Month, dd, yyyy, (MLxxxxxxxxx)].

c. Performance of CALIBRATION surveillances shall include the following:

1. The as-left calibration setting values shall be the values at which the sensor was set at the completion of the surveillance with no additional adjustment of the sensor. The as-found calibration setting values shall be the values measured during subsequent performance of the surveillance before making any adjustment to the sensor that could change the calibration setting values.

2. The as-found calibration setting values shall be compared with the previous as-left values or the specified calibration settings (e.g., 0, 25, 50, 75, 100%). If the as-found calibration setting values are compared with the specified calibration settings to meet this requirement, then the following conditions apply:

i. the setting tolerance band (i.e., 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 errors, and readability uncertainties;

ii. the setting tolerance band (i.e., the specified ALT) must be included in the total loop uncertainty; and

iii. the pre-defined test acceptance criteria band (i.e., the specified PTAC) for each as-found calibration setting 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 any as-found calibration setting value is outside the limits of "previous as-left value ± PTAC" or "calibration setting ± PTAC," but conservative with respect to the AV, then the sensor shall be evaluated to verify that it is functioning in accordance with its design basis before declaring the surveillance requirement met and returning the sensor to service. This condition shall be dispositioned by the plant's corrective action program.

4. If any as-found calibration setting value is non-conservative with respect to the AV, then the surveillance requirement is not met and the sensor shall be immediately declared inoperable.

5. The sensor shall be calibrated such that the as-left calibration setting values are within the specified ALT around the specified calibration settings (e.g., 0, 25, 50, 75, 100%) at the completion of each CALIBRATION surveillance; otherwise, the surveillance requirement is not met and the sensor shall be immediately declared inoperable.

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d. The difference between each as-found calibration setting value and either the previously recorded as-left value or the specified calibration setting (e.g., 0, 25, 50, 75, 100%) for each sensor, shall be trended and evaluated to verify that the sensor is functioning in accordance with its design basis.

e. The Setpoint Control Program shall establish a document containing the current value of the specified LTSP, NTSP, AV, PTAC, and ALT for each Technical Specification required automatic protection instrumentation function, except for permissive functions, which only require the NTSP, AV, PTAC, and ALT, 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 the specified LTSP, NTSP, AV, PTAC, and ALT values 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.

f. The NTSP value for each Technical Specification required automatic protection instrumentation function shall be verified to be properly loaded into its assigned Acquisition and Processing Unit during the performance of Surveillance Requirement 3.3.1.9.

Justification:

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 LCO 3.3.1, TS 5.5, ”Programs and Manuals,” coupled with the addition of supporting changes to "Distributed Control System (DCS),” and Bases 3.3.1, ”Distributed Control System (DCS),” will satisfy this requirement.

11 TS 5.6.1 ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

Generic Technical Specifications:

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

Plant-Specific Technical Specifications:

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

Justification:

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

12 TS 5.6.2 RADIOACTIVE EFFLUENT RELEASE REPORT

Generic Technical Specifications:

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

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Plant-Specific Technical Specifications:

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

Justification:

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

13 BASES 3.3.1 DISTRIBUTED CONTROL SYSTEM (DCS)

Generic Technical Specifications:

a. TS Bases 3.3.1 includes a Reviewer's Note in the Surveillance Requirements section that states "In order for a plant to take credit for topical reports as the basis for justifying Frequencies, topical reports must be supported by an NRC staff SER that establishes the acceptability of each topical report for that unit."

b. TS Bases 3.3.1, Background, contains a paragraph that begins with "However, there is also some point beyond which the device would have not been able to perform its function due, for example, to greater than expected drift."

c. TS Bases, 3.3.1 Actions, begins with "The most common causes of division inoperability are outright failure or drift of the sensor sufficient to exceed the tolerance allowed by the plant specific setpoint analysis."

