United States Nuclear Regulatory Commission
Attachment 4 to Serial: RNP-RA/97-0066
(502 Pages)

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION REGARDING THE TECHNICAL SPECIFICATIONS CHANGE REQUEST TO CONVERT TO THE IMPROVED STANDARD TECHNICAL SPECIFICATIONS

SUPPLEMENT 1

IMPROVED TECHNICAL SPECIFICATIONS SUBMITTAL SUPPLEMENT 1

SUPPLEMENT 1
CONVERSION PACKAGE SECTION 1.0
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure _6_ to Serial: RNP-RA/96-0141.

Remove Page	Insert Page

a. Part 1, "Markup of Current Technical Specifications (CTS)"

No Changes

b. Part 2, "Discussion of Changes (DOCs) for CTS Markup"

5	5

c. Part 3, "No Significant Hazards Consideration (NSHC), And Basis For Categorical Exclusion From 10 CFR 51.22"

No Changes

d. Part 4, "Markup of NUREG-1431, Revision 1, `Standard Technical Specifications - Westinghouse Plants,' (ISTS)"

No Changes

e. Part 5, "Justification of Differences (JFDs) to ISTS"

No Changes

f. Part 6, "Markup of ISTS Bases"

No Changes

g. Part 7, "Justification for Differences (JFDs) to ISTS Bases"

No Changes

h. Part 8, "Proposed HBRSEP, Unit No. 2 ITS"

No Changes

i. Part 9, "Proposed Bases to HBRSEP, Unit No. 2 ITS"

No Changes

j. Part 10, "ISTS Generic Changes"

No Changes

CTS is the requirement to enter appropriate CTS action statements for CTS surveillance tests with out-of-tolerance results. Entry into an action statement requires repair (e.g., adjustment) within a limited time or otherwise comply with the CTS action statement. These are administrative changes which provide additional detail and are consistent with ISTS.

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 CTS Specification 3.1.4, which defines $\bar{E}$ as the average of beta and gamma energy disintegration of the specific activity is revised in the ITS definition to include weighted average and the composition of isotopes to exclude iodine. The additional detail in the ITS definition is consistent with current accepted methodology and ensures that $\bar{E}$ is calculated consistently as a variable that is required to meet ITS limits. Since this change adds requirements to the CTS that are currently found only in procedures, this change is more restrictive, and has no adverse impact on safety.

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

None

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

None

SPECIFICATIONS RELOCATED

None

SUPPLEMENT 1
CONVERSION PACKAGE SECTION 2.0
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 7 to Serial: RNP-RA/96-0141.

Remove Page	Insert Page (After Page)

a. Part 1, "Markup of Current Technical Specifications (CTS)"

No Changes

b. Part 2, "Discussion of Changes (DOCs) for CTS Markup"

Remove Page	Insert Page (After Page)
2	2

c. Part 3, "No Significant Hazards Consideration (NSHC), And Basis For Categorical Exclusion From 10 CFR 51.22"

No Changes

d. Part 4, "Markup of NUREG-1431, Revision 1, `Standard Technical Specifications - Westinghouse Plants,' (ISTS)"

No Changes

e. Part 5, "Justification of Differences (JFDs) to ISTS"

No Changes

f. Part 6, "Markup of ISTS Bases"

No Changes

g. Part 7, "Justification for Differences (JFDs) to ISTS Bases"

No Changes

h. Part 8, "Proposed HBRSEP, Unit No. 2 ITS"

No Changes

i. Part 9, "Proposed Bases to HBRSEP, Unit No. 2 ITS"

No Changes

j. Part 10, "ISTS Generic Changes"

No Changes

Consequentially, this is an administrative change. This change is consistent with NUREG-1431 as modified by TSTF-5.

CTS 6.7.1.d, in the event of a SL violation, specifies preparation of a report and delineates the content and review requirement for this report. ITS does not retain this specification. 10 CFR 50.73(a)(2)(ii)(B) requires the submittal of a licensee event report (LER), for events which encompass safety limit violations and specifies content requirements. This change deletes requirements from the Technical Specifications that are duplicative of other regulations. Consequentially, this is an administrative change. This change is consistent with NUREG-1431 as modified by TSTF-5.

A7 The CTS Bases (and References) are not retained in the ITS, but are replaced in their entirety. The ITS includes significantly expanded and improved Bases. The Bases do not define or impose any specific requirements but serve to explain, clarify and document the reasons (i.e., Bases) for the associated Specification. The Bases are not part of the Technical Specifications required by 10 CFR 50.36. This change is administrative, and has no adverse impact on safety.

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 The Applicability for the reactor core SL has been changed to not only include when the reactor is critical, but also when in MODE 2 and subcritical. This is necessary to ensure that the SLs are also met during reactor startup due to the increased potential in this condition for a transient with the reactor operating near normal operating temperature and pressure conditions prior to criticality. This is an additional restriction on plant operation and is consistent with NUREG-1431.

M2 CTS 6.7.1.b specifies compliance with 10 CFR 50.36(c)(1)(i) in the event of a safety limit violation. This regulation requires the reactor be shutdown in the event of exceeding a SL, however this regulation does not explicitly require restoration of compliance with the SL and no time frames are delineated. ITS 2.2.1 and 2.2.2 specify, in the event of exceeding a SL while in MODE 1 or 2, ". . . restore compliance and be in MODE 3 within 1 hour." ITS 2.2.2 specifies, in the event of exceeding a SL while in MODE 3, 4 or 5, ". . . restore compliance within 5 minutes." Due to the importance of operating within the safety limits, explicitly requiring prompt restoration to within the safety limits is necessary. The explicit requirement to restore compliance and the specified time limits are additional restrictions on plant operation and are consistent with NUREG-1431.

SUPPLEMENT 1
CONVERSION PACKAGE SECTION 3.0
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 8 to Serial: RNP-RA/96-0141.

	Remove Page	Insert Page
a.	Part 1, "Markup of Current Technical Specifications (CTS)"	
	No Changes	
b.	Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
	4 through 6	4 through 6
c.	Part 3, "No Significant Hazards Consideration (NSHC), And Basis For Categorical Exclusion From 10 CFR 51.22"	
	No Changes	
d.	Part 4, "Markup of NUREG-1431, Revision 1, `Standard Technical Specifications - Westinghouse Plants,' (ISTS)"	
	No Changes	
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	No Changes	
f.	Part 6, "Markup of ISTS Bases"	
	B 3.0-10	B 3.0-10
g.	Part 7, "Justification for Differences (JFDs) to ISTS Bases"	
	No Changes	
h.	Part 8, "Proposed HBRSEP, Unit No. 2 ITS"	
	No Changes	
i.	Part 9, "Proposed Bases to HBRSEP, Unit No. 2 ITS"	
	B 3.0-10 through B 3.0-15	B 3.0-10 through B 3.0-15
j.	Part 10, "ISTS Generic Changes"	
	Cover Page	Cover Page
	-	TSTF-6 (3 pages)
	-	TSTF-8 (28 pages)

Specifications required by 10 CFR 50.36. Therefore, this is an administrative change.

A12 CTS 3.3.7 provides Administrative Requirements to notify the NRC when maintenance to restore components or systems will exceed the periods specified. The requirements of this specification were rendered moot when CTS 3.0 was adopted in amendment 67. When an LCO cannot be met because of circumstances in excess of those addressed in the specification, CTS 3.0 requires the unit be placed in Hot Shutdown within 8 hours and Cold Shutdown within an additional 38 hours. Since the requirements of CTS 3.3.7 are obviated by the more restrictive requirements of CTS 3.0, the deletion of CTS 3.3.7 is considered an administrative change and is consistent with ISTS.

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 CTS Specification 3.0 is revised to adopt ISTS Specification LCO 3.0.3 text in the ITS. The CTS requires that, if an LCO cannot be met and there is no specific action required to be taken, the unit be placed in Hot Shutdown within 8 hours and in Cold Shutdown within the next 30 hours. The ITS requires that, if an LCO cannot be met and there is no specific action required to be taken, the unit be placed in Hot Standby (MODE 3) within 7 hours, Hot Shutdown (MODE 4) within 13 hours, and Cold Shutdown (MODE 5) within 37 hours. The ITS MODE 3 specification of 7 hours imposes a more restrictive requirement by one hour. An additional restraint imposed that is not specified in the CTS, is that the unit be in MODE 4 within 13 hours. The time allowed to achieve cold shutdown in the CTS is 38 hours, and the time allowed in the ITS to achieve cold shutdown is 37 hours, resulting in the ITS being more restrictive by one hour. These changes are necessary to establish consistency with other similar shutdown requirements stated in individual specifications and are based on operating experience which indicates the times to place the unit in the specified MODES are reasonable. The time limits specified to reach lower MODES of operation permit the shutdown to proceed in a controlled and orderly manner that is well within the specified maximum cooldown rate and within the capabilities of the unit, assuming that only the minimum required equipment is OPERABLE. This reduces thermal transients on components of the Reactor Coolant System and the potential for a plant upset that could challenge safety systems under conditions to which this Specification applies. This change imposes more restrictive requirements and is consistent with the ISTS.

M2 CTS Specifications 3.0 and 4.0 are revised to adopt ISTS Specifications LCO 3.0.4 and SR 3.0.4 in the ITS. These Specifications provide guidance related to MODE and operating condition entry when an LCO is not met. They also clarify those MODE changes permitted when required to comply with ACTIONS. The CTS does not preclude entry into a MODE in

which compliance with a Specification applicable to that MODE is not met at the time of entry. This change is necessary to establish consistency with the overall approach and philosophy used in developing the ISTS. This change imposes more restrictive requirements and is consistent with the ISTS.

M3 The statement, "For Frequencies specified as "once," the above interval extension does not apply," is added to clarify that the 1.25 times the interval specified in the Frequency does not apply to certain Surveillances. This is because the interval extension concept is based on scheduling flexibility for repetitive performances, and these Surveillances are not repetitive in nature, and essentially have no "interval...as measured from the previous performance." This precludes the ability to extend these performances, and is therefore an additional restriction. The current Specification can be seen to allow the extension to apply to all Surveillances. This change is necessary since the initial performance of the Required Action, whether it is a particular Surveillance or some other remedial action, is considered a single action with a single Completion Time. One reason for not allowing the 25% extension to this Completion Time is that such an action usually verifies that no loss of function has occurred by checking the status of redundant or diverse components or accomplishes the function of the inoperable equipment in an alternative manner. This change imposes more restrictive requirements and is consistent with the ISTS.

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA1 CTS Specification 4.0 is revised to adopt ISTS Specification SR 3.0.2 in the ITS. The CTS sentence, "Prior to returning the system to service, the specified calibration and testing surveillance shall be performed," is replaced with the ISTS sentence, "Surveillances have to be met and performed in accordance with SR 3.0.2, prior to returning equipment to OPERABLE status," and relocated to the Bases for SR 3.0.1. This detail is not required to be in the ITS to provide adequate protection of the health and safety of the public, since it provides details of a clarification nature, which are not pertinent to the actual surveillance requirement, but rather describe acceptable methods of compliance, and more appropriately belong in the Bases. Since these details are not necessary to adequately describe actual surveillance requirements, they can be relocated to the Bases with no adverse impact on safety. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. Changes to the Bases are controlled in accordance with the provisions of 10 CFR 50.59. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing

license amendments to these requirements will be reduced. This change is consistent with NUREG-1431. Therefore, relocation of this detail is acceptable.

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 LCO 3.0.5 is added to provide an exception to LCO 3.0.2 for instances where restoration of inoperable equipment to an OPERABLE status could not be performed while continuing to comply with Required Actions. Many Technical Specification ACTIONS require an inoperable component to be removed from service, such as: maintaining an isolation valve closed or tripping an inoperable instrument channel. To allow the performance of Surveillance Requirements to demonstrate the OPERABILITY of the equipment being returned to service, or to demonstrate the OPERABILITY of other equipment or variables within limits, which otherwise could not be performed without returning the equipment to service, an exception to these Required Actions is necessary. LCO 3.0.5 is necessary to establish an allowance that, although informally utilized in restoration of inoperable equipment, is not formally recognized in the current TS. Without this allowance certain components could not be restored to OPERABLE status and a plant shutdown would ensue. Clearly, it is not the intent or desire that the Technical Specifications preclude the return to service of a suspected OPERABLE component to confirm its OPERABILITY. This allowance is deemed to represent a more stable, safe operation than requiring a plant shutdown to complete the restoration and confirmatory testing.

L2 The statement "If a Completion Time requires periodic performance on a "once per..." basis, the above Frequency extension applies to each performance after the initial performance," is added to allow the 1.25 times the interval specified in the Frequency concept to apply to periodic Required Actions. This provides the consistency in scheduling flexibility for all performances of periodic requirements, whether they are Surveillances or Required Actions. The intent remains to perform the activity, on the average, once during each specified interval.

TECHNICAL CHANGES - LESS RESTRICTIVE (RELOCATION)

None

B 3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

1

BASES

CTS

SRs — SR 3.0.1 through SR 3.0.4 establish the general requirements applicable to all Specifications and apply at all times. unless otherwise stated.

SR 3.0.1 — SR 3.0.1 establishes the requirement that SRs must be met during the MODES or other specified conditions in the Applicability for which the requirements of the LCO apply. unless otherwise specified in the individual SRs. This Specification is to ensure that Surveillances are performed to verify the OPERABILITY of systems and components. and that variables are within specified limits. Failure to meet a Surveillance within the specified Frequency. in accordance with SR 3.0.2. constitutes a failure to meet an LCO.

Systems and components are assumed to be OPERABLE when the associated SRs have been met. Nothing in this Specification. however. is to be construed as implying that systems or components are OPERABLE when:

a. The systems or components are known to be inoperable. although still meeting the SRs: or

b. The requirements of the Surveillance(s) are known not to be met between required Surveillance performances.

Surveillances do not have to be performed when the unit is in a MODE or other specified condition for which the requirements of the associated LCO are not applicable. unless otherwise specified. The SRs associated with a test exception are only applicable when the test exception is used as an allowable exception to the requirements of a Specification.

Unplanned events may satisfy the requirements (including applicable acceptance criteria) for a given SR. In this case, the unplanned event may be credited as fulfilling the performance of the SR. This allowance includes those SRs whose performance is normally precluded in a given MODE or other specified condition.

[4.0]

Surveillances. including Surveillances invoked by Required Actions. do not have to be performed on inoperable equipment because the ACTIONS define the remedial measures that apply. Surveillances have to be met and performed in accordance with SR 3.0.2. prior to returning equipment to OPERABLE status.

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B 3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

BASES

SRs

SR 3.0.1 through SR 3.0.4 establish the general requirements applicable to all Specifications and apply at all times, unless otherwise stated.

SR 3.0.1

SR 3.0.1 establishes the requirement that SRs must be met during the MODES or other specified conditions in the Applicability for which the requirements of the LCO apply, unless otherwise specified in the individual SRs. This Specification is to ensure that Surveillances are performed to verify the OPERABILITY of systems and components, and that variables are within specified limits. Failure to meet a Surveillance within the specified Frequency, in accordance with SR 3.0.2, constitutes a failure to meet an LCO.

Systems and components are assumed to be OPERABLE when the associated SRs have been met. Nothing in this Specification, however, is to be construed as implying that systems or components are OPERABLE when:

a. The systems or components are known to be inoperable, although still meeting the SRs; or

b. The requirements of the Surveillance(s) are known not to be met between required Surveillance performances.

