



Palo Verde Nuclear  
Generating Station

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102-05578-CDM/SAB/RJR  
September 28, 2006

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

Dear Sirs:

**Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Units 1, 2 and 3  
Docket Nos. STN 50-528, 50-529, and 50-530  
Application for Technical Specification Change Regarding Mode  
Change Limitations (LCO 3.0.4 and SR 3.0.4) Using the Consolidated  
Line Item Improvement Process (CLIP), and Application for  
Technical Specification Change to Correct Example 1.4-1**

Pursuant to 10 CFR 50.90, Arizona Public Service Company (APS) hereby requests to amend Operating Licenses NPF-41, NPF-51, and NPF-74 for Palo Verde Nuclear Generating Station (PVNGS) Units 1, 2, and 3, respectively.

The first proposed amendment would modify technical specification (TS) requirements for mode change limitations in Limiting Condition for Operation 3.0.4 and Surveillance Requirement 3.0.4. The proposed amendment request is consistent with NRC-approved Industry/Technical Specification Task Force (TSTF) Traveler number TSTF-359, Revision 9, "Increase Flexibility in Mode Restraints." The availability of this TS improvement was announced in the Federal Register on April 4, 2003 (68 FR 16579), as part of the Consolidated Line Item Improvement Process (CLIP).

The second proposed amendment would correct TS Example 1.4-1, "Surveillance Requirements," to accurately reflect the changes made by TSTF-359 above. The proposed amendment is consistent with TSTF-485, Revision 0 approved by the NRC on December 6, 2005 (Accession no. ML053460302).

Enclosure 1 is the notarized affidavit for both proposed amendments. Enclosures 2 and 3 provide descriptions and assessments of the proposed changes. Enclosure 2 also provides the requested confirmation of applicability, and plant-specific verifications required by the CLIP. Attachment 1 to the Enclosures provides TS pages marked up to

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show the proposed changes. Attachment 2 provides retyped TS pages. Attachment 3 provides a summary of the regulatory commitments made in this submittal. Attachment 4 provides the TS Bases pages marked up to show the proposed changes.

In accordance with the PVNGS Quality Assurance Program, the Plant Review Board and Offsite Safety Review Committee have reviewed and concurred with this proposed amendment. By copy of this letter, this submittal is being forwarded to the Arizona Radiation Regulatory Agency (ARRA) pursuant to 10 CFR 50.91(b)(1).

APS requests approval of the proposed amendment by July 30, 2007, with an implementation period of 120 days after approval. This requested approval date has been administratively selected to accommodate a normal NRC review time, and is not needed for continued plant operation. Associated TS Bases changes are provided in Attachment 4.

Should you have any questions, please contact Thomas N. Weber at (623) 393-5764.

Sincerely,



CDM/SAB/RJR/gt

Enclosures: 1. Notarized Affidavit  
2. APS' Evaluation of Proposed Changes Regarding MODE Change Limitations - LCO 3.0.4 and SR 3.0.4 (TSTF-359, Revision 9)  
3. APS' Evaluation of the Proposed Changes to Correct Example 1.4-1 (TSTF-485, Revision 0)

Attachments: 1. Proposed Technical Specification Changes (mark-up)  
2. Proposed Technical Specification Pages (retyped)  
3. Regulatory Commitments  
4. Changes to TS Bases Pages

cc: B. S. Mallett NRC Region IV Regional Administrator  
M. B. Fields NRC NRR Project Manager  
G. G. Warnick NRC Senior Resident Inspector for PVNGS  
A. V. Godwin Arizona Radiation Regulatory Agency (ARRA)  
T. Morales Arizona Radiation Regulatory Agency (ARRA)

**ENCLOSURE 1  
NOTARIZED AFFIDAVIT**

STATE OF ARIZONA        )  
  ) ss.  
COUNTY OF MARICOPA    )

I, David Mauldin, represent that I am Vice President - Nuclear Engineering, Arizona Public Service Company (APS), that the foregoing document has been signed by me on behalf of APS with full authority to do so, and that to the best of my knowledge and belief, the statements made therein are true and correct.

  
\_\_\_\_\_  
David Mauldin

Sworn To Before Me This 28<sup>th</sup> Day Of September, 2006.



  
\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
Notary Commission Stamp

## **ENCLOSURE 2**

### **Arizona Public Service Company's Evaluation**

**Subject: Proposed Changes Regarding MODE Change Limitations - LCO 3.0.4 and SR 3.0.4 (TSTF-359, Revision 9)**

**1.0 DESCRIPTION**

**2.0 ASSESSMENT**

**2.1 Applicability of Published Safety Evaluation**

**2.2 Optional Changes and Variations**

**3.0 REGULATORY ANALYSIS**

**3.1 No Significant Hazards Consideration Determination**

**3.2 Verification and Commitments**

**4.0 ENVIRONMENTAL EVALUATION**

**Enclosure 2: APS' Evaluation of Proposed Changes Regarding MODE  
Change Limitations - LCO 3.0.4 and SR 3.0.4 (TSTF-359, Rev. 9)**

## **1.0 DESCRIPTION**

The proposed amendment would modify technical specification (TS) requirements for mode change limitations in Limiting Conditions for Operation (LCO) 3.0.4 and Surveillance Requirement (SR) 3.0.4.

The changes are consistent with Nuclear Regulatory Commission (NRC) approved Industry/Technical Specification Task Force (TSTF) STS change TSTF-359, Revision 9, "Increase Flexibility in MODE Restraints." Revision 9 of TSTF-359 reflects Revision 8 of TSTF-359, as modified by the notice in the Federal Register published on April 4, 2003 (68 FR 16579). The Federal Register notice announced the availability of this TS improvement through the Consolidated Line Item Improvement Process (CLIIP). The changes being proposed are listed in Table 1. Deviations from TSTF-359, Revision 9 are listed in Table 2. Attachment 3 provides a summary of the regulatory commitments made in this submittal.

## **2.0 ASSESSMENT**

### **2.1 Applicability of Published Safety Evaluation**

Arizona Public Service Company (APS) has reviewed the safety evaluation dated April 4, 2003, as part of the CLIIP. This review included a review of the NRC staff's evaluation, as well as the supporting information provided in support of TSTF-359, Revision 9. APS has concluded that the justifications presented in the TSTF proposal and the safety evaluation prepared by the NRC staff are applicable to Palo Verde Nuclear Generating Station (PVNGS) Units 1, 2, and 3, and justify this amendment for the incorporation of the changes to the PVNGS TS.

### **2.2 Optional Changes and Variation**

Except for two changes that are not applicable to the PVNGS plant design, as listed in Table 2, APS is not proposing any variations or deviations from the TS changes described in TSTF-359, Revision 9, or the NRC staff's model safety evaluation dated April 4, 2003.

## **3.0 REGULATORY ANALYSIS**

### **3.1 No Significant Hazards Consideration Analysis**

APS has reviewed the proposed no significant hazards consideration determination (NSHCD) published in the Federal Register as part of the CLIIP. APS has concluded that the proposed NSHCD presented in the Federal Register notice is applicable to PVNGS Units 1, 2, and 3 and is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

**Enclosure 2: APS' Evaluation of Proposed Changes Regarding MODE  
Change Limitations - LCO 3.0.4 and SR 3.0.4 (TSTF-359, Rev. 9)**

**3.2 Verification and Commitments**

As discussed in the notice of availability published in the Federal Register on April 4, 2003, for this TS improvement, plant-specific verifications were performed as follows:

APS has established TS Bases for LCO 3.0.4 and SR 3.0.4 which state that use of the TS mode change limitation flexibility established by LCO 3.0.4 and SR 3.0.4 is not to be interpreted as endorsing the failure to exercise the good practice of restoring systems or components to operable status before entering an associated mode or other specified condition in the TS Applicability.

The modification also includes changes to the bases for LCO 3.0.4 and SR 3.0.4 that provide details on how to implement the new requirements. The bases changes provide guidance for changing Modes or other specified conditions in the Applicability when an LCO is not met. The bases changes describe in detail how:

- LCO 3.0.4.a allows entry into a MODE or other specified condition in the Applicability with the LCO not met when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time,
- LCO 3.0.4.b allows entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate, and
- LCO 3.0.4.c allows entry into a MODE or other specified condition in the Applicability with the LCO not met based on a Note in the Specification, which is typically applied to Specifications which describe values and parameters (e.g., Reactor Coolant System Specific Activity), though it may be applied to other Specifications based on NRC plant-specific approval.

The bases also state that any risk impact should be managed through the program in place to implement 10 CFR 50.65(a)(4) and its implementation guidance, NRC Regulatory Guide 1.182. "Assessing and Managing Risks Before Maintenance Activities at Nuclear Power Plants," and that the results of the risk assessment shall be considered in determining the acceptability of entering the MODE or other specified condition in the Applicability, and any corresponding risk management actions. In addition, the bases state that upon entry into a Mode or other specified condition in the Applicability with the LCO not met, LCO 3.0.1 and LCO 3.0.2 require entry into the applicable Conditions and Required Actions for no more than the duration of the applicable Completion Time or until the LCO is met or the unit is not within the Applicability of the TS. The bases also state that SR 3.0.4 does not restrict changing MODES or other specified conditions of the Applicability when a SR has not been

**Enclosure 2: APS' Evaluation of Proposed Changes Regarding MODE  
Change Limitations - LCO 3.0.4 and SR 3.0.4 (TSTF-359, Rev. 9)**

performed within the specified Frequency, provided the requirement to declare the LCO not met has been delayed in accordance with SR 3.0.3.

The PVNGS TS Bases Control Program, TS 5.5.14, is consistent with Section 5.5 of the Standard Technical Specifications (STS). In addition, PVNGS Surveillance Requirement 3.0.1 is the equivalent of STS SR 3.0.1 and associated bases.

**4.0 ENVIRONMENTAL CONSIDERATION**

APS has reviewed the environmental evaluation included in the model safety evaluation dated April 4, 2003, as part of the CLIP. APS has concluded that the staff's findings presented in that evaluation are applicable to PVNGS Units 1, 2, and 3, and the evaluation is hereby incorporated by reference for this application.

**Table 1 – Summary of Changes Being Made**

Affected Technical Specifications	Description of Changes (All changes reflect TSTF-389 unless noted)
1.0 Use and Application	Revised Example 1.4-1 to be consistent with the requirements of SR 3.0.4 as described in TSTF-485, Revision 0.
3.0 Limiting Condition for Operation (LCO) Applicability	Revised LCO 3.0.4 to a Risk Informed evaluation of Mode changes.
3.0 Surveillance Requirement (SR) Applicability	Revised SR 3.0.4 to clarify relationship to LCO 3.0.4
3.3 Instrumentation	Removed Note "LCO 3.0.4 is not applicable" from LCO 3.3.1, "RPS Instrumentation – Operating (Before CPC Upgrade)," Required Action B.1 and Required Action D.
	Removed Note "LCO 3.0.4 is not applicable" from LCO 3.3.1, "RPS Instrumentation – Operating (After CPC Upgrade)," Required Action B.1 and Required Action D.
	Removed Note "LCO 3.0.4 is not applicable" from LCO 3.3.2, "RPS Instrumentation – Shutdown," Required Action B.1 and Required Action D.
	Removed Note "LCO 3.0.4 is not applicable" from LCO 3.3.5, "ESFAS Instrumentation," Required Action B.1 and Required Action D.

**Enclosure 2: APS' Evaluation of Proposed Changes Regarding MODE  
Change Limitations - LCO 3.0.4 and SR 3.0.4 (TSTF-359, Rev. 9)**

**Table 1 – Summary of Changes Being Made**

Affected Technical Specifications	Description of Changes (All changes reflect TSTF-389 unless noted)
3.3 Instrumentation	Removed Note "LCO 3.0.4 is not applicable" from LCO 3.3.7, "DG - LOVS," Required Action B.2.
	Removed Note "LCO 3.0.4 is not applicable" from LCO 3.3.10 (STS 3.3.11), "PAM Instrumentation," Actions.
	Removed Note "LCO 3.0.4 is not applicable" from LCO 3.3.11 (STS 3.3.12), "Remote Shutdown System," Actions.
3.4 Reactor Coolant System (RCS)	Added Note: "LOC 3.0.4.b is not applicable when entering Mode 4" to LCO 3.4.13 (STS 3.4.12), "LTOP System," Actions and removed Note "LCO 3.0.4 is note applicable" from LCO 3.4.13, Required Action A.
	Removed Note "LCO 3.0.4 is not applicable" from LCO 3.4.16 (STS 3.4.15), "RCS Leakage Detection System," Required Action A and Required Action B.
	Revised Note for LCO 3.4.17 (STS 3.4.16), "RCS Specific Activity," Required Action A to read "LCO 3.0.4.c is not applicable."
3.5 Emergency Core Cooling Systems (ECCS)	Added Note "LCO 3.0.4.b is not applicable to ECCS High Pressure Safety Injection Subsystem when entering Mode 4," to LCO 3.5.4 (STS 3.5.3), "ECCS – Shutdown," Actions.
3.6 Containment Systems	Remove Note "LCO 3.0.4 is not applicable," from LCO 3.6.7 (STS 3.6.8), "Hydrogen Recombiners," Required Action A.
3.7 Plant Systems	Remove Note "LCO 3.0.4 is not applicable," from LCO 3.7.4, "ADVs," Required Action A.1.
	Added Note "LCO 3.0.4.b is not applicable," to LCO 3.7.5, "AFW System," Actions.
3.8 Electrical Systems	Added Note "LCO 3.0.4.b is not applicable," to LCO 3.8.1, "AC Sources – Operating," Actions.