d. TS Bases 3.3.1, Surveillance Requirements, 3.3.1.4, begins with "The online boron meters are a half shell design and are not in contact with the reactor coolant."

e. TS Bases 3.3.1, Surveillance Requirements, 3.3.1.6, begins with "A CALIBRATION of each DCS sensor every 24 months ensures that each instrument division is reading accurately and within tolerance."

f. TS Bases 3.3.1, Surveillance Requirements, 3.3.1.9, states "SR 3.3.1.9 verifies that the NTSPs have been properly loaded into the applicable APUs."

g. TS Bases 3.3.1, Surveillance Requirements, SR 3.3.1.10 states:

   <u>SR 3.3.1.10</u>

   "SR 3.3.1.10 verifies that the NTSPs have been properly loaded into the applicable SAS CUs."

h. TS Bases 3.3.1 includes a Reviewer's Note and associated bracketed text and references 8 and 9 in Surveillance Requirement 3.3.11 that states

   "The following Bases apply to plants that have obtained NRC approval to utilize allocations for selected components based on NRC-approved U.S. EPR-applicable Topical Reports."

Plant-Specific Technical Specifications:

a. TS Bases 3.3.1 Surveillance Requirements section, is revised to remove the first Reviewer's Note regarding topical reports.

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b. 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 5.5.19, 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."

c. 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."

d. TS Bases 3.3.1, Surveillance Requirements, SR 3.3.1.4, is revised to add the following paragraph at the end of the SR:

> "In accordance with Specification 5.5.19, the Setpoint Control Program shall establish a document containing the current value of the specified LTSP, NTSP, AV, PTAC, and ALT for each Technical Specification required automatic protection instrumentation function, except for permissive functions, which only require the NTSP, AV, PTAC, and ALT. The Setpoint Control Program also establishes requirements for the performance of CALIBRATION surveillances."

e. TS Bases 3.3.1, Surveillance Requirements, SR 3.3.1.6, is revised to add the following paragraph at the end of the SR:

> "In accordance with Specification 5.5.19, the Setpoint Control Program shall establish a document containing the current value of the specified LTSP, NTSP, AV, PTAC, and ALT for each Technical Specification required automatic protection instrumentation function, except for permissive functions, which only require the NTSP, AV, PTAC, and ALT . The Setpoint Control Program also establishes requirements for the performance of CALIBRATION surveillances."

f. TS Bases 3.3.1, Surveillance Requirements, SR 3.3.1.9, is revised to state:

"SR 3.3.1.9 verifies that the Nominal Trip Setpoints are properly loaded into the applicable APUs. In accordance with Specification 5.5.19, the Setpoint Control Program shall establish a document containing the current value of the specified LTSP, NTSP, AV, PTAC, and ALT for each Technical Specification required automatic protection instrumentation function, except for permissive functions, which only require the NTSP, AV, PTAC, and ALT "

g. TS Bases 3.3.1, Surveillance Requirements, SR 3.3.1.10 is revised to state:

> <u>SR 3.3.1.10</u>

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"SR 3.3.1.10 verifies NTSPs are properly loaded into the applicable SAS Control Units in accordance with Specification 5.5.19, "Setpoint Control Program."

h. TS Bases 3.3.1 Surveillance Requirement 3.3.1.11 is revised to remove the Reviewer's Note and associated bracketed text regarding topical reports and references 8 and 9.

Justification:

a. The specified Frequencies in the Plant-Specific TS 3.3.1 are based on the Frequencies specified in the Generic TS 3.3.1. Topical reports are not credited as the basis for justifying Surveillance Frequencies.

b.-h.. 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 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, "Distributed Control System (DCS)," satisfy this requirement.