Surveillances do not have to be performed when the unit is in a MODE or other specified condition for which the requirements of the associated LCO are not applicable, unless otherwise specified. The SRs associated with a test exception are only applicable when the test exception is used as an allowable exception to the requirements of a Specification.

Unplanned events may satisfy the requirements (including applicable acceptance criteria) for a given SR. In this case, the unplanned event may be credited as fulfilling the performance of the SR. This allowance includes those SRs whose performance is normally precluded in a given MODE or other specified condition.

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BASES

SR 3.0.1 (continued)

Surveillances, including Surveillances invoked by Required Actions, do not have to be performed on inoperable equipment because the ACTIONS define the remedial measures that apply. Surveillances have to be met and performed in accordance with SR 3.0.2, prior to returning equipment to OPERABLE status.

Upon completion of maintenance, appropriate post maintenance testing is required to declare equipment OPERABLE. This includes ensuring applicable Surveillances are not failed and their most recent performance is in accordance with SR 3.0.2. Post maintenance testing may not be possible in the current MODE or other specified conditions in the Applicability due to the necessary unit parameters not having been established. In these situations, the equipment may be considered OPERABLE provided testing has been satisfactorily completed to the extent possible and the equipment is not otherwise believed to be incapable of performing its function. This will allow operation to proceed to a MODE or other specified condition where other necessary post maintenance tests can be completed.

SR 3.0.2

SR 3.0.2 establishes the requirements for meeting the specified Frequency for Surveillances and any Required Action with a Completion Time that requires the periodic performance of the Required Action on a "once per . . ." interval.

SR 3.0.2 permits a 25% extension of the interval specified in the Frequency. This extension facilitates Surveillance scheduling and considers plant operating conditions that may not be suitable for conducting the Surveillance (e.g., transient conditions or other ongoing Surveillance or maintenance activities).

The 25% extension does not significantly degrade the reliability that results from performing the Surveillance at its specified Frequency. This is based on the recognition that the most probable result of any particular Surveillance being performed is the verification of conformance with the SRs. The exceptions to SR 3.0.2 are those Surveillances for which the 25% extension of the interval specified in the Frequency does not apply. These exceptions are stated in the individual Specifications. An example of where SR 3.0.2

(continued)

BASES

SR 3.0.2 (continued)

does not apply is a Surveillance with a Frequency of "in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions." The requirements of regulations take precedence over the TS. The TS cannot in and of themselves extend a test interval specified in the regulations.

Therefore, there is a Note in the Frequency stating, "SR 3.0.2 is not applicable."

As stated in SR 3.0.2, the 25% extension also does not apply to the initial portion of a periodic Completion Time that requires performance on a "once per ..." basis. The 25% extension applies to each performance after the initial performance. The initial performance of the Required Action, whether it is a particular Surveillance or some other remedial action, is considered a single action with a single Completion Time. One reason for not allowing the 25% extension to this Completion Time is that such an action usually verifies that no loss of function has occurred by checking the status of redundant or diverse components or accomplishes the function of the inoperable equipment in an alternative manner.

The provisions of SR 3.0.2 are not intended to be used repeatedly merely as an operational convenience to extend Surveillance intervals (other than those consistent with refueling intervals) or periodic Completion Time intervals beyond those specified.

SR 3.0.3

SR 3.0.3 establishes the flexibility to defer declaring affected equipment inoperable or an affected variable outside the specified limits when a Surveillance has not been completed within the specified Frequency. A delay period of up to 24 hours or up to the limit of the specified Frequency, whichever is less, applies from the point in time that it is discovered that the Surveillance has not been performed in accordance with SR 3.0.2, and not at the time that the specified Frequency was not met.

This delay period provides adequate time to complete Surveillances that have been missed. This delay period permits the completion of a Surveillance before complying with Required Actions or other remedial measures that might preclude completion of the Surveillance.

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BASES

SR 3.0.3 (continued)

The basis for this delay period includes consideration of unit conditions, adequate planning, availability of personnel, the time required to perform the Surveillance, the safety significance of the delay in completing the required Surveillance, and the recognition that the most probable result of any particular Surveillance being performed is the verification of conformance with the requirements. When a Surveillance with a Frequency based not on time intervals, but upon specified unit conditions or operational situations, is discovered not to have been performed when specified, SR 3.0.3 allows the full delay period of 24 hours to perform the Surveillance.

SR 3.0.3 also provides a delay period for completion of Surveillances that become applicable as a consequence of MODE changes imposed by Required Actions.

Failure to comply with specified Frequencies for SRs is expected to be an infrequent occurrence. Use of the delay period established by SR 3.0.3 is a flexibility which is not intended to be used as an operational convenience to extend Surveillance intervals.

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

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BASES

SR 3.0.4 (continued)

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 statusbefore 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. Therefor, failing to perform the Surveillance(s) within the specified Frequency does not result in an SR 3.0.4 restriction to changing MODES 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.

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 LCO 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"

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BASES

SR 3.0.4 (continued)

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.

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.

IMPROVED STANDARD TECHNICAL SPECIFICATION (ISTS) CONVERSION

CHAPTER 3.0 - LCO AND SR APPLICABILITY

PART 10

ISTS GENERIC CHANGES (TSTFs 6, 8)

Supplement 1

Industry/TSTF Standard Technical Specification Change Traveler

Add Exception for LCO 3.0.7 to LCO 3.0.1

NUREGs Affected: ☒ 1430 ☒ 1431 ☐ 1432 ☐ 1433 ☐ 1434

Description:

Add exception for LCO 3.0.7 to LCO 3.0.1

Justification:

This change completes Revision 0 change NRC-03, C.5 which added LCO 3.0.7 to address test exception LCOs and was omitted by the original change. The CEOG, BWR-4 and BWR-6 ITS already contain this change.

Affected Technical Specifications

LCO 3.0.1 LCO Applicability

WOG Review Information

WOG-3.1

Originating Plant: Date Provided to OG: 15-Mar-95 Needed By:

Owners Group History:

WOG-03, C.1

Owners Group Resolution: Approved Date: 11-Aug-95

TSTF Review Information

TSTF Received Date: 05-Sep-95 Date Distributed to OGs for Review: 05-Sep-95

OG Review Completed: ☒ BWOG ☒ WOG ☒ CEOG ☒ BWROG

TSTF History:

TSTF Resolution: Approved Date: 05-Sep-95 **TSTF- 6**

NRC Review Information

NRC Received Date: 03-Oct-95 NRC Reviewer: J. Leuhman Reviewer Phone #:

Reviewer Comments:

10/6/95 J. Leuhman review complete, accept change.
10/6/95 - to C. Grimes for review.
11/17/95 - C. Grimes approved change.

Final Resolution: Approved Date: 27-Nov-95

Revision History

Revision 1 Revision Date: 08-Jan-96 Proposed by: TSTF

Revision Description:
Remarked the pages to use TSTF number instead of OG number.

Resolution: Date:

Incorporation Into the NUREGs

File to BBS/LAN Date:

File to TSTF Date:

File Rev Incoporated:

File Rev Incorporated Date

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 4 within 13 hours; and

c. 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. This

(continued)

Industry/TSTF Standard Technical Specification Change Traveler

Revise the SR 3.0.1 Bases to allow credit for unplanned events to meet any Surveillance

Classification: Not Classified

NUREGs Affected: ☑ 1430 ☑ 1431 ☑ 1432 ☑ 1433 ☑ 1434

Description:

Revise the Bases for SR 3.0.1 to clarify that credit may be taken for unplanned events to satisfy any SR, not just those in Section 3.8, "Electrical Power Systems".

Justification:

This change eliminates the potential confusion that may arise with respect to the application of an unplanned event which satisfies the requirements of a given SR by including a discussion in the Bases of SR 3.0.1. Currently, only Section 3.8 contains the Note which states that "credit may be taken for unplanned events that satisfy this SR." In addition, the Notes also contain a restriction on the mode of performance, such that the surveillance is not performed in a given mode where the perturbation to the electrical distribution system would cause a challenge to safety systems. The intent of the Note is applicable to any SR. The revision to the Bases for SR 3.0.1 will provide the necessary clarification so that the usage of this allowance can be applied consistently throughout the Technical Specifications.

Affected Technical Specifications

SR 3.0.1 Bases	SR Applicability
SR 3.8.1.8	AC Sources - Operating
SR 3.8.1.8 Bases	AC Sources - Operating
SR 3.8.1.9	AC Sources - Operating
SR 3.8.1.9 Bases	AC Sources - Operating
SR 3.8.1.10	AC Sources - Operating
SR 3.8.1.10 Bases	AC Sources - Operating
SR 3.8.1.11	AC Sources - Operating
SR 3.8.1.11 Bases	AC Sources - Operating
SR 3.8.1.12	AC Sources - Operating
SR 3.8.1.12 Bases	AC Sources - Operating
SR 3.8.1.13	AC Sources - Operating
SR 3.8.1.13 Bases	AC Sources - Operating
SR 3.8.1.14	AC Sources - Operating
SR 3.8.1.14 Bases	AC Sources - Operating
SR 3.8.1.16	AC Sources - Operating
SR 3.8.1.16 Bases	AC Sources - Operating

SR 3.8.1.17	AC Sources - Operating
SR 3.8.1.17 Bases	AC Sources - Operating
SR 3.8.1.18	AC Sources - Operating
SR 3.8.1.18 Bases	AC Sources - Operating
SR 3.8.1.19	AC Sources - Operating
SR 3.8.1.19 Bases	AC Sources - Operating
SR 3.8.4.6	DC Sources - Operating
SR 3.8.4.6 Bases	DC Sources - Operating
SR 3.8.4.7	DC Sources - Operating
SR 3.8.4.7 Bases	DC Sources - Operating
SR 3.8.4.8	DC Sources - Operating
SR 3.8.4.8 Bases	DC Sources - Operating

WOG Review Information

WOG-3.3

Originating Plant: Date Provided to OG: 15-Mar-95 Needed By:

Owners Group History:

WOG-03, C.3

Owners Group Resolution: Approved Date: 11-Aug-95

TSTF Review Information

TSTF Received Date: 05-Sep-95 Date Distributed to OGs for Review: 05-Sep-95

OG Review Completed: ☑ BWOG ☑ WOG ☑ CEOG ☑ BWROG

TSTF History:

TSTF Resolution: Approved Date: 05-Sep-95 **TSTF- 8**

NRC Review Information

NRC Received Date: 03-Oct-95 NRC Reviewer: E. Tomlinson Reviewer Phone #:

Reviewer Comments:

10/11/95 - E. Tomlinson reviewing.
11/17/95 - TSB mgmt requested reviewer to forward pkg to EELB to assist with modification of package
11/30/95 - Change rejected
6/11/96 - C. Grimes comment: He will meet with Ed Tomlinson and selected TSB staff to modify the language in LCO 3.0.1 and the general language in Bases 3.0.1.
9/18/96 - NRC approves with modifications to the Bases. Change SR 3.0.1 for NUREGs-1430, 1431, and 1432 to include "(including applicable acceptance criteria)" after "... satisfy the requirements..." in the first sentence of the paragraph to be inserted as second paragraph after SR 3.0.1.b.
9/18/96 - TSTF accepts the revisions and will create new revision.
10/15/96 - New revision forwarded to the TSTF for review.

Final Resolution: NRC Requests Changes: TSTF Will Revise Final Resolution Date:

Revision History

TSTF Revision 1 Revision Date: 08-Jan-96 Proposed by: TSTF

Revision Description:
Remarked the pages to use TSTF number instead of OG number.
The changes to SR 3.0.1 and 3.8 were marked as being PWR only when they are applicable to the BWRs. This was corrected.

Resolution: Approved Date: 08-Jan-96

TSTF Revision 2 Revision Date: 05-Oct-96 Proposed by: NRC

Revision Description:
NRC approves with modifications to the Bases. Change SR 3.0.1 for NUREGs-1430, 1431, and 1432 to include "(including applicable acceptance criteria)" after "... satisfy the requirements..." in the first sentence of the paragraph to be inserted as second paragraph after SR 3.0.1.b.

Resolution: Approved Date: 19-Dec-96

Incorporation Into the NUREGs

File to BBS/LAN Date:

File to TSTF Date:

File Rev Incoporated:

File Rev Incorporated Date

B 3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

BASES

SRs

SR 3.0.1 through SR 3.0.4 establish the general requirements applicable to all Specifications and apply at all times, unless otherwise stated.

SR 3.0.1

SR 3.0.1 establishes the requirement that SRs must be met during the MODES or other specified conditions in the Applicability for which the requirements of the LCO apply, unless otherwise specified in the individual SRs. This Specification is to ensure that Surveillances are performed to verify the OPERABILITY of systems and components, and that variables are within specified limits. Failure to meet a Surveillance within the specified Frequency, in accordance with SR 3.0.2, constitutes a failure to meet an LCO.

Systems and components are assumed to be OPERABLE when the associated SRs have been met. Nothing in this Specification, however, is to be construed as implying that systems or components are OPERABLE when:

a. The systems or components are known to be inoperable, although still meeting the SRs; or

b. The requirements of the Surveillance(s) are known not to be met between required Surveillance performances.

Surveillances do not have to be performed when the unit is in a MODE or other specified condition for which the requirements of the associated LCO are not applicable, unless otherwise specified. The SRs associated with a test exception are only applicable when the test exception is used as an allowable exception to the requirements of a Specification.

Insert →

Surveillances, including Surveillances invoked by Required Actions, do not have to be performed on inoperable equipment because the ACTIONS define the remedial measures that apply. Surveillances have to be met and performed in accordance with SR 3.0.2, prior to returning equipment to OPERABLE status.