**Enclosure 2: APS' Evaluation of Proposed Changes Regarding MODE  
Change Limitations - LCO 3.0.4 and SR 3.0.4 (TSTF-359, Rev. 9)**

**Table 2 – Summary of Changes not Being Made  
Required for Consistency with TSTF-359**

TSTF Mark-up	Resolution
STS 3.4.11, "Pressurizer Power Operated Relief Valves (PORVs)," Action A.1	The Palo Verde units do not have PORVs
STS 3.6.9, "Hydrogen Mixing System (HMS)," Action 3.6.9.A and Bases	The Palo Verde units do not have a HMS

## **ENCLOSURE 3**

### **Arizona Public Service Company's Evaluation**

**Subject: Evaluation of the Proposed Changes to Correct Example 1.4-1 (TSTF-485, Revision 0)**

- 1.0 DESCRIPTION
- 2.0 PROPOSED CHANGE
- 3.0 TECHNICAL ANALYSIS
- 4.0 REGULATORY ANALYSIS
  - 4.1 No Significant Hazards Consideration Determination
  - 4.2 Applicable Regulatory Requirements/Criteria
- 5.0 ENVIRONMENTAL EVALUATION

## **BACKGROUND**

In Enclosure 2 of this submittal, Arizona Public Service Company (APS) is proposing to adopt NRC approved Industry/Technical Specification Task Force (TSTF) change TSTF-359, Revision 9, "Increase Flexibility in MODE Restraints." The proposed TSTF-359 changes to SR 3.0.4 would make certain statements in Example 1.4-1 incorrect. The changes proposed in TSTF-485, Revision 0 would revise the example to be consistent with the proposed TSTF-359 changes.

### **1.0 DESCRIPTION**

Section 1.4, Frequency, Example 1.4-1, is revised to be consistent with the requirements of SR 3.0.4. SR 3.0.4 was revised by TSTF-359, Revision 9, and the current example is not consistent with the Technical Specification requirements.

### **2.0 PROPOSED CHANGE**

The second paragraph of Example 1.4-1 is revised. The paragraph states:

*If the interval as specified by SR 3.0.2 is exceeded while the unit is not in a MODE or other specified condition in the Applicability of the LCO for which performance of the SR is required, the Surveillance must be performed within the Frequency requirements of SR 3.0.2 prior to entry into the MODE or other specified condition. Failure to do so would result in a violation of SR 3.0.4.*

The second paragraph of Example 1.4-1 is being revised to state:

*If the interval as specified by SR 3.0.2 is exceeded while the unit is not in a MODE or other specified condition in the Applicability of the LCO for which performance of the SR is required, then SR 3.0.4 becomes applicable. The Surveillance must be performed within the Frequency requirements of SR 3.0.2, as modified by SR 3.0.3, prior to entry into the MODE or other specified condition or the LCO is considered not met (in accordance with SR 3.0.1) and LCO 3.0.4 becomes applicable.*

### **3.0 TECHNICAL ANALYSIS**

Example 1.4-1 states that if the interval as specified by SR 3.0.2 is exceeded while the unit is not in a MODE or other specified condition in the Applicability of the LCO for which performance of the SR is required, the Surveillance must be performed within the Frequency requirements of SR 3.0.2 prior to entry into the MODE or other specified condition. Failure to do so would result in a violation of SR 3.0.4.

SR 3.0.4 states that entry into a MODE or other specified condition in the Applicability of an LCO shall only be made when the LCO's Surveillances have been met within their specified Frequency. TSTF-359 modified SR 3.0.4 to state that when an LCO is not

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Correct Example 1.4-1 (TSTF-485, Revision 0)**

met due to Surveillances not having been met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with LCO 3.0.4. TSTF-359 modified LCO 3.0.4 to provide conditions under which it is acceptable to enter the Applicability of the LCO with the LCO not met. Therefore, it is possible to enter the MODE or other specified condition in the Applicability of an LCO with a Surveillance not performed within the Frequency requirements of SR 3.0.2 and this does not result in a violation of SR 3.0.4.

The Example 1.4-1, second paragraph discussion is modified to parallel the discussion in the previous paragraph. The previous paragraph discusses Surveillances that exceed the interval without being performed while in the Applicability. The second paragraph is modified to make a similar statement regarding Surveillances that exceed the interval while not being in the Applicability.

The second sentence of the second paragraph is modified to reference the provisions of SR 3.0.3. This is necessary as TSTF-359 modified SR 3.0.4 to recognize that performance of a missed Surveillance may have been extended and prior to performance of the missed Surveillance, but within the time permitted under SR 3.0.3, a MODE change occurs.

The statement that failure to perform a surveillance prior to entering the Applicability would constitute a violation of SR 3.0.4 is deleted and a statement is inserted to state the LCO would not be met and LCO 3.0.4 becomes applicable. This is consistent with the revised SR 3.0.4.

## **4.0 REGULATORY ANALYSIS**

### **4.1 No Significant Hazards Consideration Determination**

The TSTF has evaluated whether or not a significant hazards consideration is involved with the proposed generic change by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed change revises Section 1.4, Frequency, "Example 1.4-1," to be consistent with Surveillance Requirement (SR) 3.0.4 and Limiting Condition for Operation (LCO) 3.0.4. This change is considered administrative in that it modifies the example to demonstrate the proper application of SR 3.0.4 and LCO 3.0.4. The requirements of SR 3.0.4 and LCO 3.0.4 are clear and are clearly explained in the associated Bases. As a result, modifying the example will not result in a change in usage of the Technical Specifications (TS). The proposed change does not adversely affect accident initiators or precursors,

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Correct Example 1.4-1 (TSTF-485, Revision 0)**

the ability of structures, systems, and components (SSCs) to perform their intended function to mitigate the consequences of an initiating event within the assumed acceptance limits, or radiological release assumptions used in evaluating the radiological consequences of an accident previously evaluated. Therefore, this change is considered administrative and will have no effect on the probability or consequences of any accident previously evaluated.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

No new or different accidents result from utilizing the proposed change. The change does not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. In addition, the change does not impose any new or different requirements or eliminate any existing requirements. The change does not alter assumptions made in the safety analysis. The proposed change is consistent with the safety analysis assumptions and current plant operating practice.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

The proposed change is administrative and will have no effect on the application of the Technical Specification requirements. Therefore, the margin of safety provided by the Technical Specification requirements is unchanged.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

#### **4.2 Applicable Regulatory Requirements/Criteria**

This change is administrative and will have no effect on any regulatory requirements or criteria.

**Enclosure 3: APS' Evaluation of the Proposed Changes to  
Correct Example 1.4-1 (TSTF-485, Revision 0)**

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the approval of the proposed change will not be inimical to the common defense and security or to the health and safety of the public.

## **5.0 ENVIRONMENTAL EVALUATION**

A review has determined that the proposed change would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed change.

## **Attachment 1**

### **Proposed Technical Specification Changes (mark-up)**

#### **Pages:**

**1.4-2**

**3.0-1 (and Insert)**

**3.0-2**

**3.0-5**

**3.3.1-1**

**3.3.1-2**

**3.3.1-11**

**3.3.1-12**

**3.3.2-1**

**3.3.2-2**

**3.3.5-1**

**3.3.5-2**

**3.3.7-2**

**3.3.10-1**

**3.3.11-1**

**3.4.13-1**

**3.4.16-1**

**3.4.16-2**

**3.4.17-1**

**3.5.4-1**

**3.6.7-1**

**3.7.4-1**

**3.7.5-1**

**3.8.1-1**

1.4 Frequency

EXAMPLES  
(continued)

EXAMPLE 1.4-1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Perform CHANNEL CHECK.	12 hours

Example 1.4-1 contains the type of SR most often encountered in the Technical Specifications (TS). The Frequency specifies an interval (12 hours) during which the associated Surveillance must be performed at least one time. Performance of the Surveillance initiates the subsequent interval. Although the Frequency is stated as 12 hours, an extension of the time interval to 1.25 times the stated Frequency is allowed by SR 3.0.2 for operational flexibility. The measurement of this interval continues at all times, even when the SR is not required to be met per SR 3.0.1 (such as when the equipment is inoperable, a variable is outside specified limits, or the unit is outside the Applicability of the LCO). If the interval specified by SR 3.0.2 is exceeded while the unit is in a MODE or other specified condition in the Applicability of the LCO, and the performance of the Surveillance is not otherwise modified (refer to Example 1.4-3), then SR 3.0.3 becomes applicable.

If the interval as specified by SR 3.0.2 is exceeded while the unit is not in a MODE or other specified condition in the Applicability of the LCO for which performance of the SR is required, ~~the~~ Surveillance must be performed within the Frequency requirements of SR 3.0.2 prior to entry into the MODE or other specified condition. ~~Failure to do so would result in a violation of SR 3.0.4.~~

then SR 3.0.4 becomes applicable. The

as modified by SR 3.0.3,

or the LCO is considered not met (in accordance with SR 3.0.1) and LCO 3.0.4 becomes applicable.

(continued)



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3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

LCO 3.0.1 LCOs shall be met during the MODES or other specified conditions in the Applicability, except as provided in LCO 3.0.2 and LCO 3.0.7.

LCO 3.0.2 Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6.

If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated.

LCO 3.0.3 When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable. Action shall be initiated within 1 hour to place the unit, as applicable, in:

- a. MODE 3 within 7 hours;
- b. MODE 5 within 37 hours.

Exceptions to this Specification are stated in the individual Specifications.

Where corrective measures are completed that permit operation in accordance with the LCO or ACTIONS, completion of the actions required by LCO 3.0.3 is not required.

LCO 3.0.3 is only applicable in MODES 1, 2, 3, and 4.

LCO 3.0.4

When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall not be made except when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time.

Insert TSTF-359R9 insert 1 (LCO 3.04) here

(continued)

When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:

- a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;
- b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or
- c. When an allowance is stated in the individual value, parameter, or other Specification.

This specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of a unit.

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3.0 LCO APPLICABILITY

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LCO 3.0.4  
(continued)

This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

Exceptions to this Specification are stated in the individual Specifications.

LCO 3.0.4 is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4.

LCO 3.0.5

Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

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LCO 3.0.6

When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, an evaluation shall be performed in accordance with Specification 5.5.15, "Safety Function Determination Program (SFDP)." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

(continued)

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LDCR 04-7004 3/04

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3.0 SR APPLICABILITY

SR 3.0.3 (continued) When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

SR 3.0.4 Entry into a MODE or other specified condition in the Applicability of an LCO shall ~~not~~ be made ~~unless~~ <sup>only when</sup> the LCO's Surveillances have been met within their specified Frequency. This provision shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

SR 3.0.4 is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4.

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insert 2 (SR3.0.4)

except as provided by SR 3.0.3. When an LCO is not met due to Surveillances not having been met, entry into a MODE or other specified Condition in the Applicability shall only be made in accordance with LCO 3.0.4.