14 BASES 3.6.1 CONTAINMENT

Generic Technical Specifications:

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

Plant-Specific Technical Specifications:

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

Justification:

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

15 BASES 3.7.10 CONTROL ROOM EMERGENCY FILTRATION (CREF)

Generic Technical Specifications:

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

TS Bases 3.7.10 Background Section, Applicable Safety Analysis and Required Actions contain a Reviewer's Note that states "The need for toxic gas isolation state will be determined by the COL applicant." Requirements for CREF isolation to mitigate toxic gas events are placed in brackets indicating that they are not required for plants that do not credit the CREF for mitigation of toxic gas events.

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Plant-Specific Technical Specifications:

TS Bases 3.7.10 is incorporated by reference with the following supplemental information:

{"The detection of toxic gases and subsequent automatic isolation of the Control Room Envelope (CRE) is not required for CCNPP and is not a part of the design basis. The results of the toxic chemicals evaluation in Section 2.2.3 did not identify any credible toxic chemical accidents that exceed the limits established in Regulatory Guide 1.78. As a result, toxic gas detectors and CRE isolation are not required. Therefore, TS 3.7.10 does not include any requirements corresponding to the Generic TS bracketed information related to toxic gas."}

The bracketed information related to toxic gas is deleted from TS Bases 3.7.10.

Reviewer's Notes stating "The need for toxic gas isolation state will be determined by the COL applicant." are deleted.

The bracketed information [toxic gas], [toxic gases], [and toxic gas], [toxic gas and], and similar references are deleted from:

Third paragraph in TS Bases 3.7.10 Applicable Safety Analyses section,
Sixth paragraph in TS Bases 3.7.10 LCO section,
First and second paragraphs in TS Bases 3.7.10 Required Actions B1, B2 and B3,

Second paragraph in TS Bases SR 3.7.10.4

In the fifth paragraph of the TS Bases 3.7.10 Background, the following bracketed information is deleted:

> "[either of two separate states (emergency radiation state or toxic gas isolation state) of]"
>
> "[, depending on the initiation signal]. "
>
> "[the system to the emergency radiation state of] "

In the sixth paragraph of the TS Bases 3.7.10 Background, the following bracketed information is deleted:

> "[The actions taken in the toxic gas isolation state are the same, except that the control room operator switches the CREF to a filtration alignment to minimize any outside air from entering the CRE through the CRE boundary.] "

In the seventh paragraph of the TS Bases 3.7.10 Background, the following bracketed information is deleted:

> " [and toxic gas] "
>
> "[, either the emergency radiation state or toxic gas isolation state, as required]. "
>
> "[The actions of the toxic gas isolation state are more restrictive, and will override the actions of the emergency radiation state.]"

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In the fourth paragraph in TS Bases 3.7.10 Required Action D.1 and D.2, the following bracketed information is deleted:

> "[Required Action D.1 is modified by a Note indicating to place the system in the toxic gas isolation state.]"

Justification:

Toxic gas and hazardous chemical automatic protection for the CRE is not required based on the site-specific evaluation provided in Part 2 of this COL Application (FSAR Sections 2.2.3, 6.4.1 and 6.4.3).

16 BASES 3.7.12 SAFEGUARD BUILDING CONTROLLED AREA VENTILATION SYSTEM (SBVS)

Generic Technical Specifications:

TS Bases 3.7.12 contains a Reviewer's Note in the Actions section for Required Action B.1, that indicates that the adoption of Condition B is dependent on a commitment from the licensee to have guidance available describing compensatory measures to be taken in the event of intentional or unintentional entry into Condition B.

TS Bases 3.7.12 Required Action B.1 contains a Reviewer's Note that states "The need for toxic gas isolation state will be determined by the COL applicant." Requirements for SBVS isolation to mitigate toxic gas events are placed in brackets in Required Action B.1 indicating that they are not required for plants that do not credit the SBVS for mitigation of toxic gas events.

Plant-Specific Technical Specifications:

TS Bases 3.7.12 is incorporated by reference with the following supplemental information:

TS Bases 3.7.12 is revised to remove the Reviewer's Note and modify the discussion for Required Action B.1 to include the required commitment.