(continued)

INSERT

Unplanned events may satisfy the requirements (including applicable acceptance criteria) for a given SR. In this case, the unplanned event may be credited as fulfilling the performance of the SR. This allowance includes those SRs whose performance is normally precluded in a given MODE or other specified condition.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.7	---NOTE--- All DG starts may be preceded by an engine prelube period. ------ Verify each DG starts from standby condition and achieves in ≤ [10] seconds, voltage ≥ [3740] V and ≤ [4580] V, and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.	184 days
[SR 3.8.1.8	---NOTE--- This Surveillance shall not be performed in MODE 1 or 2. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ ------ Verify [automatic [and] manual] transfer of AC power sources from the normal offsite circuit to each alternate [required] offsite circuit.	[18 months]]

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.1.9	---NOTES--- 1. This Surveillance shall not be performed in MODE 1 or 2. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ 2. If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ [0.9]. --- Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and: a. Following load rejection, the frequency is ≤ [63] Hz; b. Within [3] seconds following load rejection, the voltage is ≥ [3740] V and ≤ [4580] V; and c. Within [3] seconds following load rejection, the frequency is ≥ [58.8] Hz and ≤ [61.2] Hz.	[18 months]
SR 3.8.1.10	---NOTE--- This Surveillance shall not be performed in MODE 1 or 2. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ --- Verify each DG operating at a power factor ≤ [0.9] does not trip and voltage is maintained ≤ [5000] V during and following a load rejection of ≥ [4500] kW and ≤ [5000] kW.	[18 months]

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.11	-------------------NOTES------------------- 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ --- Verify on an actual or simulated loss of offsite power signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ [10] seconds, 2. energizes auto-connected shutdown loads through [automatic load sequencer], 3. maintains steady state voltage ≥ [3740] V and ≤ [4580] V, 4. maintains steady state frequency ≥ [58.8] Hz and ≤ [61.2] Hz, and 5. supplies permanently connected [and auto-connected] shutdown loads for ≥ 5 minutes.	[18 months]

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.12	-------------------NOTES------------------- 1. All DG starts may be preceded by prelube period. 2. This Surveillance shall not be performed in MODE 1 or 2. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ --- Verify on an actual or simulated Engineered Safety Feature (ESF) actuation signal each DG auto-starts from standby condition and: a. In ≤ [10] seconds after auto-start and during tests, achieves voltage ≥ [3740] V and ≤ [4580] V; b. In ≤ [10] seconds after auto-start and during tests, achieves frequency ≥ [58.8] Hz and ≤ [61.2] Hz; c. Operates for ≥ 5 minutes; d. Permanently connected loads remain energized from the offsite power system; and e. Emergency loads are energized [or auto-connected through the automatic load sequencer] from the offsite power system.	[18 months]

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.13	-------------------NOTE------------------- This Surveillance shall not be performed in MODE 1 or 2. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ -- Verify each DG's automatic trips are bypassed on [actual or simulated loss of voltage signal on the emergency bus concurrent with an actual or simulated ESF actuation signal] except: a. Engine overspeed; [and] b. Generator differential current; c. [Low lube oil pressure;] d. [High crankcase pressure;] and e. [Start failure relay].	[18 months]

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.14	-------------------NOTES------------------- 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. This Surveillance shall not be performed in MODE 1 or 2. ~~However, credit may be taken for unplanned events that satisfy this SR~~. --- Verify each DG operating at a power factor ≤ [0.9] operates for ≥ 24 hours: a. For ≥ [2] hours loaded ≥ [5250] kW and ≤ [5500] kW; and b. For the remaining hours of the test loaded ≥ [4500] kW and ≤ [5000] kW.	[18 months]
SR 3.8.1.15	-------------------NOTES------------------- 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ [2] hours loaded ≥ [4500] kW and ≤ [5000] kW. Momentary transients outside of load range do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. --- Verify each DG starts and achieves, in ≤ [10] seconds, voltage ≥ [3740] V, and ≤ [4580] V and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.	[18 months]

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.16	------------------NOTE------------------ This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ~~However, credit may be taken for unplanned events that satisfy this SR~~. -- Verify each DG: a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power; b. Transfers loads to offsite power source; and c. Returns to ready-to-load operation.	[18 months]
[SR 3.8.1.17	------------------NOTE------------------ This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ~~However, credit may be taken for unplanned events that satisfy this SR~~. -- Verify, with a DG operating in test mode and connected to its bus, an actual or simulated ESF actuation signal overrides the test mode by: a. Returning DG to ready-to-load operation [; and b. Automatically energizing the emergency load from offsite power].	[18 months]]

(continued)

TSTF-8

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.18	------------------NOTE------------------ This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ -- Verify interval between each sequenced load block is within ± [10% of design interval] for each emergency [and shutdown] load sequencer.	[18 months]
SR 3.8.1.19	------------------NOTES------------------ 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ -- Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; and c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ [10] seconds,	[18 months] (continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.6 (continued)

[Section XI (Ref. 11); however, the design of fuel transfer systems is such that pumps operate automatically or must be started manually in order to maintain an adequate volume of fuel oil in the day [and engine mounted] tanks during or following DG testing. In such a case, a 31 day Frequency is appropriate. Since proper operation of fuel transfer systems is an inherent part of DG OPERABILITY, the Frequency of this SR should be modified to reflect individual designs.]

SR 3.8.1.7

See SR 3.8.1.2.

[SR 3.8.1.8

Transfer of each [4.16 kV ESF bus] power supply from the normal offsite circuit to the alternate offsite circuit demonstrates the OPERABILITY of the alternate circuit distribution network to power the shutdown loads. The [18 month] Frequency of the Surveillance is based on engineering judgment, taking into consideration the unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. Operating experience has shown that these components usually pass the SR when performed at the [18 month] Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

This SR is modified by a Note. The reason for the Note is that, during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~]

SR 3.8.1.9

Each DG is provided with an engine overspeed trip to prevent damage to the engine. Recovery from the transient caused by the loss of a large load could cause diesel engine

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.9 (continued)

overspeed, which, if excessive, might result in a trip of the engine. This Surveillance demonstrates the DG load response characteristics and capability to reject the largest single load without exceeding predetermined voltage and frequency and while maintaining a specified margin to the overspeed trip. [For this unit, the single load for each DG and its horsepower rating is as follows:] This Surveillance may be accomplished by:

a. Tripping the DG output breaker with the DG carrying greater than or equal to its associated single largest post-accident load while paralleled to offsite power, or while solely supplying the bus; or

b. Tripping its associated single largest post-accident load with the DG solely supplying the bus.

As required by IEEE-308 (Ref. 12), the load rejection test is acceptable if the increase in diesel speed does not exceed 75% of the difference between synchronous speed and the overspeed trip setpoint, or 15% above synchronous speed, whichever is lower.

The time, voltage, and frequency tolerances specified in this SR are derived from Regulatory Guide 1.9 (Ref. 3) recommendations for response during load sequence intervals. The 3 seconds specified is equal to 60% of a typical 5 second load sequence interval associated with sequencing of the largest load. The voltage and frequency specified are consistent with the design range of the equipment powered by the DG. SR 3.8.1.9.a corresponds to the maximum frequency excursion, while SR 3.8.1.9.b and SR 3.8.1.9.c are steady state voltage and frequency values to which the system must recover following load rejection. The [18 month] Frequency is consistent with the recommendation of Regulatory Guide 1.108 (Ref. 9).

This SR is modified by two Notes. The reason for Note 1 is that during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~ In order to ensure that the DG is tested under load

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.10 (continued)

In order to ensure that the DG is tested under load conditions that are as close to design basis conditions as possible, testing must be performed using a power factor ≤ [0.9]. This power factor is chosen to be representative of the actual design basis inductive loading that the DG would experience.

The [18 month] Frequency is consistent with the recommendation of Regulatory Guide 1.108 (Ref. 9) and is intended to be consistent with expected fuel cycle lengths.

This SR has been modified by a Note. The reason for the Note is that during operation with the reactor critical, performance of this SR could cause perturbation to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

[Reviewer's Note: The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:

a. Performance of the SR will not render any safety system or component inoperable;

b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems; and

c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.]

SR 3.8.1.11

As required by Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(1), this Surveillance demonstrates the as designed operation of the standby power sources during loss of the offsite source. This test verifies all actions

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.11 (continued)

consistent with manufacturer recommendations. The reason for Note 2 is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

SR 3.8.1.12

This Surveillance demonstrates that the DG automatically starts and achieves the required voltage and frequency within the specified time ([10] seconds) from the design basis actuation signal (LOCA signal) and operates for ≥ 5 minutes. The 5 minute period provides sufficient time to demonstrate stability. SR 3.8.1.12.d and SR 3.8.1.12.e ensure that permanently connected loads and emergency loads are energized from the offsite electrical power system on an ESF signal without loss of offsite power.

The requirement to verify the connection of permanent and autoconnected loads is intended to satisfactorily show the relationship of these loads to the DG loading logic. In certain circumstances, many of these loads cannot actually be connected or loaded without undue hardship or potential for undesired operation. For instance, ECCS injection valves are not desired to be stroked open, or high pressure injection systems are not capable of being operated at full flow, or RHR systems performing a decay heat removal function are not desired to be realigned to the ECCS mode of operation. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The Frequency of [18 months] takes into consideration unit conditions required to perform the Surveillance and is intended to be consistent with the expected fuel cycle lengths. Operating experience has shown that these components usually pass the SR when performed at the [18 month] Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.12 (continued)

This SR is modified by two Notes. The reason for Note 1 is to minimize wear and tear on the DGs during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations. The reason for Note 2 is that during operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

SR 3.8.1.13

This Surveillance demonstrates that DG noncritical protective functions (e.g., high jacket water temperature) are bypassed on a loss of voltage signal concurrent with an ESF actuation test signal, and critical protective functions (engine overspeed, generator differential current, [low lube oil pressure, high crankcase pressure, and start failure relay]) trip the DG to avert substantial damage to the DG unit. The noncritical trips are bypassed during DBAs and provide an alarm on an abnormal engine condition. This alarm provides the operator with sufficient time to react appropriately. The DG availability to mitigate the DBA is more critical than protecting the engine against minor problems that are not immediately detrimental to emergency operation of the DG.

The [18 month] Frequency is based on engineering judgment, taking into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. Operating experience has shown that these components usually pass the SR when performed at the [18 month] Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

The SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required DG from service. ~~Credit may be taken for unplanned events that satisfy this SR.~~

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.14 (continued)

The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(3), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This Surveillance is modified by two Notes. Note 1 states that momentary transients due to changing bus loads do not invalidate this test. Similarly, momentary power factor transients above the power factor limit will not invalidate the test. The reason for Note 2 is that during operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

SR 3.8.1.15

This Surveillance demonstrates that the diesel engine can restart from a hot condition, such as subsequent to shutdown from normal Surveillances, and achieve the required voltage and frequency within [10] seconds. The [10] second time is derived from the requirements of the accident analysis to respond to a design basis large break LOCA. The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(5).

This SR is modified by two Notes. Note 1 ensures that the test is performed with the diesel sufficiently hot. The load band is provided to avoid routine overloading of the DG. Routine overloads may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY. The requirement that the diesel has operated for at least [2] hours at full load conditions prior to performance of this Surveillance is based on manufacturer recommendations for achieving hot conditions. Momentary transients due to changing bus loads do not invalidate this test. Note 2 allows all DG starts to be preceded by an engine prelube period to minimize wear and tear on the diesel during testing.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.1.16

As required by Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(6), this Surveillance ensures that the manual synchronization and automatic load transfer from the DG to the offsite source can be made and the DG can be returned to ready to load status when offsite power is restored. It also ensures that the autostart logic is reset to allow the DG to reload if a subsequent loss of offsite power occurs. The DG is considered to be in ready to load status when the DG is at rated speed and voltage, the output breaker is open and can receive an autoclose signal on bus undervoltage, and the load sequence timers are reset.

The Frequency of [18 months] is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(6), and takes into consideration unit conditions required to perform the Surveillance.

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

SR 3.8.1.17

Demonstration of the test mode override ensures that the DG availability under accident conditions will not be compromised as the result of testing and the DG will automatically reset to ready to load operation if a LOCA actuation signal is received during operation in the test mode. Ready to load operation is defined as the DG running at rated speed and voltage with the DG output breaker open. These provisions for automatic switchover are required by IEEE-308 (Ref. 13), paragraph 6.2.6(2).

The requirement to automatically energize the emergency loads with offsite power is essentially identical to that of SR 3.8.1.12. The intent in the requirement associated with SR 3.8.1.17.b is to show that the emergency loading was not affected by the DG operation in test mode. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the emergency loads to perform these functions is acceptable.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.17 (continued)

This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(8), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

SR 3.8.1.18

Under accident [and loss of offsite power] conditions loads are sequentially connected to the bus by the [automatic load sequencer]. The sequencing logic controls the permissive and starting signals to motor breakers to prevent overloading of the DGs due to high motor starting currents. The [10]% load sequence time interval tolerance ensures that sufficient time exists for the DG to restore frequency and voltage prior to applying the next load and that safety analysis assumptions regarding ESF equipment time delays are not violated. Reference 2 provides a summary of the automatic loading of ESF buses.

The Frequency of [18 months] is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(2), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.19 (continued)

the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations for DGs. The reason for Note 2 is that the performance of the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

SR 3.8.1.20

This Surveillance demonstrates that the DG starting independence has not been compromised. Also, this Surveillance demonstrates that each engine can achieve proper speed within the specified time when the DGs are started simultaneously.

The 10 year Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9).

This SR is modified by a Note. The reason for the Note is to minimize wear on the DG during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations.

Diesel Generator Test Schedule

The DG test schedule (Table 3.8.1-1) implements the recommendations of Revision 3 to Regulatory Guide 1.9 (Ref. 3). The purpose of this test schedule is to provide timely test data to establish a confidence level associated with the goal to maintain DG reliability > 0.95 per demand.

According to Regulatory Guide 1.9, Revision 3 (Ref. 3), each DG should be tested at least once every 31 days. Whenever a DG has experienced 4 or more valid failures in the last 25 valid tests, the maximum time between tests is reduced to 7 days. Four failures in 25 valid tests is a failure rate of 0.16, or the threshold of acceptable DG performance, and

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.4.6	------NOTE------ This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ~~However, credit may be taken for unplanned events that satisfy this SR~~. ------ Verify each battery charger supplies ≥ [400] amps at ≥ [125] V for ≥ [8] hours.	[18 months]
SR 3.8.4.7	------NOTES------ 1. The modified performance discharge test in SR 3.8.4.8 may be performed in lieu of the service test in SR 3.8.4.7 once per 60 months. 2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ~~However, credit may be taken for unplanned events that satisfy this SR~~. ------ Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	[18 months]

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.8	-------------------NOTE------------------- This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ -- Verify battery capacity is ≥ [80]% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	60 months AND 12 months when battery shows degradation or has reached [85]% of expected life with capacity < 100% of manufacturer's rating AND 24 months when battery has reached [85]% of the expected life with capacity ≥ 100% of manufacturer's rating

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.4.6

This SR requires that each battery charger be capable of supplying [400] amps and [125] V for ≥ [8] hours. These requirements are based on the design capacity of the chargers (Ref. 4). According to Regulatory Guide 1.32 (Ref. 10), the battery charger supply is required to be based on the largest combined demands of the various steady state loads and the charging capacity to restore the battery from the design minimum charge state to the fully charged state, irrespective of the status of the unit during these demand occurrences. The minimum required amperes and duration ensures that these requirements can be satisfied.

The Surveillance Frequency is acceptable, given the unit conditions required to perform the test and the other administrative controls existing to ensure adequate charger performance during these [18 month] intervals. In addition, this Frequency is intended to be consistent with expected fuel cycle lengths.

This Surveillance is required to be performed during MODES 5 and 6 since it would require the DC electrical power subsystem to be inoperable during performance of the test.

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would perturb the electrical distribution system and challenge safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

SR 3.8.4.7

A battery service test is a special test of battery capability, as found, to satisfy the design requirements (battery duty cycle) of the DC electrical power system. The discharge rate and test length should correspond to the design duty cycle requirements as specified in Reference 4.

The Surveillance Frequency of [18 months] is consistent with the recommendations of Regulatory Guide 1.32 (Ref. 10) and Regulatory Guide 1.129 (Ref. 11), which state that the battery service test should be performed during refueling operations or at some other outage, with intervals between tests, not to exceed [18 months].

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.7 (continued)

This SR is modified by two Notes. Note 1 allows the performance of a modified performance discharge test in lieu of a service test once per 60 months.

The modified performance discharge test is a simulated duty cycle consisting of just two rates; the one minute rate published for the battery or the largest current load of the duty cycle, followed by the test rate employed for the performance test, both of which envelope the duty cycle of the service test. Since the ampere-hours removed by a rated one minute discharge represents a very small portion of the battery capacity, the test rate can be changed to that for the performance test without compromising the results of the performance discharge test. The battery terminal voltage for the modified performance discharge test should remain above the minimum battery terminal voltage specified in the battery service test for the duration of time equal to that of the service test.

A modified discharge test is a test of the battery capacity and its ability to provide a high rate, short duration load (usually the highest rate of the duty cycle). This will often confirm the battery's ability to meet the critical period of the load duty cycle, in addition to determining its percentage of rated capacity. Initial conditions for the modified performance discharge test should be identical to those specified for a service test.