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3.3 INSTRUMENTATION

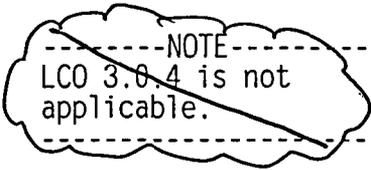
3.3.1 Reactor Protective System (RPS) Instrumentation – Operating

LCO 3.3.1 Four RPS trip and bypass removal channels for each Function in Table 3.3.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1-1. (Before CPC Upgrade)

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each RPS Function.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one automatic RPS trip channel inoperable.	A.1 Place channel in bypass or trip.  <u>AND</u> A.2 Restore channel to OPERABLE status.	1 hour  Prior to entering MODE 2 following next MODE 5 entry
B. One or more Functions with two automatic RPS trip channels inoperable.	B.1   Place one channel in bypass and the other in trip.	1 hour

(continued)

  
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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. One or more Functions with one automatic bypass removal channel inoperable.</p>	<p>C.1 Disable bypass channel.</p> <p><u>OR</u></p> <p>C.2.1 Place affected automatic trip channel in bypass or trip.</p> <p><u>AND</u></p> <p>C.2.2 Restore bypass removal channel and associated automatic trip channel to OPERABLE status.</p>	<p>1 hour</p> <p>1 hour</p> <p>Prior to entering MODE 2 following next MODE 5 entry</p>
<p>D. One or more Functions with two automatic bypass removal channels inoperable.</p>	<p><del>NOTE</del> LCO 3.0.4 is not applicable.</p> <p>D.1 Disable bypass channels.</p> <p><u>OR</u></p> <p>D.2 Place one affected automatic trip channel in bypass and place the other in trip.</p>	<p>1 hour</p> <p>1 hour</p>
<p>E. One or more core protection calculator (CPC) channels with a cabinet high temperature alarm.</p>	<p>E.1 Perform CHANNEL FUNCTIONAL TEST on affected CPC.</p>	<p>12 hours</p>

(continued)



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3.3 INSTRUMENTATION

3.3.1 Reactor Protective System (RPS) Instrumentation – Operating

LCO 3.3.1 Four RPS trip and bypass removal channels for each Function in Table 3.3.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1-1. (After CPC Upgrade)

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each RPS Function.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one automatic RPS trip channel inoperable.	A.1 Place channel in bypass or trip.  <u>AND</u> A.2 Restore channel to OPERABLE status.	1 hour  Prior to entering MODE 2 following next MODE 5 entry
B. One or more Functions with two automatic RPS trip channels inoperable.	B.1  Place one channel in bypass and the other in trip.	1 hour

(continued)

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RPS Instrumentation – Operating (After CPC Upgrade)  
3.3.1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. One or more Functions with one automatic bypass removal channel inoperable.</p>	<p>C.1 Disable bypass channel.</p> <p><u>OR</u></p> <p>C.2.1 Place affected automatic trip channel in bypass or trip.</p> <p><u>AND</u></p> <p>C.2.2 Restore bypass removal channel and associated automatic trip channel to OPERABLE status.</p>	<p>1 hour</p> <p>1 hour</p> <p>Prior to entering MODE 2 following next MODE 5 entry</p>
<p>D. One or more Functions with two automatic bypass removal channels inoperable.</p>	<p><del>NOTE</del> LCO 3.0.4 is not applicable.</p> <p>D.1 Disable bypass channels.</p> <p><u>OR</u></p> <p>D.2 Place one affected automatic trip channel in bypass and place the other in trip.</p>	<p>1 hour</p> <p>1 hour</p>
<p>E. Required Action and associated Completion Time not met.</p>	<p>E.1 Be in MODE 3</p>	<p>6 hours</p>

(continued)

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3.3 INSTRUMENTATION

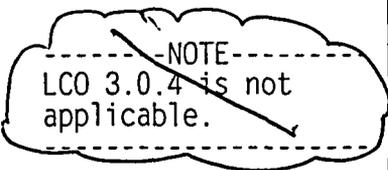
3.3.2 Reactor Protective System (RPS) Instrumentation - Shutdown

LCO 3.3.2 Four RPS trip and bypass removal channels for each Function in Table 3.3.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.2-1.

ACTIONS

-----NOTE-----  
Separate condition entry is allowed for each RPS Function.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more functions with one automatic RPS trip channel inoperable.	A.1 Place channel in bypass or trip. <u>AND</u> A.2 Restore channel to OPERABLE status.	1 hour  Prior to entering MODE 2 following next MODE 5 entry
B. One or more functions with two automatic RPS trip channels inoperable.	B.1  Place one channel in bypass and place the other in trip.	1 hour

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more functions with one automatic bypass removal channel inoperable.	C.1 Disable bypass channel. <u>OR</u> C.2.1 Place affected channel in bypass or trip.  <u>AND</u> C.2.2 Restore bypass removal channel and associated automatic trip channel to OPERABLE status.	1 hour       1 hour    Prior to entering MODE 2 following next MODE 5 entry
D. One or more functions with two automatic bypass removal channels inoperable.	<div style="border: 1px solid black; border-radius: 50%; padding: 5px; text-align: center;"> <p>NOTE LCO 3.0.4 is not applicable.</p> </div> D.1 Disable bypass channels.  <u>OR</u> D.2 Place one affected automatic trip channel bypass and place the other in trip.	       1 hour    1 hour
E. Required Action and associated Completion Time not met.	E.1 Open all RTCBs.	1 hour

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3.3 INSTRUMENTATION

3.3.5 Engineered Safety Features Actuation System (ESFAS) Instrumentation

LCO 3.3.5 Four ESFAS trip and bypass removal channels for each Function in Table 3.3.5-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.5-1.

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each ESFAS Function.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one automatic ESFAS trip channel inoperable.	A.1 Place channel in bypass or trip.  <u>AND</u> A.2 Restore channel to OPERABLE status.	1 hour  Prior to entering MODE 2 following next MODE 5 entry
B. One or more Functions with two automatic ESFAS trip channels inoperable.	B.1 <div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;">-----NOTE----- LCO 3.0.4 is not applicable.</div>  Place one channel in bypass and the other in trip.	1 hour

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. One or more Functions with one automatic bypass removal channel inoperable.</p>	<p>C.1 Disable bypass channel.</p> <p><u>OR</u></p> <p>C.2.1 Place affected automatic trip channel in bypass or trip.</p> <p><u>AND</u></p> <p>C.2.2 Restore bypass removal channel and associated automatic trip channel to OPERABLE status.</p>	<p>1 hour</p> <p>1 hour</p> <p>Prior to entering MODE 2 following next MODE 5 entry</p>
<p>D. One or more Functions with two automatic bypass removal channels inoperable.</p>	<p><u>NOTE</u> LCO 3.0.4 is not applicable.</p> <p>D.1 Disable bypass channels.</p> <p><u>OR</u></p> <p>D.2 Place one affected automatic trip channel in bypass and place the other in trip.</p>	<p>1 hour</p> <p>1 hour</p>
<p>E. Required Action and associated Completion Time not met.</p>	<p>E.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>E.2 Be in MODE 4.</p>	<p>6 hours</p> <p>12 hours</p>

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3.3 INSTRUMENTATION

3.3.10 Post Accident Monitoring (PAM) Instrumentation

LCO 3.3.10 The PAM instrumentation for each Function in Table 3.3.10-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

- NOTES
1. LCO 3.0.4 not applicable.
  2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.6.	Immediately
C. -----NOTE----- Not applicable to hydrogen monitor channels. ----- One or more Functions with two required channels inoperable.	C.1 Restore one channel to OPERABLE status.	7 days

(continued)

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3.3 INSTRUMENTATION

3.3.11 Remote Shutdown System

LCO 3.3.11 The Remote Shutdown System Instrumentation Functions in Table 3.3.11-1 and each Remote Shutdown System disconnect switch and control circuit shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

- NOTES-----
1. LCO 3.0.4 is not applicable.
  2. Separate Condition entry is allowed for each Function.
- 

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required Functions in Table 3.3.11.1 inoperable.	A.1 Restore required Functions to OPERABLE status.	30 days
B. One or more remote shutdown system disconnect switches or control circuits inoperable.	B.1 Restore required switch(s)/circuit(s) to OPERABLE status	30 days
	<u>OR</u> B.2 Issue procedure changes that identify alternate disconnect methods or control circuits	30 days
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u> C.2 Be in MODE 4.	12 hours

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3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.13 Low Temperature Overpressure Protection (LTOP) System

LCO 3.4.13 An LTOP System shall be OPERABLE consisting of:

- a. Two OPERABLE Shutdown Cooling System suction line relief valves with lift settings  $\leq 467$  psig aligned to provide overpressure protection for the RCS; or
- b. The RCS depressurized and an RCS vent of  $\geq 16$  square inches.

-----NOTE-----  
No RCP shall be started unless the secondary side water temperature in each steam generator (SG) is  $\leq 100^\circ\text{F}$  above each of the RCS cold leg temperatures.  
-----

APPLICABILITY: MODE 4 when any RCS cold leg temperature is  $\leq 214^\circ\text{F}$  during cooldown,  
MODE 4 when any RCS cold leg temperature is  $\leq 291^\circ\text{F}$  during heatup,  
MODE 5,  
MODE 6 when the reactor vessel head is on.

-----NOTE-----  
1. When one or more cold legs reach  $214^\circ\text{F}$ , this LCO remains applicable during periods of steady state temperature conditions until all RCS cold leg temperature reach  $291^\circ\text{F}$ . If a cooldown is terminated prior to reaching  $214^\circ\text{F}$  and a heatup is commenced, this LCO is applicable until all RCS cold leg temperatures reach  $291^\circ\text{F}$ .

2. LCO 3.0.4.b is not applicable when entering MODE 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required Shutdown Cooling System suction line relief valve inoperable in MODE 4.	<p>-----NOTE----- LCO 3.0.4 is not applicable</p> <p>A.1 Restore required Shutdown Cooling System suction line relief valve to OPERABLE status.</p>	7 days

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RCS Leakage Detection Instrumentation  
3.4.16

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.16 RCS Leakage Detection Instrumentation

LCO 3.4.16 Both of the following RCS leakage detection instrumentation shall be OPERABLE:

- a. One containment sump monitor; and
- b. One containment atmosphere radioactivity monitor (gaseous and particulate).

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required containment sump monitor inoperable.	<p style="text-align: center;">NOTE ----- LCO 3.0.4 is not applicable. -----</p> <p>A.1 Perform SR 3.4.14.1.</p> <p><u>AND</u></p> <p>A.2 Restore containment sump monitor to OPERABLE status.</p>	<p>Once per 24 hours</p> <p>30 days</p>

(continued)

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RCS Leakage Detection Instrumentation  
3.4.16

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required containment atmosphere radioactivity monitor inoperable.	<p style="text-align: center;">-NOTE-</p> <p style="text-align: center;">LCO 3.0.4 is not applicable.</p>	
	B.1.1 Analyze grab samples of the containment atmosphere.	Once per 24 hours
	<u>OR</u>	
	B.1.2 Perform SR 3.4.14.1.	Once per 24 hours
	<u>AND</u>	
	B.2 Restore required containment atmosphere radioactivity monitor to OPERABLE status.	30 days
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	C.2 Be in MODE 5.	36 hours
D. All required monitors inoperable.	D.1 Enter LCO 3.0.3	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.16.1 Perform CHANNEL CHECK of the required containment atmosphere radioactivity monitor.	12 hours
SR 3.4.16.2 Perform CHANNEL FUNCTIONAL TEST of the required containment atmosphere radioactivity monitor.	92 days

(continued)

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3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.17 RCS Specific Activity

LCO 3.4.17 The specific activity of the reactor coolant shall be within limits.

APPLICABILITY: MODES 1 and 2,  
MODE 3 with RCS cold leg temperature ( $T_{cold}$ )  $\geq$  500°F.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. DOSE EQUIVALENT I-131 > 1.0 $\mu$ Ci/gm.	<p style="text-align: center;">-----NOTE----- LCO 3.0.4 is not applicable.</p> <p>A.1 Verify DOSE EQUIVALENT I-131 within the acceptable region of Figure 3.4.17-1.</p> <p><u>AND</u></p> <p>A.2 Restore DOSE EQUIVALENT I-131 to within limit.</p>	<p>Once per 4 hours</p> <p>48 hours</p>

(continued)

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.4 ECCS - Shutdown

LCO 3.5.4 One High Pressure Safety Injection (HPSI) train shall be OPERABLE.

APPLICABILITY: MODE 3 with pressurizer pressure < 1837 psia and with RCS T<sub>c</sub> < 485°F.