The Reviewer's Notes stating "The need for toxic gas isolation state will be determined by the COL applicant." is deleted from TS Bases 3.7.12 Required Action B.1.

The bracketed information [toxic gases] is deleted from the third paragraph in TS Bases 3.7.12 Required Action B.1.

The revised TS Bases text is:

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

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of compensatory measures. The 24 hour Completion Time is a typically reasonable time to diagnose, plan and possibly repair, and test most problems with the safeguard buildings or fuel building boundary.

Justification:

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

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

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SITE-SPECIFIC CHANGES

{These changes are unique to Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3.

1 LCO 3.3.2 POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

Generic Technical Specifications:

TS Table 3.3.2-1, "Post Accident Monitoring Instrumentation," provides the post accident monitoring (PAM) variables identified by the unit specific Regulatory Guide 1.97 analyses that meet the definition of Type A, B, and C variables. The last row of TS Table 3.3.2-1, "Post Accident Monitoring Instrumentation," includes brackets around the following:

[19. Site-specific Variables]

Plant Specific Technical Specifications:

The CCNPP Unit 3 TS Table 3.3.2-1, "Post Accident Monitoring Instrumentation," is revised to provide plant specific information. The bracketed text is deleted and replaced with the following text:

FUNCTION		REQUIRED DIVISIONS	CONDITION REFERENCED FROM REQUIRED ACTION D.1
19.	Essential Service Water System Cooling Tower Basin Level	2	E

Justification:

Adding the PAM variable, "Essential Service Water System Cooling Tower Basin Level," to TS Table 3.3.2-1, "Post Accident Monitoring Instrumentation," ensures proper instrument calibration frequency.

2 LCO 3.7.19 ULTIMATE HEAT SINK (UHS)

Generic Technical Specifications:

TS 3.7.19, “Ultimate Heat Sink (UHS),” contains the following Reviewer’s Note in the SR section:

> “A surveillance to verify the ability to supply emergency makeup water to each UHS cooling tower basin at ≥ 300 gpm will be provided by the COL applicant.”

And the following related bracketed requirement in the SR Section:

[SR 3.7.19.6	Verify the ability to supply emergency makeup water to each UHS cooling tower basin at ≥ 300 gpm.	In accordance with the Inservice Testing Program.]

Plant Specific Technical Specifications:

The Reviewer’s Note in the Surveillance Requirements is deleted, and the following Surveillance is added:

SR 3.7.19.6	Verify the ability to supply emergency makeup water to each UHS cooling tower basin at ≥ 300 gpm.	In accordance with the Inservice Testing Program.

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Justification

The site specific information provided is consistent with the CCNPP Unit 3 FSAR Section 9.2.5 description of the UHS Makeup Water System and Part 10, ITAACs, Table 2.4-22, Item 17.

3 TS 4.1 SITE LOCATION

Generic Technical Specifications:

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

Plant Specific Technical Specifications:

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

> "The site for the Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 is located on the western shore of the Chesapeake Bay in Calvert County, Maryland, about 10.5 miles southeast of Prince Frederick, Maryland. The site is approximately 45 miles southeast of Washington, DC, and 60 miles south of Baltimore, Maryland. The exclusion area boundary for CCNPP Unit 3 is a circle with a radius of 3324 feet. The exclusion area boundary establishes a radius of at least 2640 feet from potential CCNPP Unit 3 release points."

Justification:

The site location information provided is consistent with the CCNPP Unit 3 FSAR description of site location.

4 BASES 3.3.2 POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

Generic Technical Specifications:

TS Bases 3.3.2, "Post Accident Monitoring Instrumentation," provides the post accident monitoring (PAM) variables identified by the unit specific Regulatory Guide 1.97 analyses that meet the definition of Type A, B, and C variables.