The reason for Note 2 is that performing the Surveillance would perturb the electrical distribution system and challenge safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

SR 3.8.4.8

A battery performance discharge test is a test of constant current capacity of a battery, normally done in the as found condition, after having been in service, to detect any change in the capacity determined by the acceptance test. The test is intended to determine overall battery degradation due to age and usage.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.8 (continued)

A battery modified performance discharge test is described in the Bases for SR 3.8.4.7. Either the battery performance discharge test or the modified performance discharge test is acceptable for satisfying SR 3.8.4.8; however, only the modified performance discharge test may be used to satisfy SR 3.8.4.8 while satisfying the requirements of SR 3.8.4.7 at the same time.

The acceptance criteria for this Surveillance are consistent with IEEE-450 (Ref. 9) and IEEE-485 (Ref. 5). These references recommend that the battery be replaced if its capacity is below 80% of the manufacturer's rating. A capacity of 80% shows that the battery rate of deterioration is increasing, even if there is ample capacity to meet the load requirements.

The Surveillance Frequency for this test is normally 60 months. If the battery shows degradation, or if the battery has reached 85% of its expected life and capacity is < 100% of the manufacturer's rating, the Surveillance Frequency is reduced to 12 months. However, if the battery shows no degradation but has reached 85% of its expected life, the Surveillance Frequency is only reduced to 24 months for batteries that retain capacity ≥ 100% of the manufacturer's rating. Degradation is indicated, according to IEEE-450 (Ref. 9), when the battery capacity drops by more than 10% relative to its capacity on the previous performance test or when it is ≥ [10%] below the manufacturer's rating. These Frequencies are consistent with the recommendations in IEEE-450 (Ref. 9).

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would perturb the electrical distribution system and challenge safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

REFERENCES

1. 10 CFR 50, Appendix A, GDC 17.
2. Regulatory Guide 1.6, March 10, 1971.
3. IEEE-308-[1978].

(continued)

SUPPLEMENT 1
CONVERSION PACKAGE SECTION 3.1
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure _9_ to Serial: RNP-RA/96-0141.

	Remove Page	Insert Page
a.	Part 1, "Markup of Current Technical Specifications (CTS)"	
	4.1-12	4.1-12
b.	Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
	3 through 8	3 through 8
	-	8a and 8b
c.	Part 3, "No Significant Hazards Consideration (NSHC), And Basis For Categorical Exclusion From 10 CFR 51.22"	
	No Changes	
d.	Part 4, "Markup of NUREG-1431, Revision 1, `Standard Technical Specifications - Westinghouse Plants,' (ISTS)"	
	No Changes	
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	No Changes	
f.	Part 6, "Markup of ISTS Bases"	
	No Changes	
g.	Part 7, "Justification for Differences (JFDs) to ISTS Bases"	
	No Changes	
h.	Part 8, "Proposed HBRSEP, Unit No. 2 ITS"	
	No Changes	
i.	Part 9, "Proposed Bases to HBRSEP, Unit No. 2 ITS"	
	No Changes	
j.	Part 10, "ISTS Generic Changes"	
	No Changes	

Specification 3.1.4

(A1)

ITS

TABLE 4.1-3

FREQUENCIES FOR EQUIPMENT TESTS

(L3) Not fully Inserted

(M11) ≥ 10 Steps; 92 days

		Check	Frequency	Maximum Time Between Tests
[SR 3.1.4.3] 1.	Control Rods	Rod drop times of all full length rods	Each refueling shutdown	NA* (L3)
[SR 3.1.4.2] 2.	Control Rod	Partial movement of all full length rods	Every 2 weeks during reactor critical operations	20 days
3.	Pressurizer Safety Valves	Set point	Each refueling shutdown	NA (See 3.4.10)
4.	Main Steam Safety Valves	Verify each required MSSV lift setpoint per Table 4.1-4 in accordance with the Inservice Testing Program. Following testing, lift setting shall be within +/- 1%.	In accordance with the Inservice Testing Program	NA (See 3.7.1)
5.	Containment Isolation Trip	Functioning	Each refueling shutdown	NA (See 3.6.3, 3.3.2)
6.	Refueling System Interlocks	Functioning	Prior to each refueling shutdown	NA (See 3.9.1)
7.	Service Water System	Functioning	Each refueling shutdown	NA (See 3.7.7)
8.	DELETED			
9.	Primary System Leakage	Evaluate	Daily when reactor coolant system is above cold shutdown condition	NA (See 3.4.13)
10.	Diesel Fuel Supply	Fuel Inventory	Weekly	10 days (See 3.8.3)
11.	DELETED			
12.	Turbine Steam Stop, Control, Reheat Stop, and Interceptor Valves	Closure	Quarterly during power operation and prior to startup	115 days (See 3.7.1)

Add SR 3.1.4.1 (M12)

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 No CTS surveillance requirement (SR) comparable to ITS SR 3.1.1.1 exists. Performance of SR 3.1.1.1 is necessary to periodically verify operation is in compliance with the LCO. The Frequency of 24 hours is based on the generally slow change in required boron concentration and the low probability of an accident occurring without the required SDM. This SR is considered a reasonable verification of the associated requirement. Therefore, the addition of this SR is a more restrictive change and is consistent with NUREG-1431.

M2 CTS 4.9 requires, after normalization, periodic comparison of actual boron concentration to predicted boron values. CTS 4.9 neither specifies when the normalization is required nor the periodicity of the surveillance. ITS SR 3.1.2.1 requires this comparison to be performed prior to entering MODE 1 after initial criticality and every 31 EFPD after 60 EFPD after each fuel loading. The ITS retains the provision for normalization but specifies the normalization is required to be completed prior to exceeding 60 EFPD. Requiring performance prior to entering MODE 1 is necessary as an initial check on core conditions and design calculations at the Beginning of Cycle (BOC). Requiring normalization prior to exceeding 60 EFPD is necessary to prevent operation for a large fraction of the fuel cycle without establishing a benchmark for the design calculations. The required subsequent Frequency of 31 EFPD, following the initial 60 EFPD after entering MODE 1, is necessary to periodically confirm the design calculations. This frequency is acceptable, based on the slow rate of core changes due to fuel depletion and the presence of other indicators for prompt indication of an anomaly. Therefore, the ITS SR 3.1.2.1 is more restrictive and is consistent with NUREG-1431.

M3 A CTS limiting condition for operation (LCO) comparable to ITS LCO 3.1.2 does not exist. ITS LCO 3.1.2 provides for limitations on anomalous reactivity conditions and is applicable in MODES 1 and 2. A CTS action comparable to ITS 3.1.2 Required Actions (RAs) A.1 and A.2 does not exist. ITS 3.1.2 RAs A.1 and A.2 delineate actions to be completed within 72 hours, including re-evaluation of core design and safety analysis, confirmation of acceptability for continued operation and establishment of appropriate operating restrictions and SRs. RA B.1 mandates placing the unit in MODE 3 if RAs A.1 and A.2 and the associated completion times are not met. These additional requirements are necessary to ensure operation remains within the assumptions of the safety analysis as well as ensuring operation is consistent with the core design calculations. The inclusion of this LCO including associated RAs and SRs is considered reasonable to ensure operation within the bounds of the applicable safety analysis. These changes are additional restrictions on plant operation and are consistent with

NUREG-1431.

M4 CTS 3.1.3.1 is a Minimum Conditions for Criticality which is equivalent to ITS MODE 1 and MODE 2 with $K_{eff} \geq 1.0$. For the upper Moderator Temperature Coefficient (MTC) limit, the applicability of ITS 3.1.3 is MODE 1 and MODE 2 with $K_{eff} \geq 1.0$, which is equivalent to CTS. For the lower MTC limit, the applicability of ITS 3.1.3 is MODES 1, 2 and 3. This change adds the applicability for MODE 2 with $K_{eff} < 1.0$ and MODE 3 for the lower MTC limit. The lower MTC limit must be maintained in MODES 2 and 3, in addition to MODE 1, to ensure that cooldown accidents will not violate the assumptions of the accident analysis. The inclusion of this applicability is considered reasonable to ensure operation within the bounds of the applicable safety analysis. These are additional restrictions on plant operation and are consistent with NUREG-1431.

M5 Not Used.

M6 CTS surveillance requirements comparable to ITS SR 3.1.3.1 and SR 3.1.3.2 do not exist. SR 3.1.3.1 is necessary prior to entering MODE 1 in order to demonstrate compliance with the most positive MTC LCO. Meeting the limit prior to entering MODE 1 ensures that the limit will also be met at higher power levels. SR 3.1.3.2 is necessary to verify that the MTC be less negative than the specified value assumed in the most limiting accident analysis for the End of Cycle (EOC) full power conditions. These are additional restrictions on plant operation and are consistent with NUREG-1431.

M7 CTS 3.10.1.5 permits 2 hours to restore the rod to within applicable limits. ITS only permits 1 hour. Restoration within one hour is required to limit local xenon redistribution. The Completion Time of 1 hour gives the operator sufficient time to adjust the rod positions in an orderly manner. This is a more restrictive change and is consistent with NUREG-1431.

M8 With out-of-alignment rods, CTS 3.10.1.5 requires that within 2 hours, either measurement and assessment of hot channel factors or a reduction of power to ≤ 70 percent rated thermal power be completed. ITS requires both reduction of power to less than 70 percent rated thermal power (within 2 hours) and completion of the surveillance of hot channel factors (within 72 hours). Reduction of power to 70% RTP ensures that local Linear Heat Generation Rate (LHGR) increases due to a misaligned RCCA will not cause the core design criteria to be exceeded. Measurement and determination that hot channel factors are within the required limits is required to ensure that operation at 70% RTP with a rod misaligned is not resulting in power distributions that may invalidate safety analysis assumptions at full power. The Completion

Time of 72 hours allows sufficient time to obtain flux maps of the core power distribution using the incore flux mapping system and to calculate $F_Q(Z)$ and $F^N_{\Delta H}$. The inclusion of both of these Required Actions is considered reasonable to ensure operation within the bounds of the applicable safety analysis. This is an additional restriction on plant operation and is consistent with NUREG-1431.

M9 CTS does not include actions comparable to ITS 3.1.4 RAs B.2.1.1, B.2.1.2, B.2.3, B.2.6, C.1, D.1.1, D.1.2 and D.2. With one rod not within alignment limits, RA B.2.1.1 requires verification that SDM is within limits. RA B 2.1.2 requires initiation of boration to restore SDM to within limits. RA B.2.3 requires periodic verification that SDM continues to be met. These requirements are necessary to ensure required SDM is restored and maintained. RA B.2.6 requires re-evaluation of safety analysis results and confirmation that these results remain valid under the current operation conditions. Re-evaluation and confirmation of the current validity of the analysis results is required to ensure continued operation is acceptable. RA C.1 requires the unit be placed in MODE 3, if the Required Action and Associated Completion time of Condition B is not met. This Action is necessary to place the unit in a Condition outside the Applicability of the specification. With more than one rod not within alignment limits, RAs D.1.1 and D.1.2 require either verification or restoration of SDM respectively. RAs D.2 requires the unit be placed in MODE 3 within 6 hours. Operation with more than one misaligned rod is not permitted. RAs D.1.1 and D.1.2 are necessary to verify or restore SDM. RA D.2 is necessary to place the unit in a MODE outside the applicability of the specification. The inclusion of these RAs is considered reasonable to ensure operation within the bounds of the applicable safety analysis. These are additional restrictions on plant operation and are consistent with NUREG-1431.

M10 CTS 3.10.6.2 permits operation with one inoperable rod. This specification is not retained in ITS. This change is necessary to ensure operation remains within the bounds of the applicable safety analysis. This is an additional restriction on plant operation and is consistent with NUREG-1431.

M11 CTS Table 4.1-3, Item 2 specifies partial control rod movement. ITS SR 3.1.4.2 mandates ≥ 10 steps in either direction. Since minimum requirements for rod movement are being added, this change is more restrictive. Requiring a minimum rod movement is necessary to provide increased confidence the rod remains OPERABLE without exceeding alignment limits. Movement of each rod 10 steps will not cause radial or axial power tilts, or oscillations to occur. This is an additional restriction on plant operation and is consistent with NUREG-1431.

M12 A CTS surveillance requirement comparable to ITS SR 3.1.4.1 does not exist. SR 3.1.4.1 requires periodic verification that individual rods are within alignment limits. This is necessary to provide periodic confirmation the unit is operated with the requirements of the LCO. This SR is considered a reasonable verification of the associated requirement. This is an additional restriction on plant operation and is consistent with NUREG-1431.

M13 CTS 3.10.1.2 is applicable when the reactor is critical. ITS 3.1.5 is applicable in MODE 1 and MODE 2 with any control bank not fully inserted. The inclusion of this additional applicability is required to ensure operation is within the bounds of the applicable safety analysis. This is an additional restriction on plant operation and is consistent with NUREG-1431.

M14 CTS required actions comparable to ITS 3.1.5 RAs A.1.1, A.1.2, A.2 and B.1 do not exist. Lacking specified actions, failure to satisfy CTS 3.10.1.2 requires compliance with CTS 3.0. In this case CTS 3.0 requires hot shutdown in 8 hours. ITS 3.1.5 RAs A.1.1, A.1.2, A.2 and B.1 mandate actions which can require the unit be placed in Hot Shutdown in 8 hours, the same as CTS 3.0. RA A.1.1 require verification that SDM is within limits within one hour. RA A.1.2 requires initiation of boration within one hour to restore SDM to within limits. RA A.2 requires the shutdown banks be restored to within limits within 2 hours. Requiring either verification of SDM or initiation of action to restore SDM is necessary since available SDM may be significantly reduced. Requiring restoration of the shutdown banks to within limits within 2 hours is necessary to prevent remaining in an unacceptable condition for an extended period of time. If any Required Action and Associated Completion Time are not met, RA B.2 requires the unit be placed in MODE 3. The requirement to place the unit in MODE 3 is necessary to place the unit in a MODE outside the Applicability of the specification. These additional actions are more restrictive on plant operation and are consistent with NUREG-1431.

M15 A CTS surveillance comparable to ITS SR 3.1.5.1 does not exist. SR 3.1.5.1 requires periodic verification that the shutdown banks are within specified limits. This is necessary to periodically confirm that operation is within the limits of the LCO. This SR is considered a reasonable verification of the associated requirement. The addition of ITS SR 3.1.5.1 is an additional restriction on plant operation and is consistent with NUREG-1431.

M16 CTS 3.10.1.3 does not impose explicit restrictions on sequence and overlap. These restrictions are explicitly incorporated in ITS LCO 3.1.6. The inclusion of these restrictions is required to ensure operation within the bounds of the applicable safety analysis. These

are additional restrictions on plant operation and are consistent with NUREG-1431.

M17 CTS required actions comparable to ITS 3.1.6 RAs A.1.1, A.1.2, B.1.1, B.1.2, and B.2 do not exist. With control bank insertion limits not met, RA A.1.1 require verification that SDM is within limits within one hour. RA A.1.2 requires initiation of boration within one hour to restore SDM to within limits. RA A.2 requires the control banks be restored to within limits within 2 hours. Requiring either verification of SDM or initiation of action to restore SDM is necessary since available SDM may be significantly reduced. Requiring restoration of the control banks to within limits within 2 hours is necessary to prevent remaining in an unacceptable condition for an extended period of time. With control bank insertion limits not met, RA B.1.1 require verification that SDM is within limits within one hour. RA B.1.2 requires initiation of boration within one hour to restore SDM to within limits. Requiring either verification of SDM or initiation of action to restore SDM is necessary since available SDM may be significantly reduced. RA B.2 requires the sequence and overlap be restored to within limits within 2 hours. Requiring restoration of the sequence and overlap to within limits within 2 hours is necessary to prevent remaining in an unacceptable condition for an extended period of time. If any Required Action and Associated Completion Time are not met, RA C.1 requires the unit be placed in MODE 3. The requirement to place the unit in MODE 3 is necessary to place the unit in a MODE outside the Applicability of the specification. The inclusion of these RAs is considered reasonable to ensure operation within the bounds of the applicable safety analysis. These are additional restrictions on plant operation and are consistent with NUREG-1431.