~~MODE 4.~~ **NOTE** LCO 3.0.4.b is not applicable to ECCS High Pressure Safety Injection Subsystem when entering MODE 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required HPSI train inoperable.	A.1 Restore required HPSI train to OPERABLE status.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 5.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.5.4.1 The following SRs are applicable: SR 3.5.3.1 SR 3.5.3.2 SR 3.5.3.3 SR 3.5.3.4 SR 3.5.3.5 SR 3.5.3.7 SR 3.5.3.8	In accordance with applicable SRs

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Hydrogen Recombiners  
3.6.7

3.6 CONTAINMENT SYSTEMS

3.6.7 Hydrogen Recombiners

LCO 3.6.7 Two hydrogen recombiners shared among the three units shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

-----NOTE-----

All three PVNGS Units (Units 1, 2, and 3) shall simultaneously comply with the REQUIRED ACTION(s) when the shared portion of the hydrogen recombiner(s) is the cause of a CONDITION.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One hydrogen recombiner inoperable.	<p style="text-align: center;">-----NOTE----- LCO 3.0.4 is not applicable.</p> <p>A.1 Restore hydrogen recombiner to OPERABLE status.</p>	30 days
B. Two hydrogen recombiners inoperable.	<p>B.1 Verify by administrative means that the hydrogen control function is maintained.</p> <p><u>AND</u></p> <p>B.2 Restore one hydrogen recombiner to OPERABLE status.</p>	<p>1 hour</p> <p><u>AND</u></p> <p>Every 12 hours thereafter</p> <p>7 days</p>
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours

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ADVs  
3.7.4

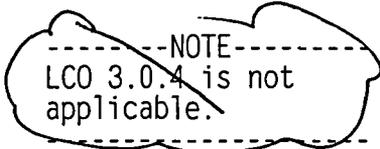
3.7 PLANT SYSTEMS

3.7.4 Atmospheric Dump Valves (ADVs)

LCO 3.7.4 One ADV line per steam generator shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,  
MODE 4 when steam generator is being relied upon for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required ADV line inoperable.	A.1  Restore ADV line to OPERABLE status.	72 hours
B. Two required ADV lines inoperable.	B.1 Restore one ADV line to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u> C.2 Be in MODE 4 without reliance on steam generator for heat removal.	24 hours

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3.7 PLANT SYSTEMS

3.7.5 Auxiliary Feedwater (AFW) System

LCO 3.7.5 Three AFW trains shall be OPERABLE.

-----NOTE-----  
Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4.  
-----

APPLICABILITY: MODES 1, 2, and 3,  
MODE 4 when steam generator is relied upon for heat removal.

NOTE  
LCO 3.0.4.b is not applicable

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One steam supply to turbine driven AFW pump inoperable.</p> <p><u>OR</u></p> <p>-----NOTE----- Only applicable if MODE 2 has not been entered following refueling.</p> <p>----- One turbine driven AFW pump inoperable in MODE 3 following refueling.</p>	<p>A.1 Restore affected equipment to OPERABLE status.</p>	<p>7 days</p> <p><u>AND</u></p> <p>10 days from discovery of failure to meet the LCO</p>
<p>B. One AFW train inoperable for reasons other than Condition A in MODE 1, 2, or 3.</p>	<p>B.1 Restore AFW train to OPERABLE status.</p>	<p>72 hours</p> <p><u>AND</u></p> <p>10 days from discovery of failure to meet the LCO</p>

(continued)

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3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources - Operating

LCO 3.8.1 The following AC electrical sources shall be OPERABLE:

- a. Two circuits between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System;
- b. Two diesel generators (DGs) each capable of supplying one train of the onsite Class 1E AC Electrical Power Distribution System; and
- c. Automatic load sequencers for Train A and Train B.

APPLICABILITY: MODES 1, 2, 3, and 4.

*NOTE: LCO 3.0.4b is not applicable to DGs*

ACTIONS	CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required offsite circuit inoperable.	<p>A.1</p> <p><u>AND</u></p> <p>A.2</p> <p><u>AND</u></p>	<p>Perform SR 3.8.1.1 for required OPERABLE offsite circuit.</p> <p>Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.</p>	<p>1 hour</p> <p><u>AND</u></p> <p>Once per 8 hours thereafter.</p> <p>24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s)</p> <p>(continued)</p>

## Attachment 2

### Proposed Technical Specification Changes (Re-typed))

**Pages:**

**1.4-2**

**3.0-1**

**3.0-2**

**3.0-5**

**3.3.1-1**

**3.3.1-2**

**3.3.1-11**

**3.3.1-12**

**3.3.2-1**

**3.3.2-2**

**3.3.5-1**

**3.3.5-2**

**3.3.7-2**

**3.3.10-1**

**3.3.11-1**

**3.4.13-1**

**3.4.16-1**

**3.4.16-2**

**3.4.17-1**

**3.5.4-1**

**3.6.7-1**

**3.7.4-1**

**3.7.5-1**

**3.8.1-1**

1.4 Frequency

EXAMPLES  
(continued)

EXAMPLE 1.4-1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Perform CHANNEL CHECK.	12 hours

Example 1.4-1 contains the type of SR most often encountered in the Technical Specifications (TS). The Frequency specifies an interval (12 hours) during which the associated Surveillance must be performed at least one time. Performance of the Surveillance initiates the subsequent interval. Although the Frequency is stated as 12 hours, an extension of the time interval to 1.25 times the stated Frequency is allowed by SR 3.0.2 for operational flexibility. The measurement of this interval continues at all times, even when the SR is not required to be met per SR 3.0.1 (such as when the equipment is inoperable, a variable is outside specified limits, or the unit is outside the Applicability of the LCO). If the interval specified by SR 3.0.2 is exceeded while the unit is in a MODE or other specified condition in the Applicability of the LCO, and the performance of the Surveillance is not otherwise modified (refer to Example 1.4-3), then SR 3.0.3 becomes applicable.

If the interval as specified by SR 3.0.2 is exceeded while the unit is not in a MODE or other specified condition in the Applicability of the LCO for which performance of the SR is required, then SR 3.0.4 becomes applicable. The Surveillance must be performed within the Frequency requirements of SR 3.0.2 prior to entry into the MODE or other specified condition, as modified by SR 3.0.3, or the LCO is considered not met (in accordance with SR 3.0.1) and LCO 3.0.4 becomes applicable.

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3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

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LCO 3.0.1 LCOs shall be met during the MODES or other specified conditions in the Applicability, except as provided in LCO 3.0.2 and LCO 3.0.7.

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LCO 3.0.2 Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6.

If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated.

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LCO 3.0.3 When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable. Action shall be initiated within 1 hour to place the unit, as applicable, in:

- a. MODE 3 within 7 hours;
- b. MODE 5 within 37 hours.

Exceptions to this Specification are stated in the individual Specifications.

Where corrective measures are completed that permit operation in accordance with the LCO or ACTIONS, completion of the actions required by LCO 3.0.3 is not required.

LCO 3.0.3 is only applicable in MODES 1, 2, 3, and 4.

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LCO 3.0.4 When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:

- a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;

(continued)

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3.0 LCO APPLICABILITY

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LCO 3.0.4  
(continued)

- b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this Specification are stated in the individual Specifications, or
- c. When an allowance is stated in the individual valve, parameter, or other Specification.

This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

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LCO 3.0.5

Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

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LCO 3.0.6

When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, an evaluation shall be performed in accordance with Specification 5.5.15, "Safety Function Determination Program (SFDP)." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

(continued)

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### 3.0 SR APPLICABILITY

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SR 3.0.3 (continued) When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

---

SR 3.0.4 Entry into a MODE or other specified condition in the Applicability of an LCO shall only be made when the LCO's Surveillances have been met within their specified Frequency, except as provided by SR 3.0.3. When an LCO is not met due to Surveillances not having been met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with LCO 3.0.4. This provision shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

---

---

3.3 INSTRUMENTATION

3.3.1 Reactor Protective System (RPS) Instrumentation – Operating

LCO 3.3.1 Four RPS trip and bypass removal channels for each Function in Table 3.3.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1-1. (Before CPC Upgrade)

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each RPS Function.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one automatic RPS trip channel inoperable.	A.1 Place channel in bypass or trip.  <u>AND</u> A.2 Restore channel to OPERABLE status.	1 hour  Prior to entering MODE 2 following next MODE 5 entry
B. One or more Functions with two automatic RPS trip channels inoperable.	B.1 Place one channel in bypass and the other in trip.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. One or more Functions with one automatic bypass removal channel inoperable.</p>	<p>C.1 Disable bypass channel.</p> <p><u>OR</u></p> <p>C.2.1 Place affected automatic trip channel in bypass or trip.</p> <p><u>AND</u></p> <p>C.2.2 Restore bypass removal channel and associated automatic trip channel to OPERABLE status.</p>	<p>1 hour</p> <p>1 hour</p> <p>Prior to entering MODE 2 following next MODE 5 entry</p>
<p>D. One or more Functions with two automatic bypass removal channels inoperable.</p>	<p>D.1 Disable bypass channels.</p> <p><u>OR</u></p> <p>D.2 Place one affected automatic trip channel in bypass and place the other in trip.</p>	<p>1 hour</p> <p>1 hour</p>
<p>E. One or more core protection calculator (CPC) channels with a cabinet high temperature alarm.</p>	<p>E.1 Perform CHANNEL FUNCTIONAL TEST on affected CPC.</p>	<p>12 hours</p>

(continued)

3.3 INSTRUMENTATION

3.3.1 Reactor Protective System (RPS) Instrumentation – Operating

LCO 3.3.1 Four RPS trip and bypass removal channels for each Function in Table 3.3.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1-1. (After CPC Upgrade)

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each RPS Function.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one automatic RPS trip channel inoperable.	A.1 Place channel in bypass or trip.	1 hour
	<u>AND</u> A.2 Restore channel to OPERABLE status.	Prior to entering MODE 2 following next MODE 5 entry
B. One or more Functions with two automatic RPS trip channels inoperable.	B.1 Place one channel in bypass and the other in trip.	1 hour

(continued)



3.3 INSTRUMENTATION

3.3.2 Reactor Protective System (RPS) Instrumentation – Shutdown

LCO 3.3.2 Four RPS trip and bypass removal channels for each Function in Table 3.3.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.2-1.

ACTIONS

-----NOTE-----  
Separate condition entry is allowed for each RPS Function.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more functions with one automatic RPS trip channel inoperable.	A.1 Place channel in bypass or trip.	1 hour
	<u>AND</u> A.2 Restore channel to OPERABLE status.	Prior to entering MODE 2 following next MODE 5 entry
B. One or more functions with two automatic RPS trip channels inoperable.	B.1 Place one channel in bypass and place the other in trip.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. One or more functions with one automatic bypass removal channel inoperable.</p>	<p>C.1 Disable bypass channel.</p> <p><u>OR</u></p> <p>C.2.1 Place affected channel in bypass or trip.</p> <p><u>AND</u></p> <p>C.2.2 Restore bypass removal channel and associated automatic trip channel to OPERABLE status.</p>	<p>1 hour</p> <p>1 hour</p> <p>Prior to entering MODE 2 following next MODE 5 entry</p>
<p>D. One or more functions with two automatic bypass removal channels inoperable.</p>	<p>D.1 Disable bypass channels.</p> <p><u>OR</u></p> <p>D.2 Place one affected automatic trip channel bypass and place the other in trip.</p>	<p>1 hour</p> <p>1 hour</p>
<p>E. Required Action and associated Completion Time not met.</p>	<p>E.1 Open all RTCBs.</p>	<p>1 hour</p>

3.3 INSTRUMENTATION

3.3.5 Engineered Safety Features Actuation System (ESFAS) Instrumentation

LCO 3.3.5 Four ESFAS trip and bypass removal channels for each Function in Table 3.3.5-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.5-1.

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each ESFAS Function.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one automatic ESFAS trip channel inoperable.	A.1 Place channel in bypass or trip.	1 hour
	<u>AND</u> A.2 Restore channel to OPERABLE status.	Prior to entering MODE 2 following next MODE 5 entry
B. One or more Functions with two automatic ESFAS trip channels inoperable.	B.1 Place one channel in bypass and the other in trip.	1 hour

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. One or more Functions with one automatic bypass removal channel inoperable.</p>	<p>C.1 Disable bypass channel. <u>OR</u> C.2.1 Place affected automatic trip channel in bypass or trip.  <u>AND</u> C.2.2 Restore bypass removal channel and associated automatic trip channel to OPERABLE status.</p>	<p>1 hour  1 hour  Prior to entering MODE 2 following next MODE 5 entry</p>
<p>D. One or more Functions with two automatic bypass removal channels inoperable.</p>	<p>D.1 Disable bypass channels. <u>OR</u> D.2 Place one affected automatic trip channel in bypass and place the other in trip.</p>	<p>1 hour  1 hour</p>
<p>E. Required Action and associated Completion Time not met.</p>	<p>E.1 Be in MODE 3. <u>AND</u> E.2 Be in MODE 4.</p>	<p>6 hours  12 hours</p>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. Two LOVS channels per DG inoperable.</p>	<p>B.1 Enter applicable Conditions and Required Actions for the associated DG made inoperable by DG - LOVS instrumentation.</p> <p><u>OR</u></p> <p>B.2 Place one channel in bypass and the other channel in trip.</p>	<p>1 hour</p> <p>1 hour</p>
<p>C. More than two LOVS channels per DG inoperable.</p>	<p>C.1 Restore all but two channels to OPERABLE status.</p>	<p>1 hour</p>
<p>D. Required Action and associated Completion Time not met.</p>	<p>D.1 Enter applicable Conditions and Required Actions for the associated DG made inoperable by DG - LOVS instrumentation.</p>	<p>Immediately</p>

3.3 INSTRUMENTATION

3.3.10 Post Accident Monitoring (PAM) Instrumentation

LCO 3.3.10 The PAM instrumentation for each Function in Table 3.3.10-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each Function.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.6.	Immediately
C. -----NOTE----- Not applicable to hydrogen monitor channels. ----- One or more Functions with two required channels inoperable.	C.1 Restore one channel to OPERABLE status.	7 days

(continued)

3.3 INSTRUMENTATION

3.3.11 Remote Shutdown System

LCO 3.3.11 The Remote Shutdown System Instrumentation Functions in Table 3.3.11-1 and each Remote Shutdown System disconnect switch and control circuit shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

-----NOTE-----  
Separate Condition entry is allowed for each Function.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required Functions in Table 3.3.11.1 inoperable.	A.1 Restore required Functions to OPERABLE status.	30 days
B. One or more remote shutdown system disconnect switches or control circuits inoperable.	B.1 Restore required switch(s)/circuit(s) to OPERABLE status	30 days
	<u>OR</u> B.2 Issue procedure changes that identify alternate disconnect methods or control circuits	30 days
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u> C.2 Be in MODE 4.	12 hours

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.13 Low Temperature Overpressure Protection (LTOP) System

LCO 3.4.13 An LTOP System shall be OPERABLE consisting of:

- a. Two OPERABLE Shutdown Cooling System suction line relief valves with lift settings  $\leq 467$  psig aligned to provide overpressure protection for the RCS; or
- b. The RCS depressurized and an RCS vent of  $\geq 16$  square inches.