TS Bases 3.3.2, "Post Accident Monitoring Instrumentation," contains the following bracketed information in the LCO section:

> "[19. Site-specific Variables]"

And the following Reviewer's Note in the LCO section:

> "Site-specific PAM variables will be provided by the COL applicant for site-specific Type A, B, and C parameters that meet the selection criteria in IEEE 497-2002."

Plant Specific Technical Specifications:

The CCNPP Unit 3 Bases 3.3.2, "Post Accident Monitoring Instrumentation," is revised, in the LCO section, to provide plant specific information. To address the bracketed text and Reviewer’s Note in the LCO section, the bracketed text and Reviewer's Note are deleted and replaced with the following:

> "19. Essential Service Water System (ESWS) Cooling Tower Basin Level

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The ESW System is vital for all phases of plant operation and is designed to provide cooling water during normal operation and under accident conditions to ensure safe operation and maintain orderly shutdown of the plant. ESWS Cooling Tower Basin Level is a key parameter used to indicate proper level of cooling water during operation of the Ultimate Heat Sink Makeup System after a DBA event.

There are four ESWS Cooling Tower Basin Levels (1 per UHS train during operation of the UHS Makeup Water System) provided with a range that envelopes 9' to 26'."

Justification:

ESWS Cooling Tower Basin Level is a key parameter used to indicate proper level of cooling water during operation of the Ultimate Heat Sink Makeup Water System after a DBA event. Adding this PAM variable ensures proper instrument calibration frequency.

5 BASES 3.7.19 ULTIMATE HEAT SINK (UHS)

Generic Technical Specifications:

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

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

A related requirement is contained in the LCO section :

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

And the following bracketed requirement in the SR section:

“[The COL applicant to provide a surveillance for makeup water to UHS cooling tower.]”

And the following bracketed requirement in the SR section:

“[The COL applicant to provide a surveillance for makeup water to UHS cooling tower.]”

And the following bracketed information in the SR section:

“[This SR verifies that adequate long term (30 day) cooling can be maintained. The specified emergency makeup flowrate ensures that sufficient NPSH can be maintained to operate the ESW pumps following the first 3 days post LOCA. The Frequency is in accordance with the Inservice Testing Program and is in accordance with the ASME OM Code (Ref. 5). This SR verifies that the UHS emergency makeup flowrate is ≥ 300 gpm.]”

And the following bracketed information in the Reference section:

“[5. ASME Code for Operation and Maintenance of Nuclear Power Plants.]”

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Plant Specific Technical Specifications:

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

> "The Seismic Category I emergency makeup water supply, to the ESWS cooling tower basins, necessary to support 30 days of post accident mitigation is provided by the safety related Ultimate Heat Sink (UHS) Makeup Water System that draws water from the Chesapeake Bay. Chesapeake Bay water enters the UHS Makeup Water Intake Structure through an intake channel shared with the Circulating Water System Makeup Intake Structure. The UHS Makeup Water Intake Structure houses four independent UHS Makeup Water System trains, one for each ESWS division. Each train has one pump, a discharge check valve, and a pump discharge isolation motor operated valve, all housed in the UHS Makeup Water Intake Structure, plus the buried piping running up to and into the ESWS pumphouse at the ESWS cooling tower basin. Each UHS Makeup Water System pump is rated at 750 gpm."

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

> "...with capability for makeup from an OPERABLE source. An OPERABLE emergency makeup water source consists of one OPERABLE train of the UHS Makeup Water System capable of providing makeup water to its associated ESWS cooling tower basin. Each UHS Makeup Water System train includes a pump, valves, piping, instruments and controls to ensure the transfer of the required supply of water from the Chesapeake Bay to its associated ESWS cooling tower basin."

The following bracketed text in the SR section is deleted:

> “[The COL applicant to provide a surveillance for makeup water to UHS cooling tower.]”

The following bracketed text in the SR section is deleted:

> “[The COL applicant to provide a surveillance for makeup water to UHS cooling tower.]”