M18 CTS surveillance requirements comparable to ITS SRs 3.1.6.1, 3.1.6.2 and 3.1.6.3 do not exist. SR 3.1.6.1 requires verification that critical bank position is within limits. This Surveillance is required to ensure that the reactor does not achieve criticality with the control banks below their insertion limits. SR 3.1.6.2 requires periodic verification that control bank insertion is within limits. This SR is necessary to detect control banks which may be approaching there insertion limits. SR 3.1.6.3 requires periodic verification that sequence and overlap are within limits for control banks not fully withdrawn from the core. This SR is necessary to detect control banks which may be outside sequence and overlap limits. These SRs are considered a reasonable verification of the associated requirements. The addition of these SRs is an additional restriction on plant operation and is consistent with NUREG-1431.

M19 A CTS comparable to ITS Specification 3.1.7 does not exist. Specification 3.7.1 provides an LCO, Applicability, Actions and an SR

for rod position indication. The addition of a specification for rod position indication is required since rod position indications are necessary to ensure operators have sufficient information to operate the unit within the bounds of the safety analysis. The addition of ITS specification 3.1.7 is an additional restriction on plant operation and is consistent with NUREG-1431.

M20 CTS required actions comparable to ITS 3.1.8 RAs A.1, A.2, B.1, C.1 and D.1 do not exist. Lacking specified actions, failure to satisfy CTS 3.1.3.1, 3.10.1.2, 3.10.1.3 or 3.10.1.5 requires compliance with CTS 3.0. CTS 3.0 requires hot shutdown in 8 hours and cold shutdown in 30 hours. ITS 3.1.8 RAs A.1, A.2, B.1, C.1 and D.1 mandate actions in shorter times (i.e., either immediately, 15 minutes or 1 hour). When operating in a physics test exception and SDM is not within limits, RA A.1 requires initiation within 15 minutes of boration to restore SDM within limits and RA A.2 requires suspending the physics test exception within 1 hour. These Required Actions are necessary to require prompt restoration of SDM to within limits as well as promptly restore each applicable LCO to within specification. When operating in a physics test exception and THERMAL POWER is not within limits, RA B.1 requires immediately opening the reactor trip breakers. Opening the reactor trip breakers is necessary to prevent operating the reactor beyond its design limits. When operating in a physics test exception and lowest loop average is not within limits, RA C.1 requires restoring lowest loop average temperature within limits within 15 minutes. This action is necessary to prevent the unit from remaining in a unacceptable condition for an extended period of time. These are additional restrictions on plant operation and are consistent with NUREG-1431.

M21 CTS surveillance requirements comparable to ITS SRs 3.1.8.1, 3.1.8.2, and 3.1.8.3 do not exist. SR 3.1.8.1 requires periodic verification that lowest loop average temperature is ≥ 530°F. SR 3.1.8.2 requires periodic verification that SDM is within limits. SR 3.1.8.3 requires periodic verification that THERMAL POWER is ≤ 5% RTP. These SRs are necessary to periodically confirm unit operation is within the limits of the LCO. These additional SRs are additional restrictions on plant operation and are consistent with NUREG-1431.

M22 Physics tests exceptions included in CTS 3.1.3.1, 3.10.1.2, 3.10.1.3 and 3.10.1.5 do not specify any additional restriction when applying the exception. ITS 3.1.8 imposes additional requirements regarding RCS loop temperatures, THERMAL POWER and SDM requirements. The inclusion of these additional restrictions is necessary to ensure operation is within the bounds of the applicable safety analysis. The adoption of these requirements is an additional restriction on plant operation and is consistent with NUREG-1431.

M23 CTS 3.10.1.6 provides a SDM exception similar to that provided by ISTS 3.1.11. It is not necessary to retain this SDM exception since the measurement technique necessitating the SDM exception is no longer used. The elimination of the SDM exception is an additional restriction on plant operation and is consistent with NUREG-1431.

M24 CTS specifies measurement of control rod timing ". . . from the beginning of rod motion until dashpot entry." ITS specifies ". . . from the decay of stationary gripper coil voltages." The inclusion of the time from the beginning of stationary gripper coil voltage decay is necessary to ensure timing the complete rod trip sequence. This is an additional restriction on plant operation and is consistent with the NUREG-1431.

M25 CTS 3.10.6.3 establishes the action for one control rod inoperable to include changing the boron concentration to obtain an appropriate SDM but does not specify a time limit. RA A.1.1 require verification that SDM is within limits within one hour. RA A.1.2 requires initiation of boration within one hour to restore SDM to within limits. Requiring either verification of SDM or initiation of action to restore SDM is necessary since available SDM may be significantly reduced. The one hour time limit is necessary to promptly require verification or restoration of SDM to within limits. If any Required Action and Completion Time is not met RA A.2 requires the plant be placed in MODE 3 in 6 hours. This Action is necessary to place the unit in a MODE outside the Applicability of the specification. ITS requirement of placing the unit in a MODE outside the Applicability within 6 hours is more restrictive than CTS 3.0 which allows 8 hours to be outside the MODE of applicability. These changes are more restrictive and are consistent with NUREG 1431.

M26 CTS 3.10.4.1 establishes the requirement for control rod drop times but does not establish a related action if the drop times are not met. In this case Specification 3.0 would be entered. ITS 3.1.4 Condition includes control rod drop times not met and the associated Actions and Completion Times apply. These actions require that either the SDM must be verified to be within limit or the boron concentration must be restored within the limit specified in the COLR, within one hour. Requiring either verification of SDM or initiation of action to restore SDM is necessary since available SDM may be significantly reduced. The one hour time limit is necessary to promptly require verification or restoration of SDM to within limits. This change is necessary to establish consistency with other similar shutdown requirements stated in other specifications and is based on operating experience which indicates the times to place the unit in the specified MODE is reasonable. The time limit specified to reach MODE 3 permits the shutdown to proceed in a controlled and orderly manner that is within

the capabilities of the unit, assuming that only the minimum required equipment is OPERABLE. This reduces the potential for a plant upset that could challenge safety systems under conditions to which this Specification applies. These changes are more restrictive and are consistent with NUREG 1431.

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA1 CTS Specifications 3.10.8.1, 3.10.8.2, and Figure 3.10-2 provide required shutdown margin values. CTS Specification 3.10.1.4 requires control rod insertion limits be adjusted to the end-of-core values as provided in the COLR at 50 percent of the cycle. These details are not retained in the ITS and are relocated to licensee controlled documents.

The details associated with the involved Specification are not required to be in the ITS to provide adequate protection of the public health and safety because the ITS still retains the requirement for compliance with the limits, and ITS Section 5.6 specifies the scope of the limits contained in the COLR and mandates NRC approval of the analytical methodology. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA2 CTS 3.10.1.3 requires that the reactor be placed in hot shutdown, and specifies that this be accomplished, "using normal operating procedures." This detail, specifying the manner in which to achieve hot shutdown, is relocated to licensee controlled documents.

The details associated with the involved Specification are not required to be in the ITS to provide adequate protection of the public health and safety because the ITS still retains the requirement for compliance with the Action. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

SUPPLEMENT 1
CONVERSION PACKAGE SECTION 3.2
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 10 to Serial: RNP-RA/96-0141.

	Remove Page	Insert Page
a.	Part 1, "Markup of Current Technical Specifications (CTS)"	
	No Changes	
b.	Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
	1 through 24	1 through 24
	-	
c.	Part 3, "No Significant Hazards Consideration (NSHC), And Basis For Categorical Exclusion From 10 CFR 51.22"	
	No Changes	
d.	Part 4, "Markup of NUREG-1431, Revision 1, `Standard Technical Specifications - Westinghouse Plants,' (ISTS)"	
	3.2-4, 3.2-9, 3.2-18 and 3.2-20	3.2-4, 3.2-9, 3.2-18 and 3.2-20
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	3	3
f.	Part 6, "Markup of ISTS Bases"	
	B 3.2-15, B 3.2-25, B 3.2-47 and 3.2-48	B 3.2-15, B3.2-25, B3.2-47 and 3.2-48
g.	Part 7, "Justification for Differences (JFDs) to ISTS Bases"	
	3 and 4	3 and 4
h.	Part 8, "Proposed HBRSEP, Unit No. 2 ITS"	
	3.2-1, 3.2-4, 3.2-12 and 3.2-14	3.2-1, 3.2-4, 3.2-12 and 3.2-14
i.	Part 9, "Proposed Bases to HBRSEP, Unit No. 2 ITS"	
	B3.2-5, B 3.2-14 and 3.2-32	B 3.2-5, B 3.2-14 and 3.2-32
j.	Part 10, "ISTS Generic Changes"	
	Cover Page	Cover Page
	-	TSTF-95 (8 pages)
	-	TSTS-109 (6 pages)

ADMINISTRATIVE CHANGES

A1 In the conversion of the H. B. Robinson Steam Electric Plant (HBRSEP), Unit 2 Current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS) certain wording preferences or conventions are adopted which do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make ITS consistent with the conventions in the Standard Technical Specifications, Westinghouse Plants, NUREG-1431, Revision 1 (i.e., Improved Standard Technical Specifications (ISTS)). These changes are administrative, and have no adverse impact on safety.

A2 CTS Specification 3.10.2.1.1 includes the term, "effective full power month," which is changed to 31 Effective Full Power Days (EFPDs) in the ITS to be consistent with NUREG-1431. Both the CTS and ITS terms are equivalent. This change is administrative, and has no adverse impact on safety.

A3 CTS Specification 3.10.2.1.1 applies to both hot channel factors $F_Q(Z)$ and $F_{\Delta H}$. CTS Specification 3.10.2.1.1 is retained in ITS as two Limiting Conditions for Operations (LCOs), which are, ITS Specification 3.2.1, "Heat Flux Hot Channel Factor ($F_Q(Z)$)" and ITS Specification 3.2.2, "Nuclear Enthalpy Rise Hot Channel Factor ($F^N_{\Delta H}$)." As such the term "hot channel factors" and $F_Q(Z)$ in CTS Specification 3.10.2.1.1 is retained as $F^V_Q(Z)$ in ITS Specification 3.2.1 and as $F^N_{\Delta H}$ in ITS Specification 3.2.2. This change is administrative, and has no adverse impact on safety.

A4 CTS Specification 3.10.2.1.1, second paragraph, which contains a required action for the condition where the measured F_Q exceeds the specified limits, is not retained in the ITS. This required action contains a method for reducing power that is less restrictive than CTS Specification 3.10.2.2.1.b, which provides an alternative method that is more conservative than CTS Specification 3.10.2.1.1, second paragraph. CTS Specification 3.10.2.2.1.b requires that the reactor power be reduced by 1% for every 1% that $F_Q(Z)$ exceeds its limits rather than limiting reactor power to the fraction expressed in CTS Specification 3.10.2.1.1 as $F_Q(Z)_{limit}/F^V_Q(Z)_{actual}$. The CTS Specification 3.10.2.2.1.b method of determining the reduced power limitation becomes more conservative than CTS Specification 3.10.2.1.1 as the deviation between the F_Q limits and the measured F_Q increases. CTS Specification 3.10.2.2.1.b is also consistent with NUREG-1431, and is adopted in the ITS. Therefore, this change is administrative, and has no adverse impact on safety.

A5 CTS Specification 3.10.2.2, first sentence, is redundant to, and refers to, CTS Specification 3.10.2.1, and is not retained in ITS. This change is administrative, and has no adverse impact on safety.

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A6 CTS Specifications 3.10.2.2.1.b requires that reactor power be reduced by the expression:

$$[[\text{ max. over } Z \text{ of } (F_Q(Z) \times V(Z)) / ((F_Q^{RTP}(Z)/P) \times K(Z))] - 1] \times 100\%$$

when $F_Q^V(Z)$ exceeds the limit. In the bases to ITS, the expression $F_Q(Z) \times V(Z)$ is defined as $F_Q^V(Z)$. In the CORE OPERATING LIMITS REPORT (COLR), the limits for $F_Q^V(Z)$ are defined as $(F_Q^{RTP}(Z)/P) \times K(Z)$. The above expression then reduces to a mathematical equivalent to converting the fraction that $F_Q^V(Z)$ exceeds the limit into a percent RATED THERMAL POWER (RTP). This change is administrative, and has no adverse impact on safety.

A7 CTS Specification 3.10.2.2.1.b, which requires that reactor power be reduced when the measured F_Q exceeds the F_Q limits is retained in ITS Specification 3.2.1 as Required Action A.1.2. CTS Specification 3.10.2.2.1.b also states that the action applies to the ". . . middle axial 80% of the core." This requirement is not retained in ITS, because the axial offset methodology only applies to the middle 80% of the core, as described in the Bases to ITS Specification 3.2.1. This change is therefore administrative, and has no adverse impact on safety.

A8 The CTS Bases are not retained in the ITS, but are replaced in their entirety. The ITS includes significantly expanded and improved Bases. The Bases do not define or impose any specific requirements but serve to explain, clarify and document the reasons (i.e., Bases) for the associated Specification. The Bases are not part of the Technical Specifications required by 10 CFR 50.36. This change is administrative, and has no adverse impact on safety.

A9 CTS Specification 3.10.2.6, which contains the Required Action to return the AXIAL FLUX DIFFERENCE (AFD) to the target band immediately if the AFD is outside of the target band, is modified in the ITS 3.2.3 Required Action A.1 to require a Completion Time of 15 minutes to restore AFD to within the target band. ITS Section 1.3, "Completion Times," states that if "Immediately" is used as a Completion Time, the Required Action should be pursued without delay and in a controlled manner. The Completion time of 15 minutes for accomplishing ITS 3.2.3 Required Action A.1 is a reasonable interpretation of the CTS Completion Time of "immediately." Therefore, this change to CTS Specification 3.10.2.6 is administrative, and has no adverse impact on safety.

A10 CTS Specification 3.10.2.7.a, which contains the Required Action to immediately reduce reactor power to < 50% rated power if cumulative time exceeds one (1) hour if the AFD is outside of the target band, is

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modified in the ITS 3.2.3 Required Action C.1 to require a Completion Time of 30 minutes to reduce THERMAL POWER to < 50% RTP. ITS Section 1.3, "Completion Times," states that if "Immediately" is used as a Completion Time, the Required Action should be pursued without delay and in a controlled manner. The ITS Completion time of 30 minutes for accomplishing Required Action C.1 is a reasonable interpretation of the CTS Completion Time of "immediately," when considering the operating experience associated with reduction in THERMAL POWER from 100% RTP to less than 50% RTP. Therefore, this change to CTS Specification 3.10.2.7.a is administrative, and has no adverse impact on safety.

A11 CTS Specifications 3.10.2.7.b contains requirements that restrict an increase in reactor power above rated power levels in which the particular specifications for AFD apply unless the specifications are met. This requirement duplicates that of CTS 3.10.2.5 which is retained as ITS LCO 3.2.3.a and therefore is not retained in ITS. This change is administrative, and has no adverse impact on safety.