-----NOTE-----  
 No RCP shall be started unless the secondary side water temperature in each steam generator (SG) is  $\leq 100^\circ\text{F}$  above each of the RCS cold leg temperatures.  
 -----

APPLICABILITY: MODE 4 when any RCS cold leg temperature is  $\leq 214^\circ\text{F}$  during cooldown,  
 MODE 4 when any RCS cold leg temperature is  $\leq 291^\circ\text{F}$  during heatup,  
 MODE 5,  
 MODE 6 when the reactor vessel head is on.

- NOTES-----
- 1. When one or more cold legs reach  $214^\circ\text{F}$ , this LCO remains applicable during periods of steady state temperature conditions until all RCS cold leg temperature reach  $291^\circ\text{F}$ . If a cooldown is terminated prior to reaching  $214^\circ\text{F}$  and a heatup is commenced, this LCO is applicable until all RCS cold leg temperatures reach  $291^\circ\text{F}$ .
  - 2. LCO 3.0.4.b is not applicable when entering MODE 4.
- 

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required Shutdown Cooling System suction line relief valve inoperable in MODE 4.	A.1 Restore required Shutdown Cooling System suction line relief valve to OPERABLE status.	7 days

(continued)

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.16 RCS Leakage Detection Instrumentation

LCO 3.4.16 Both of the following RCS leakage detection instrumentation shall be OPERABLE:

- a. One containment sump monitor; and
- b. One containment atmosphere radioactivity monitor (gaseous and particulate).

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required containment sump monitor inoperable.	A.1 Perform SR 3.4.14.1. <u>AND</u> A.2 Restore containment sump monitor to OPERABLE status.	Once per 24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required containment atmosphere radioactivity monitor inoperable.	B.1.1 Analyze grab samples of the containment atmosphere.	Once per 24 hours
	<u>OR</u>	
	B.1.2 Perform SR 3.4.14.1.	Once per 24 hours
	<u>AND</u>	
	B.2 Restore required containment atmosphere radioactivity monitor to OPERABLE status.	30 days
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	C.2 Be in MODE 5.	36 hours
D. All required monitors inoperable.	D.1 Enter LCO 3.0.3	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.16.1 Perform CHANNEL CHECK of the required containment atmosphere radioactivity monitor.	12 hours
SR 3.4.16.2 Perform CHANNEL FUNCTIONAL TEST of the required containment atmosphere radioactivity monitor.	92 days

(continued)

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.17 RCS Specific Activity

LCO 3.4.17 The specific activity of the reactor coolant shall be within limits.

APPLICABILITY: MODES 1 and 2,  
MODE 3 with RCS cold leg temperature ( $T_{cold}$ )  $\geq$  500°F.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. DOSE EQUIVALENT I-131 &gt; 1.0 <math>\mu</math>Ci/gm.</p>	<p>-----NOTE----- LCO 3.0.4.c is applicable. -----</p> <p>A.1 Verify DOSE EQUIVALENT I-131 within the acceptable region of Figure 3.4.17-1.</p> <p><u>AND</u></p> <p>A.2 Restore DOSE EQUIVALENT I-131 to within limit.</p>	<p>Once per 4 hours</p> <p>48 hours</p>

(continued)

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.4 ECCS – Shutdown

LCO 3.5.4 One High Pressure Safety Injection (HPSI) train shall be OPERABLE.

APPLICABILITY: MODE 3 with pressurizer pressure < 1837 psia and with  
RCS T<sub>c</sub> < 485°F.  
MODE 4.

ACTIONS

-----NOTE-----  
LCO 3.0.4.b is not applicable to ECCS High Pressure Safety Injection subsystem when entering MODE 4.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required HPSI train inoperable.	A.1 Restore required HPSI train to OPERABLE status.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 5.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.5.4.1 The following SRs are applicable: SR 3.5.3.1 SR 3.5.3.5 SR 3.5.3.2 SR 3.5.3.7 SR 3.5.3.3 SR 3.5.3.8 SR 3.5.3.4	In accordance with applicable SRs

3.6 CONTAINMENT SYSTEMS

3.6.7 Hydrogen Recombiners

LCO 3.6.7 Two hydrogen recombiners shared among the three units shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

-----NOTE-----

All three PVNGS Units (Units 1, 2, and 3) shall simultaneously comply with the REQUIRED ACTION(s) when the shared portion of the hydrogen recombiner(s) is the cause of a CONDITION.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One hydrogen recombiner inoperable.	A.1 Restore hydrogen recombiner to OPERABLE status.	30 days
B. Two hydrogen recombiners inoperable.	B.1 Verify by administrative means that the hydrogen control function is maintained.	1 hour <u>AND</u> Every 12 hours thereafter
	<u>AND</u> B.2 Restore one hydrogen recombiner to OPERABLE status.	7 days
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours

3.7 PLANT SYSTEMS

3.7.4 Atmospheric Dump Valves (ADVs)

LCO 3.7.4 One ADV line per steam generator shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,  
MODE 4 when steam generator is being relied upon for heat  
removal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required ADV line inoperable.	A.1 Restore ADV line to OPERABLE status.	72 hours
B. Two required ADV lines inoperable.	B.1 Restore one ADV line to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours
	<u>AND</u> C.2 Be in MODE 4 without reliance on steam generator for heat removal.	24 hours

3.7 PLANT SYSTEMS

3.7.5 Auxiliary Feedwater (AFW) System

LCO 3.7.5 Three AFW trains shall be OPERABLE.

-----NOTE-----  
Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4.  
-----

APPLICABILITY: MODES 1, 2, and 3,  
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

-----NOTE-----  
LCO 3.0.4.b is not applicable.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One steam supply to turbine driven AFW pump inoperable.</p> <p><u>OR</u></p> <p>-----NOTE----- Only applicable if MODE 2 has not been entered following refueling. -----</p> <p>One turbine driven AFW pump inoperable in MODE 3 following refueling.</p>	<p>A.1 Restore affected equipment to OPERABLE status.</p>	<p>7 days</p> <p><u>AND</u></p> <p>10 days from discovery of failure to meet the LCO</p>
<p>B. One AFW train inoperable for reasons other than Condition A in MODE 1, 2, or 3.</p>	<p>B.1 Restore AFW train to OPERABLE status.</p>	<p>72 hours</p> <p><u>AND</u></p> <p>10 days from discovery of failure to meet the LCO</p>

(continued)

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources – Operating

LCO 3.8.1 The following AC electrical sources shall be OPERABLE:

- a. Two circuits between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System;
- b. Two diesel generators (DGs) each capable of supplying one train of the onsite Class 1E AC Electrical Power Distribution System; and
- c. Automatic load sequencers for Train A and Train B.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

-----NOTE-----  
LCO 3.0.4.b is not applicable to DGs.  
-----

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required offsite circuit inoperable.	A.1 Perform SR 3.8.1.1 for required OPERABLE offsite circuit.	1 hour
	<u>AND</u>	<u>AND</u>
	A.2 Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.	Once per 8 hours thereafter
	<u>AND</u>	24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s)
		(continued)

**Attachment 3**  
**Regulatory Commitments**

### Attachment 3

#### LIST OF REGULATORY COMMITMENTS

The following table identifies those actions committed to by APS in this document. Any other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments. Please direct questions regarding these commitments to Thomas N. Weber at (623) 393-5764.

REGULATORY COMMITMENTS	DUE DATE/EVENT
APS will establish the Technical Specification Bases for TS 3.0.4 as adopted with the applicable license amendment.	Implemented with amendment

## **Attachment 4**

### **Changes to Technical Specification Bases Pages**

**Pages:**

**B 3.0-5**

**B 3.0-6 (and Insert)**

**B 3.0-7**

**B 3.0-18**

**B 3.0-19**

**B 3.3.1-46**

**B 3.3.1-48**

**B 3.3.2-11**

**B 3.3.2-12**

**B 3.3.5-25**

**B 3.3.7-6**

**B 3.3.10-17**

**B 3.3.11-4**

**B 3.3.11-5**

**B 3.4.13-8**

**B 3.4.16-4**

**B 3.4.17-3**

**B 3.4.17-4**

**B 3.5.4-3**

**B 3.6.7-3**

**B 3.7.4-3**

**B 3.7.5-5**

**B 3.8.1-7**

BASES

LCO 3.0.3  
(continued)

The requirements of LCO 3.0.3 do not apply in other specified conditions of the Applicability (unless in MODE 1, 2, 3, or 4) because the ACTIONS of individual Specifications sufficiently define the remedial measures to be taken. Exceptions to LCO 3.0.3 are provided in instances where requiring a unit shutdown, in accordance with LCO 3.0.3, would not provide appropriate remedial measures for the associated condition of the unit. An example of this is in LCO 3.7.14, "Fuel Storage Pool Water Level." LCO 3.7.14 has an Applicability of "During movement of irradiated fuel assemblies in the fuel storage pool." Therefore, this LCO can be applicable in any or all MODES. If the LCO and the Required Actions of LCO 3.7.14 are not met while in MODE 1, 2, or 3, there is no safety benefit to be gained by placing the unit in a shutdown condition. The Required Action of LCO 3.7.14 of "Suspend movement of irradiated fuel assemblies in fuel storage pool" is the appropriate Required Action to complete in lieu of the actions of LCO 3.0.3. These exceptions are addressed in the individual Specifications.

LCO 3.0.4

TSF-359 R9  
Insert 3 (LCO 3.0.4.200)

LCO 3.0.4 <sup>allows</sup> establishes limitations on changes in MODES or other specified conditions in the Applicability when an LCO is not met. It ~~precludes~~ placing the unit in a MODE or other specified condition stated in that Applicability (e.g., ~~the~~ Applicability desired to be entered) when ~~the following~~ ~~exist~~.

- a. Unit conditions are such that the requirements of the LCO would not be met in the Applicability desired to be entered, and <sup>in accordance with LCO 3.0.4.a, LCO 3.0.4.b, or LCO 3.0.4.c.</sup>
- b. Continued noncompliance with the LCO requirements, if the Applicability were entered, would result in the unit being required to exit the Applicability desired to be entered to comply with the Required Actions.

LCO 3.0.4.a allows entry into a MODE or other specified condition in the Applicability with the LCO not met when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time.

(continued)

BASES

LCO 3.0.4  
(continued)

Compliance with Required Actions that permit continued operation of the unit for an unlimited period of time in a MODE or other specified condition provides an acceptable level of safety for continued operation. This is without regard to the status of the unit before or after the MODE change. Therefore, in such cases, entry into a MODE or other specified condition in the Applicability may be made in accordance with the provisions of the Required Actions. The provisions of this Specification should not be interpreted as endorsing the failure to exercise the good practice of restoring systems or components to OPERABLE status before entering an associated MODE or other specified condition in the Applicability.

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The provisions of LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS. In addition, the provisions of LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that result from any unit shutdown, including any non-LCO driven shutdowns such as entry into a refueling outage.

In this context, a unit shutdown is defined as a change in MODE or other specified condition in the Applicability associated with transitioning from MODE 1 to MODE 2, MODE 2 to MODE 3, MODE 3 to MODE 4, and MODE 4 to MODE 5.

Exceptions to LCO 3.0.4 are stated in the individual Specifications. The exceptions allow entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered do not provide for continued operation for an unlimited period of time. Exceptions may apply to all the ACTIONS or to a specific Required Action of a Specification.