The following bracketed text in the SR section is revised to delete the brackets and incorporated as stated:

> This SR verifies that adequate long term (30 day) cooling can be maintained. The specified emergency makeup flowrate ensures that sufficient NPSH can be maintained to operate the ESW pumps following the first 3 days post LOCA. The Frequency is in accordance with the Inservice Testing Program and is in accordance with the ASME OM Code (Ref. 5). This SR verifies that the UHS emergency makeup flowrate is ≥ 300 gpm.

And the following bracketed information in the Reference section is revised to delete the brackets and incorporated as stated:

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5. ASME Code for Operation and Maintenance of Nuclear Power Plants

Justification:

The site specific information provided is consistent with the CCNPP Unit 3 FSAR Section 9.2 description of Seismic Category I UHS Makeup Water System and the bracketed text for the makeup water to the UHS cooling tower has been added to LCO section 3.7.19 as shown above.

6 LCO 3.7.22 ULTIMATE HEAT SINK (UHS) MAKEUP WATER SYSTEM

Generic Technical Specifications:

The Generic Technical Specification LCO 3.7.19 Ultimate Heat Sink (UHS) does not describe a Limiting Condition of Operation (LCO) for the UHS Makeup Water System. The Generic Technical Specification 3.7.19 is supplemented by the Plant Specific Technical Specifications 3.7.22 for the UHS Makeup Water System as below.

Plant Specific Technical Specifications:

A new Limiting Condition of Operation (LCO) section is added to the CCNPP Unit 3 TS and Bases Site-Specific Changes for the Ultimate Heat Sink (UHS) Makeup Water System. The following text is added to the CCNPP Unit 3 Technical Specification and Bases:

3.7.22	Ultimate Heat Sink (UHS) Makeup Water System
LCO 3.7.22	Four UHS Makeup Water System trains shall be OPERABLE.
APPLICABILITY:	MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Any UHS Makeup Water System train inoperable.	A.1 Restore UHS Makeup Water System train to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Declare the associated UHS train(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.22.1	Verify the water level of the UHS Makeup Water Pump Forebay is ≥ -11.7 feet NGVD 29.	24 hours
SR 3.7.22.2	Verify each UHS Makeup Water traveling screen rotates and screen wash system provides the necessary design flow rate to wash the screens, coincident with the SR 3.7.19.6 UHS emergency makeup water flow rate to the cooling tower basin, on an actual or simulated actuation signal to verify proper operation to perform their associated safety function.	Quarterly

Justification:

Adding the Site-Specific Limiting Conditions of Operation and surveillance requirements assure that the UHS Makeup Water System can provide the post design basis event safety-related function of supplying makeup water to the UHS cooling tower basin volume to maintain the required Net Positive Suction Head available for proper operation of the Essential Service Water (ESW) pump. In addition, it ensures the makeup water flow to the basin is achieved, coincident with the necessary design screen wash flow rate. The site specific

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information provided is consistent with the CCNPP Unit 3 FSAR Section 9.2.5 description of the UHS Makeup Water System,

7 BASES 3.7.22 ULTIMATE HEAT SINK (UHS) MAKEUP WATER SYSTEM

Generic Technical Specifications:

The Generic Technical Specification Bases 3.7.19 Ultimate Heat Sink (UHS) does not describe the UHS Makeup Water system bases to support the UHS cooling tower basin makeup requirements. The Generic Technical Specification Bases 3.7.19 is supplemented by the Plant Specific Technical Specifications Bases 3.7.22 for the UHS Makeup Water System as below.