A12 CTS Specification 3.10.2.8.b, which requires the accumulation of penalty deviation time for AFD outside of the target band at power levels less than or equal to 50% reactor power, provides that penalty deviation time be accumulated at one half of the rate that penalty deviation time is accumulated when the reactor is greater than 50% rated power. This requirement is retained in ITS Note to LCO 3.2.3.c, but is completely rewritten for clarity and states that penalty deviation time ". . . shall be accumulated on the basis of a 0.5 minute penalty deviation for each 1 minute of power operation with AFD outside of the target band." CTS Specification 3.10.2.8.b states that operation above 50% reactor power is allowed when ". . . the indicated axial flux difference not being outside its target band for more than two hours (cumulative) out of the preceding 24-hour period. One-half of the time the indicated AFD is out of its target band up to 50 percent of rated power is to be counted as contributing to the one-hour cumulative maximum the flux difference may deviate from its target band at a power level less than or equal to 90 percent of rated power. . ." The CTS statement is identical in meaning to the ITS Note to LCO 3.2.3.c. When applying the Note to LCO 3.2.3.c to the stated CTS requirement, cumulative penalty hours will add up to a total of one (1) hour for each two (2) hours below 50% RTP. Therefore, this change is administrative, and has no adverse impact on safety.

A13 CTS Specification 3.10.2.7.a, which allows the indicated AFD to deviate from its target band for a maximum of one hour (cumulative) in any 24-hour period, is modified in the ITS to add a Note to LCO 3.2.3.b that clarifies the requirement for cumulative penalty time. This change clarifies that cumulative penalty time is accumulated in increments of

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one minute. Since this change provides clarification only and does not add requirements, this change is administrative, and has no adverse impact on safety.

A14 CTS Specification 3.10.2.7.a, which requires that power be reduced to no greater than 50% rated power, when cumulative penalty time exceeds one hour, is revised in ITS 3.2.3 Required Action C.1 to include a Note to Condition C that Required Action C.1 must be completed whenever Condition C is entered. The CTS does not include ITS LCO 3.0.2, which permits exiting from a Required Action if the LCO is met or no longer applicable prior to the expiration of the specified Completion Time. Hence, the CTS also requires that the required action be completed whenever the Specification requirement is entered. Since the addition of this note only provides clarification with regard to ITS LCO 3.0.2, this change adds no requirements, is administrative, and has no adverse impact on safety.

A15 CTS Specification 3.10.2.10, which requires that alarms shall be normally used to indicate non-conformance with AFD requirements, and if the AFD monitor alarms are out of service, the AFD be logged. This surveillance is retained in ITS and is modified by a Note in ITS Surveillance Requirement (SR) 3.2.3.2 to clarify that logged values should be assumed to exist during the preceding time interval, and by a Note to the SR 3.2.3.2 Frequency that the SR is only required to be performed if the AFD monitor alarm is inoperable. The Note to SR 3.2.3.2 clarifies that the LCO is satisfied for time periods that AFD alarms are operable and not in alarm. This Note is equivalent in meaning to the CTS requirement that alarms ". . . shall normally be used. . ." The Note to SR 3.2.3.2 Frequency clarifies that the LCO is satisfied for the same time periods that AFD alarms are operable and not in alarm, without performance of the SR. This Note is equivalent in meaning to the CTS requirement to log the AFD when the alarms are out of service. Because this change adds clarification and does not add or relax requirements, this change is administrative, and has no adverse impact on safety.

A16 CTS Specification 3.10.2.11, first sentence, which requires that the AFD be determined in conjunction with the measurement of F_Q is not separately retained in the ITS. The first sentence duplicates the requirements of CTS Specification 3.10.2.3 and CTS Specification 3.10.2.3 is retained in the ITS as SR 3.2.3.3. Therefore, the deletion of this duplicate requirement is administrative, and has no adverse impact on safety.

A17 CTS Specification 3.10.2.2.2, which defines the Allowable Power Level (APL) as a function of $F_Q(Z)$ and $F_Q^V(Z)$, is retained in the ITS as a note

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to LCO 3.2.3. APL reduces the allowable AFD target as a function of RTP, and therefore is required to ensure that the deviation from target flux difference is within the acceptable target band. The expression $[F_Q(Z) \times V(Z)]$ is simplified to the equivalent variable expression $F_Q^V(Z)$, which is also defined in the ITS bases. Because this change does not add or reduce requirements, this change is administrative, and has no adverse impact on safety.

A18 CTS Specification 3.10.2.1.1, which requires that power distribution maps using the moveable detector be made to confirm the target AFD is retained in the ITS and restated to "Determine by measurement the target flux difference of each OPERABLE excore channel." The ITS requirement is identical in meaning to the CTS Specification, with the exception that the CTS is silent with respect to whether the AFD is required or not for an inoperable excore channel. Since the target flux difference cannot be determined for inoperable excore channels, this change is administrative, and has no adverse impact on safety.

A19 CTS Specification 3.10.3.1.a, which requires that core power and power range high flux setpoint be reduced when the QUADRANT POWER TILT RATIO (QPTR) is in excess of the limit, is retained in the ITS with the term "rated values" clarified to be "rated thermal power values" to clarify that it is a reduction in rated thermal power that is required when the QPTR limit is exceeded. This is an administrative change, and has no adverse impact on safety.

A20 CTS Specification 1.8, which states that three inservice excore detectors "are" used to determine quadrant power tilt when one is out of service, is revised in ITS SR 3.2.4.1, Note 1, to state that the three remaining power range channels "can be" used for calculating the QPTR. The CTS contains no specific SR Applicability section, and consequently, CTS requirements for surveillance of QPTR when one excore detector is inoperable uses the descriptive verb "are" when describing the surveillance requirement. The ITS includes SR 3.0.1 which, in combination with SR 3.2.4.1 and Note 1, and the ITS definition of QPTR, prohibits determination of QPTR utilizing excore detectors unless three or four excore detectors are OPERABLE. Therefore, the change from "are" to "can be" is administrative, and has no adverse impact on safety.

A21 The footnote to CTS Specifications 3.10.2.3 and 3.10.2.6, providing a reference for Allowable Power Level (APL) is not retained in ITS. ITS LCO 3.2.3.b, Note 2 adequately defines APL for LCO 3.2.3. This is an administrative change, and has no adverse impact on safety.

A22 CTS Specification 3.10.2.2.2 is revised to add descriptive information for Allowable Power Level (APL) and is retained in ITS LCO 3.2.3.b, Note

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2. This is an administrative change, and has no adverse impact on safety.

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M1 CTS Specification 3.10.2.1, which excludes applicability for maintaining F_Q within limits during physics testing, is not retained in ITS. ISTS Specification 3.2.1, "Heat Flux Hot Channel Factor ($F_Q(Z)$) (F_Q Methodology)," does not allow a physics test exception to F_Q limits. The F_Q limits are applicable at all times when the reactor is at power. There are no physics tests performed that require an exception to the F_Q limits. Additionally, since limits on $F_Q(Z)$ ensure that the value of the initial total peaking factor assumed in the accident analyses remains valid, a physics test exception to the F_Q limits is inappropriate. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M2 The CTS is revised to adopt the Required Actions A.1, A.4 and B.1 from ISTS Specification 3.2.1, "Heat Flux Hot Channel Factor ($F_Q(Z)$) (F_Q Methodology)," as ITS 3.2.1 Required Actions A.2.1, A.2.4 and B.1 in the ITS to ensure that appropriate additional actions are taken when ($F_Q(Z)$ is not within the required limits. Reducing THERMAL POWER by ≥ 1% RTP for each 1% by which $F_Q^V(Z)$ exceeds its limit, in accordance with Required Action A.2.1, maintains an acceptable absolute power density. The Completion Time of 30 minutes provides an acceptable time to reduce power in an orderly manner and without allowing the plant to remain in an unacceptable condition for an extended period of time. Verification that $F_Q^V(Z)$ has been restored to within its limit, by performing SR 3.2.1.1 prior to increasing THERMAL POWER above the limit imposed by Required Action A.2.1, as required by Required Action A.2.4, ensures that core conditions during operation at higher power levels are consistent with safety analyses assumptions. If Required Actions of Condition A are not met within their associated Completion Times, Required Action B.1 requires the plant be placed in a mode or condition in which the LCO requirements are not applicable. The allowed Completion Time of Required Action B.1 is reasonable based on operating experience regarding the amount of time it takes to reach MODE 2 from full power operation in an orderly manner and without challenging plant systems.

Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

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M3 CTS Specification 3.10.2.1.1, which requires that power distribution maps using the movable detector system be made to confirm that the F_Q limits are satisfied following initial loading or upon achieving equilibrium conditions after exceeding by 10% or more of RTP, is retained in ITS as a general Note to the Surveillance Requirements, and in ITS SR 3.2.1.1 has the Frequency changed to refueling interval and prior to exceeding 75% rated power. An additional restriction is imposed in the ITS to perform SR 3.2.1.1 within 12 hours of achieving equilibrium conditions after exceeding by 10% or more of rated power. Performing the Surveillance in MODE 1 prior to exceeding 75% RTP ensures that the $F_Q(Z)$ limit is met when RTP is achieved, because peaking factors are generally decreased as power level is increased. Verifying $F_Q(Z)$ at power levels ≥ 10% RTP above the THERMAL POWER of its last verification, 12 hours after achieving equilibrium conditions, ensures that $F_Q(Z)$ is within its limit at higher power levels. This change imposes more restrictive requirements, and has no adverse impact on safety.

M4 CTS Specification 3.10.2.2.1.a, which requires that the reactor core be placed in an equilibrium condition where the Heat Flux Hot Channel Factor is satisfied and reestablish the target axial flux difference, is retained and restated in ITS 3.2.3 Required Action A.1. The CTS Required Action, as restated in ITS Required Action A.1, allows the option of reducing the target axial flux band to the ±3% band in order to obtain a lower V(Z) penalty. By restricting operation to the ±3% band rather than the ±5% band, V(Z) is reduced by approximately 3% resulting in a lower $F_Q^V(Z)$. With a lower V(Z) penalty, $F_Q^V(Z)$ may return to within limits without a power reduction. The option provided by Required Action A.1 is consistent with the PDC-3 axial offset control methodology used by Siemens Power Corporation for calculating cycle specific hot channel factor limits (Ref. 1). Because Required Action A.1 imposes the same requirement as CTS 3.10.2.2.1.a, this aspect of the change is administrative.

Also, ITS 3.2.1 Required Action A.1 is revised to include a completion time of 15 minutes for achieving the more restrictive target flux band, rather than reestablish the existing target flux band without a required completion time as allowed in the CTS. The Completion Time of 15 minutes provides an acceptable time to reevaluate $F_Q^V(Z)$ within the more restrictive target band to determine if $F_Q^V(Z)$ remains within limits. Since this change imposes the new requirement of a completion time to achieve a more restrictive target band, this change is more restrictive and has no adverse impact on safety.

M5 CTS Specification 3.10.2.2.1.b, which requires that reactor power be reduced if F_Q is not within limits, is retained in ITS Specification

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3.2.1 Required Action A.2.1, with the additional requirement of a Completion Time of 30 minutes. The CTS does not impose a required Completion Time. The Completion Time of 30 minutes provides an acceptable time to reduce power in an orderly manner and without allowing the plant to remain in an unacceptable condition for an extended period of time. Since this change imposes the new requirement of a completion time to reduce THERMAL POWER, it is more restrictive and has no adverse impact on safety.

M6 CTS Specifications 3.10.2.2.2 defines an APL that permits operation slightly above reduced power levels that are required when hot channel factors, AFD, and QPTR are outside the required limits. Increasing power to the APL requires that the Axial Power Distribution Monitoring System (APDMS) be initiated. This provision in CTS is not retained in ITS. As a result, the ITS Required Actions for reducing power in response to exceeding power distribution limits will be followed without any provision for increasing power to above the ITS Required Action THERMAL POWER levels. Consequently, this change is more restrictive, and has no adverse impact on safety.

In conjunction with this more restrictive change, CTS Specification 4.11, which contains the surveillance requirements for the APDMS, is not retained in ITS. The APDMS is only required to be initiated to support THERMAL POWER levels above those contained in the CTS required actions.

Therefore, these changes are more restrictive, and have no adverse impact on safety.

M7 CTS Specification 3.10.2.1, which excludes applicability for maintaining $F_{\Delta H}$ within limits during physics testing, is not retained in ITS. ISTS Specification 3.2.2, "Nuclear Enthalpy Rise Hot Channel Factor ($F^N_{\Delta H}$)," does not allow a physics test exception to $F_{\Delta H}$ limits. The $F_{\Delta H}$ limits are applicable at all times when the reactor is at power. There are no physics tests performed that require an exception to the $F_{\Delta H}$ limits. Additionally, since the limits on $F^N_{\Delta H}$ ensure that the DNB design basis is met, a physics test exception to the $F^N_{\Delta H}$ limits is inappropriate. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M8 CTS Specification 3.10.2.1.1, which requires that the enthalpy rise hot channel factor, $F_{\Delta H}$, be determined following initial core loading, has the Frequency changed in ITS SR 3.2.2.1 to refueling interval and prior to exceeding 75% RTP. As a result, a limit on THERMAL POWER is imposed for the initial performance of SR 3.2.2.1 following a refueling outage. This requirement ensures that $F^N_{\Delta H}$ limits are met at the beginning of

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each fuel cycle. This change imposes more restrictive requirements, and has no adverse impact on safety.

M9 CTS Specification 3.10.2.1.1, second paragraph, requires that the reactor power be reduced in the event that $F_{\Delta H}$ is not within limits. CTS Specification 3.10.2.1.1, second paragraph, is retained in ITS 3.2.2 as Required Actions A.1.1 and A.1.2. No completion time is required in the CTS for the required action. A Completion Time of 4 hours is imposed in the ITS for Required Action A.1.1 and A.1.2.1 A Completion Time of 72 hours is imposed for Required Action A.1.2.2. The allowed Completion Times provide an acceptable time to restore $F^N_{\Delta H}$ to within its limits without allowing the plant to remain in an unacceptable condition for an extended period of time. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M10 CTS Specification 3.10.2.1.1, second paragraph, includes the requirement that reactor power be limited to the fraction of RTP equal to $F_{\Delta H limit}/F_{\Delta H actual}$, and that the high neutron flux setpoint be reduced by the same ratio. ITS 3.2.2 Required Action A.1.2 requires that THERMAL POWER be reduced to less than 50% RTP, and that the Power Range Neutron Flux high setpoint be reduced to ≤ 55% RTP. The ITS requirement to reduce to below 50% RTP is more restrictive for values of $F_{\Delta H}$ in excess of the limits up to twice the required limits. Since the Surveillance Frequency is sufficiently short that any $F_{\Delta H}$ measurement in excess of limits is reasonably assured to be less than twice the required limits, this change is considered more restrictive, and has no adverse impact on safety. The more restrictive requirement was taken in ITS 3.2.2 Required Action A.1.2 to be consistent with ISTS. In addition, no completion time is required in the CTS for the setpoint reduction. A completion time of 72 hours is imposed in the ITS for Required Action A.1.2.2. The allowed Completion Time of 72 hours to reset the trip setpoints per Required Action A.1.2.2 recognizes that, once power is reduced, the safety analysis assumptions are satisfied and there is no urgent need to reduce the trip setpoints. This is a sensitive operation that may inadvertently trip the Reactor Protection System. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M11 The CTS is revised in the ITS to adopt a Note to Condition A, Required Actions A.1.2.1, A.2, A.3 and Note, and B.1, from ISTS 3.2.2, "Nuclear Enthalpy Rise Hot Channel Factor ($F^N_{\Delta H}$)," when $F^N_{\Delta H}$ is not within limits. Reducing RTP to < 50% RTP increases the DNB margin and does not likely cause the DNBR limit to be violated in steady state operation. The reduction in trip setpoints ensures that continuing operation remains at an acceptable low power level with adequate DNBR margin. The allowed

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Completion Time of 4 hours for Required Action A.1.2.1 is consistent with those allowed for in Required Action A.1.1 and provides an acceptable time to reach the required power level from full power operation without allowing the plant to remain in an unacceptable condition for an extended period of time. The Completion Times of 4 hours for Required Actions A.1.1 and A.1.2.1 are not additive. Required Action A.2 requires that an incore flux map (SR 3.2.2.1) be obtained and the measured value of $F^N_{\Delta H}$ verified not exceed the allowed limit at the lower power level. The unit is provided 20 additional hours to perform this task over and above the 4 hours allowed by either Action A.1.1 or Action A.1.2.1. The Completion Time of 24 hours is acceptable because of the increase in the DNB margin, which is obtained at lower power levels, and the low probability of having a DNB limiting event within this 24 hour period. Additionally, operating experience has indicated that this Completion Time is sufficient to obtain the incore flux map, perform the required calculations, and evaluate $F^N_{\Delta H}$.