LCO 3.0.4 is only applicable when entering MODE 4 from MODE 5, MODE 3 from MODE 4, MODE 2 from MODE 3, or MODE 1 from MODE 2. Furthermore, LCO 3.0.4 is applicable when entering any other specified condition in the Applicability only while operating in MODES 1, 2, 3, or 4. The requirements of LCO 3.0.4 do not apply in MODES 5 and 6 or in other specified conditions of the Applicability (unless in MODES 1, 2, 3, or 4) because the ACTIONS of individual Specifications sufficiently define the remedial measures to be taken.

Upon entry into a MODE or other specified condition in the Applicability with the LCO not met, LCO 3.0.1 and LCO 3.0.2 require entry into the applicable Conditions and Required Actions until the Conditions is resolved, until the LCO is met, or until the unit is not within the Applicability of the Technical Specifications.

(continued)

## INSERT "A"

**LCO 3.0.4.b allows entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate.**

**The risk assessment may use quantitative, qualitative, or blended approaches, and the risk assessment will be conducted using the plant program, procedures, and criteria in place to implement 10 CFR 50.65(a)(4), which requires that risk impacts of maintenance activities to be assessed and managed. The risk assessment, for the purposes of LCO 3.0.4 (b), must take into account all inoperable Technical Specification equipment regardless of whether the equipment is included in the normal 10 CFR 50.65(a)(4) risk assessment scope. The risk assessments will be conducted using the procedures and guidance endorsed by Regulatory Guide 1.182, "Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants." Regulatory Guide 1.182 endorses the guidance in Section 11 of NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." These documents address general guidance for conduct of the risk assessment, quantitative and qualitative guidelines for establishing risk management actions, and example risk management actions. These include actions to plan and conduct other activities in a manner that controls overall risk, increased risk awareness by shift and management personnel, actions to reduce the duration of the condition, actions to minimize the magnitude of risk increases (establishment of backup success paths or compensatory measures), and determination that the proposed MODE change is acceptable. Consideration should also be given to the probability of completing restoration such that the requirements of the LCO would be met prior to the expiration of ACTIONS Completion Times that would require exiting the Applicability.**

**LCO 3.0.4.b may be used with single, or multiple systems and components unavailable. NUMARC 93-01 provides guidance relative to consideration of simultaneous unavailability of multiple systems and components.**

**The results of the risk assessment shall be considered in determining the acceptability of entering the MODE or other specified condition in the Applicability, and any corresponding risk management actions. The LCO 3.0.4.b risk assessments do not have to be documented. The Technical Specifications allow continued operation with equipment unavailable in MODE 1 for the duration of the Completion Time. Since this is allowable, and since in general the risk impact in that particular MODE bounds the risk of transitioning into and through the applicable MODES or other specified conditions in the Applicability of the LCO, the use of the LCO 3.0.4.b allowance should be generally acceptable, as long as the risk is assessed and managed as stated above. However, there is a small subset of systems and components that have been determined to be more important to risk and use of the LCO 3.0.4.b allowance is prohibited. The LCOs governing these**

system and components contain Notes prohibiting the use of LCO 3.0.4.b by stating that LCO 3.0.4.b is not applicable.

**LCO 3.0.4.c allows entry into a MODE or other specified condition in the Applicability with the LCO not met based on a Note in the Specification which states LCO 3.0.4.c is applicable. These specific allowances permit entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered do not provide for continued operation for an unlimited period of time and a risk assessment has not been performed. This allowance may apply to all the ACTIONS or to a specific Required Action of a Specification. The risk assessments performed to justify the use of LCO 3.0.4.b usually only consider systems and components. For this reason, LCO 3.0.4.c is typically applied to Specifications which describe values and parameters (e.g., RCS Specific Activity), and may be applied to other Specifications based on NRC plant-specific approval.**

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BASES

LCO 3.0.4  
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Surveillances do not have to be performed on the associated inoperable equipment (or on variables outside the specified limits), as permitted by SR 3.0.1. Therefore, ~~changing MODES or other specified conditions while in an ACTIONS Condition in compliance with LCO 3.0.4 or where an exception to LCO 3.0.4 is stated~~ is not a violation of SR 3.0.1 or SR 3.0.4 for ~~those~~ Surveillances that ~~do not~~ have ~~to be~~ performed ~~due to the associated~~ inoperable equipment. ~~not been~~ However, SRs must be met to ensure OPERABILITY prior to declaring the associated equipment OPERABLE (or variable within limits) and restoring compliance with the affected LCO.

LCO 3.0.5

LCO 3.0.5 establishes the allowance for restoring equipment to service under administrative controls when it has been removed from service or declared inoperable to comply with ACTIONS. The sole purpose of this Specification is to provide an exception to LCO 3.0.2 (e.g., to not comply with the applicable Required Action(s)) to allow the performance of required testing to demonstrate:

- a. The OPERABILITY of the equipment being returned to service; or
- b. The OPERABILITY of other equipment.

The administrative controls ensure the time the equipment is returned to service in conflict with the requirements of the ACTIONS is limited to the time absolutely necessary to perform the required testing to demonstrate OPERABILITY. This Specification does not provide time to perform any other preventive or corrective maintenance.

An example of demonstrating the OPERABILITY of the equipment being returned to service is reopening a containment isolation valve that has been closed to comply with Required Actions and must be reopened to perform the required testing.

(continued)

BASES

SR 3.0.3  
(continued)

If a Surveillance is not completed within the allowed delay period, then the equipment is considered inoperable or the variable is considered outside the specified limits and the Completion Times of the Required Actions for the applicable LCO Conditions begin immediately upon expiration of the delay period. If a Surveillance is failed within the delay period, then the equipment is inoperable, or the variable is outside the specified limits and the Completion Times of the Required Actions for the applicable LCO Conditions begin immediately upon the failure of the Surveillance.

Completion of the Surveillance within the delay period allowed by this Specification, or within the Completion Time of the ACTIONS, restores compliance with SR 3.0.1.

SR 3.0.4

SR 3.0.4 establishes the requirement that all applicable SRs must be met before entry into a MODE or other specified Condition in the Applicability.

This Specification ensures that system and component OPERABILITY requirements and variable limits are met before entry into MODES or other specified conditions in the Applicability for which these systems and components ensure safe operation of the unit.

The provisions of this Specification should not be interpreted as endorsing the failure to exercise the good practice of restoring systems or components to OPERABLE status before entering an associated MODE or other specified condition in the Applicability.

However, in certain circumstances, failing to meet an SR will not result in SR 3.0.4 restricting a MODE change or other specified condition change. When a system, subsystem, division, component, device, or variable is inoperable or outside its specified limits, the associated SR(s) are not required to be performed, per SR 3.0.1, which states that surveillances do not have to be performed on inoperable equipment. When equipment is inoperable, SR 3.0.4 does not apply to the associated SR(s) since the requirement for the SR(s) to be performed is removed. Therefore, failing to perform the Surveillance(s) within the specified Frequency does not result in an SR 3.0.4 restriction to changing MODES

A provision is included to allow entry into a MODE or other specified condition in the Applicability when an LCO is not met due to a Surveillance not being met in accordance with LCO 3.0.4.

(continued)

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BASES

SR 3.0.4  
(continued)

or other specified conditions of the Applicability. However, since the LCO is not met in this instance, LCO 3.0.4 will govern any restrictions that may (or may not) apply to MODE or other specified condition changes.

SR 3.0.4 does not restrict changing MODES or other specified conditions of the Applicability when a Surveillance has not been performed within the specified Frequency, provided the requirement to declare the LCO not met has been delayed in accordance with SR 3.0.3.

The provisions of SR 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS. In addition, the provisions of SR 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that result from any unit shutdown.

The precise requirements for performance of SRs are specified such that exceptions to SR 3.0.4 are not necessary. The specific time frames and conditions necessary for meeting the SRs are specified in the Frequency, in the Surveillance, or both. This allows performance of Surveillances when the prerequisite condition(s) specified in a Surveillance procedure require entry into the MODE or other specified condition in the Applicability of the associated LCO prior to the performance or completion of a Surveillance. A Surveillance that could not be performed until after entering the LCO Applicability, would have its Frequency specified such that it is not "due" until the specific conditions needed are met. Alternately, the Surveillance may be stated in the form of a Note as not required (to be met or performed) until a particular event, condition, or time has been reached. Further discussion of the specific formats of SRs' annotation is found in Section 1.4, Frequency.

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Insert 1 (SR 3.0.4 (a))

~~SR 3.0.4 is only applicable when entering MODE 4 from MODE 5, Mode 3 from MODE 4, MODE 2 from MODE 3, or MODE 1 from MODE 2. Furthermore, SR 3.0.4 is applicable when entering any other specified condition in the Applicability only while operating in MODES 1, 2, 3 or 4. The requirements of SR 3.0.4 do not apply in MODES 5 and 6, or in other specified conditions of the Applicability (unless in MODES 1, 2, 3 or 4) because the ACTIONS of individual Specifications sufficiently define the remedial measures to be taken.~~

In this context, a unit shutdown is defined as a change in MODE or other specified condition in the Applicability associated with transitioning from MODE 1 to MODE 2, MODE 2 to MODE 3, MODE 3 to MODE 4 and MODE 4 to MODE 5.

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BASES

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ACTIONS

A.1 and A.2 (continued)

automatic trip Function. RPS coincidence logic is two-out-of-four.

If one RPS channel is inoperable, startup or power operation is allowed to continue, providing the inoperable channel is placed in bypass or trip in 1 hour (Required Action A.1). The 1 hour allotted to bypass or trip the channel is sufficient to allow the operator to take all appropriate actions for the failed channel and still ensures that the risk involved in operating with the failed channel is acceptable. The failed channel must be restored to OPERABLE status prior to entering MODE 2 following the next MODE 5 entry. With a channel in bypass, the coincidence logic is now in a two-out-of-three configuration.

The Completion Time of prior to entering MODE 2 following the next MODE 5 entry is based on adequate channel to channel independence, which allows a two-out-of-three channel operation since no single failure will cause or prevent a reactor trip.

B.1

Condition B applies to the failure of two channels in any RPS automatic trip Function.

~~The Required Action is modified by a Note stating that LCO 3.0.4 is not applicable. The Note was added to allow the changing of MODES, even though two channels are inoperable, with one channel bypassed and one tripped. In this configuration, the protection system is in a one-out-of-two logic, which is adequate to ensure that no random failure will prevent protection system operation.~~

Required Action B.1 provides for placing one inoperable channel in bypass and the other channel in trip within the Completion Time of 1 hour. This Completion Time is sufficient to allow the operator to take all appropriate actions for the failed channels while ensuring the risk involved in operating with the failed channels is acceptable. With one channel of protective instrumentation bypassed, the RPS is in a two-out-of-three logic; but with another channel failed, the RPS may be operating in a two-out-of-two logic. This is outside the assumptions made in the analyses and should be corrected. To correct the problem, the second channel is placed in trip.

(continued)

BASES

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ACTIONS

D.1 and D.2 (continued)

The restoration of one affected bypassed automatic trip channel must be completed prior to the next CHANNEL FUNCTIONAL TEST, or the plant must shut down per LCO 3.0.3 as explained in Condition B.

~~The Required Action is modified by a Note stating that LCO 3.0.4 is not applicable. The Note was added to allow the changing of MODES even though two channels are inoperable, with one channel bypassed and one tripped. In this configuration, the protection system is in a one-out-of-two logic, which is adequate to ensure that no random failure will prevent protection system operation.~~

E.1 (Before CPC Upgrade)

Condition E applies if any CPC cabinet receives a high temperature alarm. There are redundant temperature sensors in each of the four CPC bays. Since CPC bays B and C also house CEAC calculators 1 and 2, respectively, a high temperature in either of these bays requires entry into LCO 3.3.3, Condition C.

If a CPC cabinet high temperature alarm is received, it is possible for an OPERABLE CPC to be affected and not be completely reliable. Therefore, a CHANNEL FUNCTIONAL TEST must be performed on OPERABLE CPCs within 12 hours. The Completion Time of 12 hours is adequate considering the low probability of undetected failure, the consequences of a single channel failure, and the time required to perform a CHANNEL FUNCTIONAL TEST.

E.1 (After CPC Upgrade)

Condition E is entered when the Required Action and associated Completion Time of Condition A, B, C, or D are not met.

If the Required Actions associated with these Conditions cannot be completed within the required Completion Time, the reactor must be brought to a MODE where the Required Actions do not apply. The allowed Completion Time of 6 hours is reasonable, based on operating experience, for reaching the required MODE from full power conditions in an orderly manner and without challenging plant systems.