Plant Specific Technical Specifications:

The CCNPP Unit 3 Bases 3.7.22, Ultimate Heat Sink (UHS) Makeup Water System is added in the LCO section, to provide plant specific information for the UHS Makeup Water System. The following text is inserted:

B 3.7	Plant Systems
B 3.7.22	Ultimate Heat Sink (UHS) Makeup Water System

BASES

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BACKGROUND	The safety-related UHS Makeup Water System provides emergency makeup water to the UHS cooling tower basin starting 72 hours post design basis event, to replenish losses due to evaporation, blowdown, drift and leakage, to ensure that the level of the cooling tower basin is sufficient to maintain the required net positive suction head (NPSH) of the essential service water (ESW) pumps. The UHS Makeup Water system draws Chesapeake Bay water from the common circulating water system (CWS) and UHS common forebay. Two buried 60" safety-related pipes provide a flow path for Chesapeake Bay water to enter the common forebay. During normal plant operation the UHS Makeup Water System is maintained in a wet layup configuration. Starting 72 hours post design basis event, the UHS Makeup Water System is required to provide up to a minimum of 300 gpm of Chesapeake Bay makeup water to the UHS cooling tower basin. In addition to the makeup water to the basin, the UHS Makeup Water pumps also provide the necessary intermittent design flow rate to the safety-related screen wash system. The safety related functions are covered by this LCO. The UHS Makeup Water system consists of four separate safety-related emergency makeup water trains. Each train consists of a vertical turbine pump, discharge check valve, self-cleaning strainer, and pump discharge isolation MOV. The UHS Makeup Water Intake Structure houses four bar screens and four dual-flow traveling screens that remove large debris and trash that may be entrained in the flow. Each traveling screen is equipped with a screen wash system, which provides a high pressure spray to remove debris from the screens. Instrumentation and controls are provided in the main control room (MCR) and remote shutdown station (RSS). Safety-related components of each of the four UHS Makeup Water System trains are powered by the Class 1E electrical bus for each division and their respective emergency diesel generator (EDG). Additional information about the design and operation of the UHS Makeup Water System is presented in FSAR Subsection 9.2.5 (Ref. 1). The principal safety-related function of the UHS Makeup Water system is to provide makeup water to the UHS cooling tower basin, to maintain the NPSH for the ESW pump starting 72 hours post design basis event up to 30 days, to support the accident mitigation.
APPLICABLE SAFETY ANALYSES	The design basis of the UHS Makeup Water System is for two UHS Makeup Water trains, in conjunction with the associated UHS cooling tower basins, to provide emergency makeup water to the basin, to maintain the NPSH of the ESW pumps 72 hours post design basis event to a minimum of 30 days post design basis event, as discussed in FSAR Subsection 9.2.1 (Ref. 2) and 9.2.5 (Ref. 1).