Verification in accordance with Required Action A.3 that $F^N_{\Delta H}$ is within its specified limits after an out of limit occurrence ensures that the cause that led to the $F^N_{\Delta H}$ exceeding its limit is corrected, and that subsequent operation proceeds within the LCO limit. This Action demonstrates that the $F^N_{\Delta H}$ limit is within the LCO limits prior to exceeding 50% RTP, again prior to exceeding 75% RTP, and within 24 hours after THERMAL POWER is ≥ 95% RTP.

When Required Actions A.1.1 through A.3 cannot be completed within their required Completion Times, Required Action requires that the plant be placed in a mode in which the LCO requirements are not applicable. This is done by placing the plant in at least MODE 2 within 6 hours. The allowed Completion Time of 6 hours is reasonable, based on operating experience regarding the time required to reach MODE 2 from full power conditions in an orderly manner and without challenging plant systems.

Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M12 CTS Specification 3.10.2.2.2, which imposes additional requirements upon $F_Q(Z)$ (i.e., increases the measured $F_Q(Z)$ in the direction of the limit) if the enthalpy rise hot channel factor is increasing, is retained in ITS Surveillance Requirement 3.2.2.1 as a Note, and is further revised to ensure that $F_Q(Z)$ is reverified to be within the required F_Q limits. While the CTS requirement to remain within F_Q limits remains unchanged, the additional requirement to reverify that $F_Q(Z)$ is within the F_Q limits adds new requirements. Reverifying that $F_Q(Z)$ is within the F_Q limits prevents $F^V_Q(Z)$ from exceeding its limit for any significant

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period of time during the surveillance interval. Therefore, this change has no adverse impact on safety.

M13 CTS Specification 3.10.2.1.1, which requires that the target AFD be established following initial loading, includes a footnote that allows the "design target value" to be used during power escalation until extended operation is achieved and the target values can be determined from actual core parameters. The footnote to CTS Specification 3.10.2.1.1 does not include a specific Completion Time upon which the target flux difference must be established based on actual core parameters. The ITS requires that the target flux difference be initially determined within 31 EFPDs of refueling. Since the target flux difference varies slowly with core burnup, the Frequency of 31 EFPD after each refueling establishes an initial measurement of the target flux difference based upon actual core parameters before measured values vary excessively with design prediction. This change imposes more restrictive requirements, and has no adverse impact on safety.

M14 CTS Specification 3.10.2.5, which excludes applicability for maintaining AFD within the target band during physics testing, is not retained in ITS. ITS Specification 3.2.3, "Axial Flux Difference (AFD) (PDC-3 Axial Offset Control Methodology)," does not allow a physics test exception for AFD Applicability. The AFD must be maintained as specified by LCO 3.2.3 at all times when the reactor is at power, and a physic test exception is inappropriate. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M15 CTS Specification 3.10.2.5, which requires that the AFD be maintained within its target band, is revised in ITS LCO 3.2.3.b to also require that the AFD be within the acceptable operation limits. LCO 3.2.3 intends that the unit is operated with the AFD within the target band about the target flux difference. However, during rapid THERMAL POWER reductions, control bank motion may cause the AFD to deviate outside of the target band at reduced THERMAL POWER levels. This deviation does not affect the xenon distribution sufficiently to change the envelope of peaking factors that may be reached on a subsequent return to RTP with the AFD within the target band, provided the time duration of the deviation is limited. The cumulative penalty time assures that the time duration of the deviation is limited. Violating the LCO acceptable operation limits for AFD could produce unacceptable consequences if a Condition 2, 3, or 4 event occurs.

Similarly, CTS Specification 3.10.2.7.a, which requires actions to be taken if AFD is outside of its target band, is revised in ITS 3.2.3 Condition C.1 to apply Required Action C.1 when the AFD is outside of acceptable operation limits. If the indicated AFD is outside the target

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acceptable operation limits. If the indicated AFD is outside the target band and outside the acceptable operation limits provided in the COLR, the peaking factors assumed in accident analysis may be exceeded with the existing xenon condition. The Completion Time of 30 minutes allows for a prompt, yet orderly, reduction in power. Since this change adds requirements, this change is more restrictive, and has no adverse impact on safety.

M16 CTS Specification 3.10.2.6, which requires actions to be taken to maintain the AFD within the target band for rated power greater than 90% of rated power or 0.9 APL (whichever is less), and CTS Specification 3.10.2.7, which defines actions that result in accumulation of penalty deviation time when the reactor power is ≥ 50% rated power, and less than 90% rated power or 0.9 APL (whichever is less), are revised in ITS 3.2.3 Applicability to MODE 1 with THERMAL POWER > 15% RTP. Since this change imposes applicability for THERMAL POWER < 50%, this change is more restrictive. This change is being made to ensure that the distributions of xenon are consistent with safety analysis assumptions. Therefore, this change has no adverse impact on safety.

The CTS requirement to maintain AFD to within the target band at a THERMAL POWER > 90% RTP or 0.9 APL (whichever is less), is revised in Required Action A.1 for THERMAL POWER ≥ 90% RTP or 0.9 APL (whichever is less). Because this change could potentially result in remaining outside the target band and accumulation of penalty deviation time at exactly 90% RTP or 0.9 APL (whichever is less) or could result in the reduction of THERMAL POWER to below 90% RTP or 0.9 APL (whichever is less) rather than ≤ 90% RTP or 0.9 APL (whichever is less), this change is more restrictive, and has no adverse impact on safety. This change is being made solely to maintain consistency with NUREG-1431.

Similarly, the CTS requirement to accumulate penalty deviation time at THERMAL POWER > 50% RTP and < 90% RTP or 0.9 APL (whichever is less), is revised in ITS to define the allowable range for cumulative penalty time to be THERMAL POWER ≥ 50% RTP and < 90% RTP or 0.9 APL (whichever is less). Because this change could result in the accumulation of penalty deviation time at exactly 50% RTP at the rate defined in LCO 3.2.3.b, this change is more restrictive, and has no adverse impact on safety. This change is being made solely to maintain consistency with NUREG-1431.

M17 CTS Specification 3.10.2.6, which contains the Required Action to return the AFD to the target band or reduce reactor power to less than 90% rated power, is modified in the ITS to require a Completion Time of 15 minutes to reduce THERMAL POWER to < 90% RTP, if the Required Action and associated Completion Time for restoration of AFD to within its target

TECHNICAL CHANGES - MORE RESTRICTIVE
(continued)

band is not met. No Completion Time for reduction of THERMAL POWER is required in the CTS. The addition of a Completion Time of 15 minutes to reduce power in ITS Required Action B.1 imposes new requirements; therefore, this change is more restrictive. The allowed Completion Time of 15 minutes provides an acceptable time to reduce power to ≤ 90% RTP or 0.9 APL whichever is less without allowing the plant to remain in an unanalyzed condition for an extended period of time. Therefore, this change has no adverse impact on safety.

M18 The CTS is revised in the ITS to add a Note to Condition D, add Required Action D.1, and add SR 3.2.3.1, from ISTS 3.2.3, "Axial Flux Difference (AFD) (Constant Axial Offset Control (CAOC) Methodology)." CTS Specification 3.10.2.1.1 does not specifically apply when reactor power is less than 50% rated power except for the purposes of accumulating penalty hours.

Required Action D.1 requires that THERMAL POWER be reduced to < 15% RTP if the Required Actions and Completion Times of Condition C are not met. The CTS has no explicit required action if the Required Actions equivalent to Condition C are not met. If Required Action C.1 is not completed within its required Completion Time of 30 minutes, the axial xenon distribution starts to become significantly skewed with the THERMAL POWER ≥ 50% RTP. In this situation, the assumption that a cumulative penalty deviation time of 1 hour or less during the previous 24 hours while the AFD is outside its target band is acceptable at < 50% RTP, is no longer valid. Reducing the power level to < 15% RTP within the Completion Time of 9 hours and complying with LCO penalty deviation time requirements for subsequent increases in THERMAL POWER ensure that acceptable xenon conditions are restored.

ITS SR 3.2.3.1 requires verification that the AFD as indicated by the NIS excore channels is within the target band and consistent with the status of the AFD monitor alarm. The Surveillance Frequency of 7 days is adequate because the AFD is controlled by the operator and monitored by the process computer. Since these changes impose new requirements, they are more restrictive and have no adverse impact on safety.

M19 CTS Specification 3.10.2.8.a, which allows the indicated AFD to deviate from its target band at reactor power ≤ 50% rated power, is revised in the ITS to allow AFD to deviate outside the target band with THERMAL POWER < 50% RTP. Since this change does not allow operation with AFD outside of the target band at exactly 50% RTP, this change imposes more restrictive requirements, and has no adverse impact on safety. This change is being made solely to maintain consistency with NUREG-1431.

TECHNICAL CHANGES - MORE RESTRICTIVE
(continued)

M20 CTS Specification 3.10.2.10, which requires that the AFD be logged every hour for the first 24 hours, and half-hourly thereafter, when the AFD alarm is out of service, is revised in ITS SR 3.2.3.2 to have a Frequency of once within 15 minutes and every 15 minutes thereafter when THERMAL POWER is ≥ 90% RTP, and once within 1 hour and every 1 hour thereafter when THERMAL Power is < 90 % RTP. This change is more restrictive in the case where THERMAL POWER ≥ 90% RTP, without regard to how long the AFD monitor has been out of service. This change incorporates a more appropriate frequency for logging AFD in the plant condition where the AFD limits are most restrictive, and where and deviation of AFD outside the target band would most impact the assumptions of the safety analyses. Therefore, this change has no adverse impact on safety.

M21 CTS Specification 3.10.2.1.1, which requires that the target AFD as a function of power level be established following initial core loading, has the Frequency changed in SR 3.2.3.3 of the ITS to within 31 EFPDs following each refueling. This change imposes a time limit in the Frequency for the initial performance of SR 3.2.3.3 after refueling. This change imposes more restrictive requirements, and has no adverse impact on safety. This change is being made solely to maintain consistency with NUREG-1431.

M22 CTS Specification 3.10.3.1, which excludes applicability for required actions when QPTR exceeds 1.02 during physics testing, is not retained in ITS. ISTS Specification 3.2.4, "Quadrant Power Tilt Ratio (QPTR)," does not allow a physics test exception for QPTR applicability. The QPTR must be maintained as specified by LCO 3.2.4 in MODE 1 with THERMAL POWER ≥ 50% RTP. There are no physics tests performed that require an exception to the QPTR limit. Additionally, since limits on QPTR ensure that the quadrant tilt assumed in the accident analyses remains valid, a physics test exception to the QPTR limit is inappropriate. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M23 CTS Specification 3.10.3.1, which requires that actions be taken when QPTR exceeds the limit of 1.02, includes the required action that ". . . the tilt condition shall be eliminated within two hours. . ." This required action, which can be taken in lieu of other required actions that result in a reduction in THERMAL POWER, is not retained in ITS. Because the CTS required action allows two hours to lapse prior to applying a required action to reduce power, this change is more restrictive. The Completion Time of 2 hours in Required Action A.1 allows sufficient time to identify the cause and correct the tilt without the need for an additional 2 hours as allowed by the CTS. Therefore, this change has no adverse impact on safety.

TECHNICAL CHANGES - MORE RESTRICTIVE
(continued)

M24 CTS Specification 3.10.3.1.a, which requires that power level be reduced in response to QPTR in excess of limit, is revised in the ITS to require a Completion Time of 2 hours to achieve the reduction in THERMAL POWER. Since this change adds a Completion Time requirement, this change is more restrictive. The Completion Time of 2 hours in Required Action A.1 allows sufficient time to identify the cause and correct the tilt. Therefore, this change has no impact on safety.

M25 CTS Specification 3.10.3.1.a, which requires reactor power to be reduced by more than two (2) percent of rated reactor power for every one (1) percent that the QPTR is in excess of the limit, is retained in ITS 3.2.4 Required Action A.1 and is revised to specify a Completion Time of 2 hours and to reduce power by three (3) percent for every percent of QPTR in excess of the limit. Since this change adds a Completion Time for the Required Action which did not exist previously, and restricts THERMAL POWER further as revised in the Required Action, this change is more restrictive.

Similarly, CTS Specification 3.10.3.2, which requires reactor power to be reduced by more than two (2) percent of rated thermal power for every one (1) percent of indicated power tilt, is revised in ITS 3.2.4 Required Action A.1 to reduce power by three (3) percent for every percent of QPTR in excess of the limit. This change is more restrictive.

With the QPTR exceeding its limit, a power level reduction of 3% RTP for each 1% by which the QPTR exceeds 1.00 is a conservative tradeoff of total core power with peak linear power. The Completion Time of 2 hours allows sufficient time to identify the cause and correct the tilt. Note that the power reduction itself may cause a change in the tilted condition. Therefore, these changes have no adverse impact on safety.

M26 The CTS is revised in the ITS to add a specific LCO to maintain QPTR ≤ 1.02, and add Required Actions A.2, A.3, A.4, A.5 and Note, A.6 and Note, SR 3.2.4.1 and Note 2, and SR 3.2.4.2 and Note from ISTS 3.2.4, "Quadrant Power Tilt Ratio (QPTR)." Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety. LCO 3.2.4 precludes core power distributions that violate the fuel design criteria. Required Actions A.2 and A.4 ensure that the QPTR at the reduced thermal power levels reached in response to Required Action A.1 continues to be within its limit, or additional power reduction is required. The 12 hour Completion Time for Required Action A.2 is sufficient because any additional change in QPTR would be relatively slow.

TECHNICAL CHANGES - MORE RESTRICTIVE
(continued)

The Completion Time of 24 hours for Required Action A.2 takes into consideration the rate at which peaking factors are likely to change, and the time required to stabilize the plant and perform a flux map. If these peaking factors are not within their limits, the Required Actions of these Surveillances provide an appropriate response for the abnormal condition. If the QPTR remains above its specified limit, the peaking factor surveillances are required each 7 days thereafter to evaluate $F^N_{\Delta H}$ and $F_Q(Z)$ with changes in power distribution.

The re-evaluation in Required Action A.4 is required to ensure that, before increasing THERMAL POWER to above the limit of Required Action A.1, the reactor core conditions are consistent with the assumptions in the safety analyses.

If the QPTR has exceeded the 1.02 limit and a re-evaluation of the safety analysis is completed and shows that safety requirements are met, the excore detectors are normalized in accordance with Required Action A.5 to eliminate the indicated tilt prior to increasing THERMAL POWER to above the limit of Required Actions A.1 or A.2. This is done to detect any subsequent significant changes in QPTR. Required Action A.5 is modified by a Note that prevents any ambiguity about the required sequence of actions.