(continued)

BASES

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ACTIONS  
(continued)

B.1

Condition B applies to the failure of two trip channels or associated instrument channels, in any RPS automatic trip function. Required Action B.1 provides for placing one inoperable channel in bypass and the other channel in trip within the Completion Time of 1 hour. This Completion Time is sufficient to allow the operator to take all appropriate actions for the failed channels and still ensures the risk involved in operating with the failed channels is acceptable. With one channel of protective instrumentation bypassed, the RPS is in a two-out-of-three logic; but with another channel failed, the RPS may be operating in a two-out-of-two logic. This is outside the assumptions made in the analyses and should be corrected. To correct the problem, the second channel is placed in trip. This places the RPS in a one-out-of-two logic. If any of the other OPERABLE channels receives a trip signal, the reactor will trip.

One of the two inoperable channels will need to be restored to OPERABLE status prior to the next required CHANNEL FUNCTIONAL TEST because channel surveillance testing on an OPERABLE channel requires that the OPERABLE channel be placed in bypass. However, it is not possible to bypass more than one RPS channel, and placing a second channel in trip will result in a reactor trip. Therefore, if one RPS channel is in trip and a second channel is in bypass, a third inoperable channel would place the unit in LCO 3.0.3.

The Required Action is modified by a Note stating that LCO 3.0.4 is not applicable. The Note was added to allow the changing of MODES even though two channels are inoperable, with one channel bypassed and one tripped. In this configuration, the protection system is in a one-out-of-two logic, which is adequate to ensure that no random failure will prevent protection system operation.

C.1, C.2.1, and C.2.2

Condition C applies to one automatic operating bypass removal channel inoperable. If the operating bypass removal channel for the high logarithmic power level operating bypass cannot be restored to OPERABLE status within 1 hour,

(continued)

BASES

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ACTIONS

C.1, C.2.1 and C.2.2 (continued)

the associated RPS channel may be considered OPERABLE only if the operating bypass is not in effect. Otherwise, the affected RPS channel must be declared inoperable, as in Condition A, and the operating bypass either removed or the affected automatic channel placed in trip or maintenance (trip channel) bypass. Both the operating bypass removal channel and the associated automatic trip channel must be repaired prior to entering MODE 2 following the next MODE 5 entry. The Bases for the Required Actions and required Completion Times are consistent with Condition A.

D.1 and D.2

Condition D applies to two inoperable automatic operating bypass removal channels. If the operating bypass removal channels for two operating bypasses cannot be restored to OPERABLE status within 1 hour, the associated RPS channel may be considered OPERABLE only if the operating bypass is not in effect. Otherwise, the affected RPS channels must be declared inoperable, as in Condition B, and the operating bypass either removed or one automatic trip channel placed in maintenance (trip channel) bypass and the other in trip within 1 hour. The restoration of one affected bypassed automatic trip channel must be completed prior to the next CHANNEL FUNCTIONAL TEST or the plant must shut down per LCO 3.0.3, as explained in Condition B. Completion Times are consistent with Condition B.

The Required Action is modified by a Note stating that LCO 3.0.4 is not applicable. The Note was added to allow the changing of MODES even though two channels are inoperable, with one channel bypassed and one tripped. In this configuration, the protection system is in a one-out-of-two logic, which is adequate to ensure that no random failure will prevent protection system operation.

E.1

Condition E is entered when the Required Actions and associated Completion Times of Condition A, B, C, or D are not met.

(continued)

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BASES

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ACTIONS  
(continued)

C.1, C.2.1, and C.2.2

Condition C applies to one automatic operating bypass removal channel inoperable. The only automatic operating bypass removal on an ESFAS is on the Pressurizer Pressure - Low signal. This operating bypass removal is shared with the RPS Pressurizer Pressure - Low bypass removal.

If the bypass removal channel for any operating bypass cannot be restored to OPERABLE status, the associated ESFAS channel may be considered OPERABLE only if the bypass is not in effect. Otherwise, the affected ESFAS channel must be declared inoperable, as in Condition A, and the operating bypass either removed or the bypass removal channel repaired. The Bases for the Required Actions and required Completion Times are consistent with Condition A.

D.1 and D.2

The Required Action is modified by a Note stating that LCO 3.0.4 is not applicable. The Note was added to allow the changing of MODES even though two channels are inoperable, with one channel bypassed and one tripped. In this configuration, the protection system is in a one-out-of-two logic, which is adequate to ensure that no random failure will prevent protection system operation.

Condition D applies to two inoperable automatic operating bypass removal channels. If the operating bypass removal channels for two operating bypasses cannot be restored to OPERABLE status, the associated ESFAS channel may be considered OPERABLE only if the operating bypass is not in effect. Otherwise, the affected ESFAS channels must be declared inoperable, as in Condition B, and either the operating bypass removed or the bypass removal channel repaired. The restoration of one affected bypassed automatic trip channel must be completed prior to the next CHANNEL FUNCTIONAL TEST or the plant must shut down per LCO 3.0.3, as explained in Condition B. Completion Times are consistent with Condition B.

(continued)

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BASES

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ACTIONS

A.1 and A.2 (continued)

Placing this channel in either Condition ensures that logic is in a known configuration. In trip, the LOVS Logic is one-out-of-three. In bypass, the LOVS Logic is two-out-of-three. The 1 hour Completion Time is sufficient to perform these Required Actions.

Once Required Action A.1 has been complied with, Required Action A.2 allows prior to entering MODE 2 following the next MODE 5 entry to repair the inoperable channel. If the channel cannot be restored to OPERABLE status, the plant cannot enter MODE 2 following the next MODE 5 entry. The time allowed to repair or trip the channel is reasonable to repair the affected channel while ensuring that the risk involved in operating with the inoperable channel is acceptable. The prior to entering MODE 2 following the next MODE 5 entry Completion Time is based on adequate channel independence, which allows a two-out-of-three channel operation since no single failure will cause or prevent a system actuation.

B.1 and B.2

Condition B applies if two channels per DG bus are inoperable.

~~The Required Action is modified by a Note stating that LCO 3.0.4 is not applicable. The Note was added to allow the changing of MODES even though two channels are inoperable, with one channel bypassed and one tripped. In this configuration, the protection system is in a one-out-of-two logic, which is adequate to ensure that no random failure will prevent protection system operation.~~

If the channel cannot be placed in bypass or trip within 1 hour, the Conditions and Required Actions for the associated DG made inoperable by DG - LOVS instrumentation are required to be entered. Alternatively, one affected channel is required to be bypassed and the other is tripped, in accordance with Required Action B.2. This places the Function in one-out-of-two logic. The 1 hour Completion Time is sufficient to perform the Required Actions.

(continued)

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BASES

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LCO  
(continued)

For loop and steam generator related variables, the required information is individual loop temperature and individual steam generator level. In these cases two channels are required to be OPERABLE for each loop of steam generator to redundantly provide the necessary information.

In the case of Containment Isolation Valve Position, the important information is the status of the containment penetrations. The LCO requires one position indicator for each active containment isolation valve. This is sufficient to redundantly verify the isolation status of each isolable penetration either via indicated status of the active valve and prior knowledge of the passive valve or via system boundary status. If a normally active containment isolation valve is known to be closed and deactivated, position indication is not needed to determine status. Therefore, the position indication for valves in this state is not required to be OPERABLE.

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APPLICABILITY

The PAM instrumentation LCO is applicable in MODES 1, 2, and 3. These variables are related to the diagnosis and preplanned actions required to mitigate DBAs. The applicable DBAs are assumed to occur in MODES 1, 2, and 3. In MODES 4, 5, and 6, plant conditions are such that the likelihood of an event occurring that would require PAM instrumentation is low; therefore, PAM instrumentation is not required to be OPERABLE in these MODES.

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ACTIONS

Note 1 has been added in the ACTIONS to exclude the MODE change restriction of LCO 3.0.4. This exception allows entry into the applicable MODE while relying on the ACTIONS, even though the ACTIONS may eventually require plant shutdown. This exception is acceptable due to the passive function of the instruments, the operator's ability to monitor an accident using alternate instruments and methods, and the low probability of an event requiring these instruments.

A Note 2 has been added in the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed in Table 3.3.10-1. The Completion Time(s) of the inoperable channel(s) of a Function will be tracked separately for each Function starting from the time the Condition was entered for that Function.

(continued)

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BASES

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LCO  
(continued)

- Atmospheric Dump valve SGBHV185 has been isolated via its block valve to snoop for air leakage. Entry into 3.3.11 is NOT required because the control circuitry for SGBHV185 remains operable.
- Auxiliary Feedwater pump AFBP01 has been removed from service for maintenance. The supply breaker has been racked out and the control power fuses rolled to off. Entry into 3.3.11 IS required because the control circuitry for AFBP01 has been disabled.
- "B" Class pressurizer back-up heaters are de-energized for the performance of 36ST-9SA02. Entry into 3.3.11 is NOT required because the control circuitry for the "B" Class heaters remains operable.
- "B" and "D" PK battery chargers are in service. The "BD" swing charger is tagged out for maintenance. Entry into 3.3.11 IS required because the control circuitry for PKB-H16 has been disabled.

APPLICABILITY

The Remote Shutdown System LCO is applicable in MODES 1, 2, and 3. This is required so that the unit can be placed and maintained in MODE 3 for an extended period of time from a location other than the control room.

This LCO is not applicable in MODE 4, 5, or 6. In these MODES, the unit is already subcritical and in the condition of reduced RCS energy. Under these conditions, considerable time is available to restore necessary instrument control Functions if control room instruments or control become unavailable.

---

ACTIONS

~~A Note has been included that excludes the MODE change restrictions of LCO 3.0.4. This exception allows entry into an applicable MODE while relying on the ACTIONS, even though the ACTIONS may eventually require a plant shutdown. This is acceptable due to the low probability of an event requiring this system.~~

(continued)

BASES

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ACTIONS  
(continued)

A Remote Shutdown System division is inoperable when each Function listed in Table 3.3.11-1 is not accomplished by the required number of channels in Table 3.3.11-1 that satisfies the OPERABILITY criteria for the channel's Function. These criteria are outlined in the LCO section of the Bases.

A note

Note 2 has been added in the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed in Table 3.3.11-1. The Completion Time(s) of the inoperable channel(s)/train(s) of a Function will be tracked separately for each Function starting from the time the Condition was entered for that Function.

A.1

Condition A addresses the situation where one or more instrumentation channels of the Remote Shutdown System are inoperable. This includes any Function listed in Table 3.3.11-1.

The Required Action is to restore the channels to OPERABLE status within 30 days. The Completion Time is based on operating experience and the low probability of an event that would require evacuation of the control room.

B.1 and B.2

Condition B addresses the situation where one or more disconnect or control circuits of the Remote Shutdown System are inoperable. The required disconnect and control circuits are listed in PVNGS controlled documents.

The required Action is to restore the required switch(s)/circuit(s) to OPERABLE status or issue procedure changes that identify alternate disconnect methods or control circuits. The Completion Time for either of the two Actions is 30 days.

(continued)

BASES (continued)

APPLICABILITY  
(continued)

temperatures reach 291°F. This Note provides clarification about Applicability intent. Since PVNGS uses two different temperatures at which the Shutdown Cooling System suction line relief valves must be placed in service there is some possibility of confusion. This Note clarifies those circumstances where the Shutdown Cooling System suction line relief valves must be placed in service.

ACTIONS

A.1

~~The Required Action is modified by a Note stating that LCO 3.0.4 is not applicable.~~

In MODE 4 when any RCS cold leg temperature is  $\leq 214^\circ\text{F}$  during cooldown or  $\leq 291^\circ\text{F}$  during heatup with one Shutdown Cooling System suction line relief valve inoperable, two Shutdown Cooling System suction line relief valves must be restored to OPERABLE status within a Completion Time of 7 days. Two valves are required to meet the LCO requirement and to provide low temperature overpressure mitigation while withstanding a single failure of an active component.

The Completion Time is based on the facts that only one Shutdown Cooling System suction line relief valve is required to mitigate an overpressure transient and that the likelihood of an active failure of the remaining valve path during this time period is very low.

B.1

The consequences of operational events that will overpressure the RCS are more severe at lower temperature (Ref. 6). Thus, one required Shutdown Cooling System suction line relief valve inoperable in MODE 5 or in MODE 6 with the head on, the Completion Time to restore inoperable valve to OPERABLE status is 24 hours.

The 24 hour Completion Time to restore two Shutdown Cooling System suction line relief valves OPERABLE in MODE 5 or in MODE 6 when the vessel head is on is a reasonable amount of time to investigate and repair several types of Shutdown Cooling System suction line relief valve failures without exposure to a lengthy period with only one Shutdown Cooling System suction line relief valve OPERABLE to protect against overpressure events.

(continued)

A Note prohibits the application of LCO 3.0.4.b to an inoperable LTOP system. There is an increased risk associated with entering MODE 4 from MODE 5 with LTOP inoperable and the provisions of LCO 3.0.4.b, which allow entry into a MODE or other specified condition in the Applicability with the LCO not met offer performance of a risk assessment addressing inoperable systems and components, should not be applied in this circumstance.