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	Each UHS Makeup Water system train is sized to provide a maximum of 750 gpm and no less than 300 gpm to the associated UHS cooling tower basin during the post-72 hour design basis event. The UHS Makeup Water pumps are designed to provide the makeup water to the basin, coincident with intermittent screen wash system providing spray water to the traveling screens. The UHS Makeup Water forebay is sized to ensure the UHS Makeup Water pumps NPSH required is available based on the predicted minimum low water level of the Chesapeake Bay of (-7.7) feet NGVD 29, which results in a common forebay minimum level of (-10.2) feet NGVD 29. The minimum water level at the UHS Makeup Water pump bay at (-11.7) feet considers a head loss of 1.5 feet across the traveling screens. The U.S. EPR UHS cooling tower and basin are designed in accordance with Regulatory Guide 1.27 (Ref. 3) to provide a 30 day supply of cooling water in the UHS cooling tower basin. The cooling tower basin is sized considering a 72 hour water storage capacity, with safety-related makeup water provided post 72-hours, to safely shut down and cool down the plant and dissipate the residual heat from a design basis event. For the post 72 hour through the 30 day period, the UHS cooling tower basin is replenished by UHS Makeup Water system, to assure the continuous capability of the UHS cooling tower basin to perform its safety-related function. The UHS Makeup Water System satisfies Criterion 3 of 10 CFR 50.36 (c) (2) (ii).
LCO	The UHS Makeup Water System consists of four trains. Four UHS Makeup Water System trains are required to be OPERABLE, to provide the required redundancy to ensure that the system functions to transfer the required supply of Chesapeake Bay makeup water to its associated UHS cooling tower basin. A UHS Makeup Water System train is OPERABLE when the traveling screens, pump, associated piping, valves and instrumentation and controls required to perform the safety-related function can provide the required Chesapeake Bay makeup water to its associated UHS cooling tower basin, coincident with the screen wash operating at the design flow rate necessary to ensure a clear flow path, and the UHS Makeup Water pump forebay level at greater than or equal to (-11.7) feet NGVD 29.
APPLICABILITY	In MODES 1, 2, 3, and 4, the UHS Makeup Water System is normally in standby mode and required to be OPERABLE to support the UHS system for mitigation of a Design Basis Accident after 72 hours.
ACTIONS	A.1 If any UHS Makeup Water System train is inoperable, action must be taken to restore OPERABLE status within 72 hours. Each OPERABLE UHS train is adequate to perform the cooling function for 72 hours post design basis event. The associated UHS Makeup Water System train is required to maintain that UHS train OPERABLE starting 72 hours post design basis event through 30 days or greater. The 72 hour Completion Time to restore a UHS Makeup Water System train to OPERABLE is reasonable, since its operation is not assumed in the safety analysis to mitigate the consequences of postulated accident or anticipated operational occurrences (AOOs) until 72 hours after the initiating event. This provides a reasonable time for repairs, and the low probability of a postulated accident or AOO occurring during this period. B.1 If a UHS Makeup Water train cannot be restored to OPERABLE status within the Associated Completion Time, the associated UHS train must be declared inoperable immediately. Without the associated UHS Makeup Water System train, the UHS train can only perform its safety function for 72 hours considering the worst case design basis conditions. If multiple UHS Makeup Water System trains are inoperable, the Required Actions for Specification 3.7.19 ensure UHS cooling is restored in the time frame commensurate with safety.
SURVEILLANCE REQUIREMENTS	SR 3.7.22.1

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	This SR verifies that adequate Chesapeake Bay level is available for the UHS Makeup Water pumps to provide emergency makeup water to the UHS cooling tower basin starting 72 hours post design basis event. The specified level also ensures that sufficient NPSH is available to operate the UHS Makeup Water pumps starting 72 hour post design basis event to a minimum of 30 days. The 24 hour frequency is based on operating experience related to trending of the parameter variations during the applicable MODES. SR 3.7.22.2 This SR verifies proper operation of the UHS Makeup Water traveling screens and screen wash system on an actual or simulated actuation signal. The UHS Makeup Water system is normally in standby mode. The screen wash system must provide the necessary design flow rate to properly wash the traveling screens, coincident with the UHS Makeup Water pumps providing greater than or equal to 300 gpm emergency makeup flow rate to the basin. The quarterly Frequency is based on the need to perform this surveillance under the conditions that may impact the flow path to the UHS Makeup Water pumps. The quarterly Frequency is based on operating experience, the redundancy available, and the low probability of significant degradation of the components occurring between surveillances. Therefore, the Frequency is acceptable from a reliability standpoint.
References	1. FSAR Section 9.2.5 2. FSAR Section 9.2.1 3. Regulatory Guide 1.27, Rev. 2, January 1976

Justification

The site specific information provided is consistent with the CCNPP Unit 3 FSAR Section 9.2.5 description of the UHS Makeup Water System. The SR 3.7.22.1 addresses the minimum Chesapeake Bay water level requirement in each UHS Makeup Water System pump forebay, to ensure that emergency makeup water can be provided to the associated UHS cooling tower basin starting 72 hours post design basis event. The SR 3.7.22.2 ensures the UHS Makeup Water traveling screens and screen wash system are functional to provide a clear flow path of Chesapeake Bay water to the UHS Makeup Water pumps.}

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