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BASES (continued)

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ACTIONS

The Actions are modified by a Note that indicates the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when the containment sump and required containment atmosphere radioactivity monitor channels are inoperable. This allowance is provided because other means are available to monitor for RCS LEAKAGE.

A.1 and A.2

If the containment sump monitor is inoperable, no other form of sampling can provide the equivalent information.

However, the containment atmosphere radioactivity monitor will provide indications of changes in leakage. Together with the atmosphere monitor, the periodic surveillance for RCS water inventory balance, SR 3.4.14.1, must be performed at an increased frequency of 24 hours to provide information that is adequate to detect leakage.

Restoration of the sump monitor to OPERABLE status is required to regain the function in a Completion Time of 30 days after the monitor's failure. This time is acceptable considering the frequency and adequacy of the RCS water inventory balance required by Required Action A.1.

B.1.1, B.1.2, and B.2

With either the gaseous or particulate containment atmosphere radioactivity monitoring instrumentation channels inoperable, alternative action is required. Either grab samples of the containment atmosphere must be taken and analyzed, or water inventory balances, in accordance with SR 3.4.14.1, must be performed to provide alternate periodic information. With a sample obtained and analyzed or an inventory balance performed every 24 hours, the reactor may be operated for up to 30 days to allow restoration of both of the radioactivity monitors.

The 24 hour interval provides periodic information that is adequate to detect leakage. The 30 day Completion Time recognizes at least one other form of leakage detection is available.

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BASES

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LCO  
(continued)

The SGTR accident analysis (Ref. 2) shows that the 2 hour site boundary dose levels are within acceptable limits. Violation of the LCO may result in reactor coolant radioactivity levels that could, in the event of an SGTR, lead to site boundary doses that exceed the 10 CFR 100 dose guideline limits.

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APPLICABILITY

In MODES 1 and 2, and in MODE 3 with RCS cold leg temperature  $\geq 500^{\circ}\text{F}$ , operation within the LCO limits for DOSE EQUIVALENT I-131 and gross specific activity is necessary to contain the potential consequences of an SGTR to within the acceptable site boundary dose values.

For operation in MODE 3 with RCS cold leg temperature  $< 500^{\circ}\text{F}$ , and in MODES 4 and 5, the release of radioactivity in the event of an SGTR is unlikely since the saturation pressure of the reactor coolant is below the lift pressure settings of the atmospheric dump valves and main steam safety valves.

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ACTIONS

A.1 and A.2

With the DOSE EQUIVALENT I-131 greater than the LCO limit, samples at intervals of 4 hours must be taken to demonstrate the limits of Figure 3.4.17-1 are not exceeded. The Completion Time of 4 hours is required to obtain and analyze a sample.

Sampling must continue for trending. The DOSE EQUIVALENT I-131 must be restored to within limits within 48 hours.

The Completion Time of 48 hours is required if the limit violation resulted from normal iodine spiking.

A note permits the use of the provisions of LCO 3.0.4.c. This allowance permits entry into the applicable MODES while relying on the ACTIONS.

(continued)

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BASES

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ACTIONS

A.1 and A.2 (continued)

A Note to the Required Actions of Condition A excludes the MODE change restriction of LCO 3.0.4. This exception allows entry into the applicable MODE(S) while relying on the ACTIONS even though the ACTIONS may eventually require plant shutdown. This exception is acceptable due to the significant conservatism incorporated into the specific activity limit, the low probability of an event which is limiting due to exceeding this limit, and the ability to restore transient specific activity excursions while the plant remains at, or proceeds to power operation.

allowance

B.1

If a Required Action and associated Completion Time of Condition A is not met or if the DOSE EQUIVALENT I-131 is in the unacceptable region of Figure 3.4.17-1, the reactor must be brought to MODE 3 with RCS cold leg temperature < 500°F within 6 hours. The allowed Completion Time of 6 hours is required to reach MODE 3 below 500°F without challenging plant systems.

C.1 and C.2

With the gross specific activity in excess of the allowed limit, an analysis must be performed within 4 hours to determine DOSE EQUIVALENT I-131. The Completion Time of 4 hours is required to obtain and analyze a sample.

The change within 6 hours to MODE 3 and RCS cold leg temperature < 500°F lowers the saturation pressure of the reactor coolant below the setpoints of the main steam safety valves and minimizes the potential for venting the SG to the environment in an SGTR event. The allowed Completion Time of 6 hours is required to reach MODE 3 below 500°F from full power conditions and without challenging plant systems.

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(continued)

BASES

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ACTIONS

A.1

With no HPSI pump OPERABLE, the unit is not prepared to respond to a loss of coolant accident. The 1 hour Completion Time to restore at least one HPSI train to OPERABLE status ensures that prompt action is taken to restore the required cooling capacity or to initiate actions to place the unit in MODE 5, where an ECCS train is not required.

B.1

When the Required Action cannot be completed within the required Completion Time, a controlled shutdown should be initiated. Twenty-four hours is reasonable, based on operating experience, to reach MODE 5 in an orderly manner and without challenging plant systems.

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SURVEILLANCE  
REQUIREMENTS

SR 3.5.4.1

The applicable Surveillance descriptions from Bases 3.5.3 apply as they pertain to the required HPSI train.

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REFERENCES

The applicable references from Bases 3.5.3 apply as they pertain to the required HPSI train.

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A note prohibits the application of LCO 3.0.4.6 to an inoperable ECCS high pressure safety injection subsystem. There is an increased risk associated with entering MODE 4 from MODE 5 with an inoperable ECCS high pressure safety injection subsystem and the provisions of LCO 3.0.4.6 which allow entry into MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, should not be applied in this circumstance.

BASES

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APPLICABILITY  
(continued)

In MODES 3 and 4, both the hydrogen production rate and the total hydrogen produced after a LOCA would be less than that calculated for the DBA LOCA. Also, because of the limited time in these MODES, the probability of an accident requiring the hydrogen recombiners is low. Therefore, the hydrogen recombiners are not required in MODE 3 or 4.

In MODES 5 and 6, the probability and consequences of a LOCA are low, due to the pressure and temperature limitations. Therefore, hydrogen recombiners are not required in these MODES.

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ACTIONS

The required ACTIONS have been modified by a Note stating that all three PVNGS Units (Units 1, 2, and 3) shall simultaneously comply with the REQUIRED ACTION(s) when the shared portion of the hydrogen recombiner(s) is the cause of a CONDITION. This is necessary since the three PVNGS Units share the two hydrogen recombiners that are required by this LCO. It will be necessary for the Control Room of the Palo Verde Unit that discovers an inoperable shared portion of the hydrogen recombiner(s) to notify the other two Palo Verde Unit's Control Rooms of the inoperability.

A.1

With one containment hydrogen recombiner inoperable, the inoperable recombiner must be restored to OPERABLE status within 30 days. In this condition, the remaining OPERABLE hydrogen recombiner is adequate to perform the hydrogen control function. The 30 day Completion Time is based on the availability of the other hydrogen recombiner, the small probability of a LOCA or MSLB occurring (that would generate an amount of hydrogen that exceeds the flammability limit), and the amount of time available after a LOCA or MSLB (should one occur) for operator action to prevent hydrogen accumulation from exceeding the flammability limit.

~~Required Action A.1 has been modified by a Note stating that the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when one hydrogen recombiner is inoperable. This allowance is based on the availability of the other hydrogen recombiner, the small probability of a LOCA or MSLB occurring (that would generate an amount of hydrogen that exceeds the flammability limit), and the amount of time available after a LOCA or MSLB (should one occur) for operator action to prevent hydrogen accumulation from exceeding the flammability limit.~~

(continued)

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BASES

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LOC  
(continued)      An ADV is considered OPERABLE when it is capable of providing a controlled relief of the main steam flow, and is capable of fully opening and closing on demand.

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APPLICABILITY      In MODES 1, 2, and 3, and in MODE 4, when steam generator is being relied upon for heat removal, the ADVs are required to be OPERABLE.

In MODES 5 and 6, an SGTR is not a credible event.

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ACTIONS

A.1

~~Required Action A.1 is modified by a Note indicating that LCO 3.0.4 does not apply.~~

With one required ADV line inoperable, action must be taken to restore the OPERABLE status within 72 hours. The 72 hour Completion Time takes into account the availability of a nonsafety grade backup in the Steam Bypass Control System and MSSVs.

B.1

With two required ADV lines inoperable (one in each steam generator), action must be taken to restore one of the ADV lines to OPERABLE status. As the block valve can be closed to isolate an ADV, some repairs may be possible with the unit at power. The 24 hour Completion Time is reasonable to repair inoperable ADV lines, based on the availability of the Steam Bypass Control System and MSSVs, and the low probability of an event occurring during this period that requires the ADV lines.

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BASES

APPLICABILITY

In MODES 1, 2, and 3, the AFW System is required to be OPERABLE and to function in the event that the MFW System is lost. In addition, the AFW System is required to supply enough makeup water to replace steam generator secondary inventory, lost as the unit cools to MODE 4 conditions.

In MODE 4, the AFW System may be used for heat removal via the steam generator.

In MODES 5 and 6, the steam generators are not normally used for decay heat removal, and the AFW System is not required.

ACTIONS

A.1

If one of the two steam supplies to the turbine driven AFW pumps is inoperable, or if a turbine driven pump is inoperable while in MODE 3 immediately following refueling (prior to MODE 2), action must be taken to restore OPERABLE status within 7 days. The 7 day Completion Time is reasonable based on the following reasons:

- a. For the inoperability of a steam supply to the turbine-driven AFW pump, the 7 day Completion time is reasonable since there is a redundant steam supply line for the turbine driven pump.
- b. For the inoperability of a turbine-driven AFW pump while in MODE 3 immediately subsequent to a refueling outage, the 7 day Completion time is reasonable due to the minimal decay heat levels in this situation.
- c. For both the inoperability of a steam supply line to the turbine-driven pump and an inoperable turbine-driven AFW pump while in MODE 3 immediately following a refueling outage, the 7 day Completion time is reasonable due to the availability of redundant OPERABLE motor driven AFW pumps.

The second Completion Time for Required Action A.1 establishes a limit on the maximum time allowed for any combination of Conditions to be inoperable during any continuous failure to meet this LCO.

The 10 day Completion Time provides a limitation time allowed in this specified Condition after discovery of

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A Note prohibits the application of LCO 3.0.4.b to an inoperable AFW Train. There is an increased risk associated with entering a MODE or other specified condition in the Applicability with an AFW Train inoperable and the provisions of LCO 3.0.4.b which allows entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, should not be applied in this circumstance.

BASES

APPLICABILITY  
(continued)

The AC power requirements for MODES 5 and 6, and during movement of irradiated fuel assemblies are covered in LCO 3.8.2, "AC Sources - Shutdown."

ACTIONS

Condition A applies only when the offsite circuit is unavailable to commence automatic load sequencing in the event of a design basis accident (DBA). In cases where the offsite circuit is available for sequencing, but a DBA could cause actuation of the Degraded Voltage Relays, Condition G applies.

A.1

To ensure a highly reliable power source remains with the one offsite circuit inoperable, it is necessary to verify the OPERABILITY of the remaining required offsite circuit on a more frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action not met. However, if a second required circuit fails SR 3.8.1.1, the second offsite circuit is inoperable, and Condition C, for two offsite circuits inoperable, is entered.

A.2

Required Action A.2, which only applies if the train (i.e., ESF bus) cannot be powered from an offsite source, is intended to provide assurance that an event coincident with a single failure of the associated DG will not result in a complete loss of safety function of critical redundant required features. These features require Class 1E power from PBA-S03 or PBB-S04 ESF buses to be OPERABLE, and include: charging pumps; radiation monitors Train A RU-29 and Train B RU-30 (TS 3.3.9), Train A RU-31 and Train B RU-145; pressurizer heaters (TS 3.4.9); ECCS (TS 3.5.3 and TS 3.5.4); containment spray (TS 3.6.6); containment isolation valves NCA-UV-402, NCB-UV-403, WCA-UV-62, and WCB-UV-61 (TS 3.6.3); containment hydrogen monitors (TS 3.3.10); hydrogen recombiners (TS 3.6.7); auxiliary feedwater system (TS 3.7.5); essential cooling water system (TS 3.7.7); essential spray pond system (TS 3.7.8); essential chilled water system (TS 3.7.10); control room essential filtration system (TS 3.7.11) control room emergency air temperature control

A note prohibits the application of LCO 3.04.6 to an inoperable DG. There is an increased risk associated with entering a MODE or other specified condition in the Applicability with an inoperable DG and the provisions of LCO 3.04.6 which allows entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components should not be applied in this circumstance.

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