Once the excore detectors are normalized to eliminate the indicated tilt (i.e., Required Action A.5 is performed), it is acceptable to return to full power operation in accordance with Required Action A.6. However, as an added check that the core power distribution at RTP is consistent with the safety analysis assumptions, Required Action A.6 requires verification that $F_Q(Z)$ and $F^N_{\Delta H}$ are within their specified limits within 24 hours of reaching RTP. As an added precaution, if the core power does not reach RTP within 24 hours, but is increased slowly, then the peaking factor surveillances must be performed within 48 hours of the time when the ascent to power was begun. These Completion Times are intended to allow adequate time to increase THERMAL POWER to above the limit of Required Action A.1 and A.2, while not permitting the core to remain with unconfirmed power distributions for extended periods of time. Required Action A.6 is modified by a Note that requires the peaking factor surveillances be performed at operating power levels, which can only be accomplished after the excore detectors are normalized in accordance with Required Action A.5 to remove the tilt and the core returned to power.

Therefore, these changes have no adverse impact on safety.

M27 CTS Specification 1.8 allows calculation of QPTR with only three (3) operable power range nuclear instruments without restrictions on reactor

TECHNICAL CHANGES - MORE RESTRICTIVE
(continued)

power. This specification is retained as Note 1 to ITS SR 3.2.4.1 with the additional restriction from ISTS SR 3.2.4.1 that THERMAL POWER must be < 75% RTP prior to determining QPTR with only three operable excore detectors. Since this change adds a restriction for THERMAL POWER levels when performing a surveillance under certain conditions, this change is more restrictive. In this condition, it would be inappropriate to determine QPTR above 75% RTP since the QPTR results would be invalid for the quadrant where the inoperable excore detector exists. When THERMAL POWER is ≥ 75% RTP and one power range nuclear instrument is inoperable, QPTR is determined using the Incore Flux Mapping System. Therefore, this change has no adverse impact on safety.

M28 CTS Specification 3.10.2.1.1, which requires that the Overpower Delta-Temperature (OPΔT) and Overtemperature Delta-Temperature (OTΔT) trip setpoints be reduced if ". . .subsequent incore mapping cannot . . . demonstrate that the hot channel factors are met." is retained in ITS 3.2.1 Required Action A.2.3 to reduce the OPΔT and OTΔT setpoints. However, Required Action A.2.3 must be followed in ITS regardless of the means by which the hot channel factors are measured, i.e., "subsequent incore mapping." Because the ITS Required Action is not restricted by the method used for hot channel factor measurement, and it is inappropriate to identify flux mapping as a means to satisfying the Required Action to reduce the OPΔT and OTΔT setpoints, this change is considered more restrictive, and has no adverse impact on safety.

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA1 The details contained in CTS Specifications 3.10.2.1, and 3.10.2.2 related to the power distribution limits of $F_Q(Z)$, are relocated to the COLR. This detail, which includes the mathematical relationship of the F_Q, i.e., $F_Q(Z)$, to the normalized hot channel factor, i.e., $K(Z)$, as a function of power, and the associated engineering uncertainty factors, is not required to be in the ITS to provide adequate protection of the health and safety of the public, since the ITS still retains the requirement to remain within the hot channel factor limits specified in the COLR. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of this detail is acceptable.

LA2 The details contained in CTS Specifications 3.10.2.1, related to the power distribution limits of $F^N_{\Delta H}$, are relocated to the COLR. This detail, and the associated engineering uncertainty factors, is not required to be in the ITS to provide adequate protection of the health and safety of the public, since the ITS still retains the requirement to remain within the hot channel factor limits specified in the COLR. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of this detail is acceptable.

LA3 The details contained in CTS Specification 3.10.2.11, third and fourth sentences, related to the redefinition of the target band between the less restrictive and the more restrictive ranges, are relocated to the COLR. This detail, which redefines the target band from the more restrictive to the less restrictive range for AFD, is not required to be in the ITS to provide adequate protection of the health and safety of the public, since the ITS still retains the requirement to remain within the target band specified in the COLR. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of this detail is acceptable.

LA4 The details contained in CTS Specification 3.10.2.2.2, that define the variable expression $F_Q(Z)$ as the measured hot channel factor, are

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)
(continued)

relocated to the ITS bases. This detail, is not required to be in the ITS to provide adequate protection of the health and safety of the public, since the ITS still retains the requirement to remain within the limits of $F_Q(Z)$. Changes to the ITS bases are controlled in accordance with the ITS Section 5.5.14, "Technical Specifications (TS) Bases Control Program." This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of this detail is acceptable.

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CTS Specification 3.10.2.1, requires that the F_Q limits be applicable at all times except during physics testing, is revised in ITS Specification 3.2.1, "Heat Flux Hot Channel Factor ($F_Q(Z)$) (F_Q Methodology)," to require that the F_Q limits be applicable in MODE 1 only, and is less restrictive. This change is acceptable, however, since it is only in MODE 1 that a challenge to the F_Q limits can be made. This change does not reduce any margins to safety and is consistent with NUREG-1431 which utilizes a similar power distribution limit methodology.

L2 CTS Specification 3.10.2.1.1, which requires that if the hot channel factors cannot be returned to within limits within 24 hours then the OPΔT and OTΔT setpoints will be reduced by a fraction equal to $F_Q(Z)_{limit}/F_Q^V(Z)_{actual}$, is revised in ITS Specification 3.2.1, "Power Distribution Limits," Required Action A.2.3, to require that if F_Q cannot be returned to within limits within 72 hours the OPΔT and OTΔT setpoints will be reduced. This is a relaxation of requirements, and is less restrictive. This change is acceptable because appropriate time is needed to change the OTΔT and OPΔT setpoints; the 72 hour time period permits the possibility of restoring hot channel factors within limits and may avoid resetting the OTΔT and OPΔT setpoints twice while in Condition A; and, THERMAL POWER has already been reduced to ensure that the hot channel factors are within limits during the time that the plant remains in Condition A. This change is consistent with NUREG-1431 which utilizes a similar power distribution limit methodology.

L3 CTS Specification 3.10.2.1.1, which requires that the $F_{\Delta H}$ limits be applicable at all times except during physics testing, is revised in ITS Specification 3.2.2, "Nuclear Enthalpy Rise Hot Channel Factor ($F^N_{\Delta H}$)," to require that the $F_{\Delta H}$ limits be applicable in MODE 1 only, which is less restrictive with respect to applicability to MODEs other than MODE 1. This change is acceptable, however, since it is only in MODE 1 that sufficient THERMAL POWER occurs that could result in a challenge to the $F_{\Delta H}$ limits. This change does not reduce any margins to safety and is consistent with NUREG-1431 which utilizes a similar power distribution limit methodology.

L4 CTS Specification 3.10.2.1.1 contains a surveillance requirement that $F_{\Delta H}$ be verified after exceeding by 10% the power level at which $F_Q(Z)$ was last determined once equilibrium conditions are established following refueling. This surveillance requirement is retained in ITS as SR 3.2.2.1 with the Frequency requirement that $F_{\Delta H}$ be verified prior to exceeding 75% RTP following refueling, and once per 31 EFPDs thereafter, but without the additional restriction of verifying $F_{\Delta H}$ after exceeding by 10% the power level at which F_Q was last measured. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, since further reconfirmation of $F_{\Delta H}$ in addition to the Frequency stated in ITS SR 3.2.2.1 is unnecessary. The measurement

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)
(continued)

of $F_{\Delta H}$ is a function of fuel burnup and is relatively insensitive to changes in reactor power. This change is consistent with NUREG-1431 which utilizes a similar power distribution limit methodology.

L5 CTS Specification 3.10.2.1.1, second and third paragraph, which requires that the OTΔT and OPΔT setpoints be reduced by the fraction $F_{\Delta Hlimit}/F_{\Delta Hactual}$ if the out of limit condition for $F_{\Delta H}$ is not corrected within 24 hours, is not retained in ITS. This is a relaxation of requirements, and is less restrictive. This change is acceptable, since the Required Action to reduce THERMAL POWER to below 50% will likely result in an enthalpy rise hot channel factor that is well below the limiting value at this power level. Further reduction of the OPΔT and OTΔT setpoints is a small contribution to the safety margin, i.e., a OPΔT or OTΔT trip could potentially occur at the reduced setpoint prior to a high neutron flux trip at 55% RTP in response to a transient. While the earlier OPΔT or OTΔT trip could result in a slight improvement in safety margin, this contribution to the safety margin is expected to be small. This change is consistent with NUREG-1431 which utilizes a similar power distribution limit methodology, and has no adverse impact on safety.

L6 CTS Specification 3.10.2.7.a, which requires that in the event that the cumulative penalty time for AFD outside the target band exceeds one hour, the high neutron flux setpoint be reduced to no greater than 55% of rated power, is not retained in the ITS. This is a relaxation of requirements, and is less restrictive. This change is acceptable because Required Action C.1 assures that the plant remains within analyzed parameters for AFD by reducing power and thereby adding margin for AFD to the analyzed assumptions; Required Action D.1 assures that if Required Action C.1 cannot be met within the Completion Time, reactor power is further reduced to add additional margin for AFD to the analyzed assumptions; lowering the high neutron flux setpoints as an additional action does not add appreciable margin to the AFD assumptions in the accident analyses; and, the lower high flux setpoints are not included in the safety analysis assumptions. This change is consistent with NUREG-1431 which utilizes a similar power distribution limit methodology.

L7 CTS Specification 3.10.2.9, which allows calibration of the excore detectors if the AFD is not outside of the target band for > 90% rated power, and if the AFD does not exceed the limits specified in the COLR for reactor power between 50% and 90% rated power, is revised in the ITS Note to Applicability for LCO 3.2.3 to allow up to 16 hours to be accumulated with AFD outside of the target band without penalty deviation time while the excore detectors are being calibrated. This is a relaxation of requirements, and is less restrictive. This change is acceptable because some deviation from the target band is necessary to

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)
(continued)

perform the calibration, and the axial offsets that are used to calibrate the excore detectors alternate between a plus and minus axial offset, such that the overall effect on axial xenon distribution is small. This change is consistent with NUREG-1431 which utilizes a similar power distribution limit methodology.

L8 CTS Specification 3.10.2.10, which requires that the AFD be logged every hour for the first 24 hours, and half-hourly thereafter, when the AFD alarm is out of service, is revised in ITS SR 3.2.3.2 to have a Frequency of once within 15 minutes and every 15 minutes thereafter when THERMAL POWER is ≥ 90% RTP, and once within 1 hour and every 1 hour thereafter when THERMAL POWER is < 90 % RTP. This change is less restrictive in the case that the AFD monitor alarm remains out of service for greater than 24 hours and THERMAL POWER < 90% RTP. This change is acceptable because the likelihood of AFD being out of the target band decreases as steady state operation continues; and, AFD is also more likely to remain within the target band with THERMAL POWER < 90%. This change is consistent with NUREG-1431 which utilizes a similar power distribution limit methodology.

L9 CTS Specification 3.10.2.1.1 contains a surveillance requirement that the target AFD be established after exceeding by 10% the power level at which F_Q was last determined once equilibrium conditions are established following refueling. This surveillance requirement is retained in ITS as SR 3.2.3.3 with the Frequency requirement that the target AFD be established prior to exceeding 75% RTP following refueling, and once per 31 EFPDs thereafter, but without the additional restriction of establishing the target again after exceeding by 10% the power level at which F_Q was last measured. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, since determination of the target AFD is adequately addressed in the PDC-3 axial offset control methodology and is reflected in the requirements stated in ITS LCO 3.2.3. This change is consistent with NUREG-1431 which utilizes a similar power distribution limit methodology.

L10 CTS Specification 3.10.3.1, which excludes applicability for required actions when QPTR exceeds the limit is retained in ITS as an Applicability of MODE 1 with THERMAL POWER > 50% RTP. Since the restated applicability excludes the CTS required applicability for QPTR of exactly 50% RTP this change is considered less restrictive. This change is acceptable since the likelihood of a quadrant power tilt in excess of the limit at exactly 50% RTP resulting in an unanalyzed condition is very small. This change is consistent with NUREG-1431.

L11 CTS Specification 3.10.3.1.a, which requires that the power range high flux setpoint be reset by two (2) percent for every percent that QPTR

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)
(continued)

exceeds 1.0, is not retained in the ITS. Because this change eliminates a requirement, this change is less restrictive. This change is acceptable because the Required Actions remaining in the ITS result in an appropriate reduction in THERMAL POWER to maintain the required safety margins when QPTR is in excess of the limit. This change is consistent with NUREG-1431.

L12 CTS Specification 3.10.3.1.b, which requires that reactor power be reduced to 50% rated power and the power range high flux setpoint reset to 55%, if QPTR is not eliminated within 24 hours, is revised as Required Action B.1 to ITS LCO 3.2.4. This change is less restrictive for two reasons. First, the addition of Required Actions A.2, A.3, A.4, A.5, and A.6, result in the possibility of continued plant operation above 50% RTP with QPTR in excess of the limit as long as the required power reductions are maintained, the F_Q and $F_{\Delta H}$ limits are maintained, and the QPTR condition remains analyzed for the duration of the cycle. CTS Specification 3.10.3.1.b has no such provisions to allow operation above 50% power if the quadrant power tilt remains for more than 24 hours. This change is acceptable because the Required Actions added to Condition A result in the plant remaining in an analyzed condition when the Required Actions are satisfied. Secondly, the requirement to reset the power range high flux setpoints to 55% power is not retained in Required Action B.1. This change is acceptable because the Required Actions remaining in the ITS result in an appropriate reduction in THERMAL POWER to maintain the required safety margins when QPTR is in excess of the limit. This change is consistent with NUREG-1431.

L13 CTS Specifications 3.10.3.2 and 3.10.3.3, which restrict operation with the QPTR in excess of 1.09, is not retained in the ITS. The required actions could potentially result in transition to MODE 3. These restrictions are not retained in the ITS to be consistent with NUREG-1431 which defines required actions specific to the individual LCOs and does not mix required actions from different LCOs. Additionally, the Required Actions to LCO 3.2.4 can result in operation at reduced THERMAL POWER levels. This change is a relaxation of requirements and is less restrictive because plant operation may continue in MODE 1 with QPTR > 1.09 if Required Actions to ITS LCO 3.2.4 were met. This change is acceptable because operation of the plant in accordance with the Required Actions of ITS LCO 3.2.4 reasonably assures that plant operations are within the bounds of the safety analysis.

REFERENCES

1. ANF-88-054(P), "PDC-3: Advanced Nuclear Fuels Corporation Power Distribution Control for Pressurized Water Reactors and Application of PDC-3 to H. B. Robinson Unit 2," Advanced Nuclear Fuels Corporation, Richland, WA 99352 (Submitted to NRC by CP&L letter dated August 24, 1989, Proprietary).

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3.2 POWER DISTRIBUTION LIMITS

3.2.1B Heat Flux Hot Channel Factor ($F_Q(Z)$) (F_Q Methodology)

LCO 3.2.1B $F_Q(Z)$, as approximated by $F_Q^C(Z)$ and $F_Q^W(Z)$ [$F_Q^V(Z)$], shall be within the limits specified in the COLR.
[3.10.2.1]

[3.10.2.1] APPLICABILITY: MODE 1.

[3.10.2.2.1.a] A.1 Reduce AFD target band limits to restore $F_Q^V(Z)$ to within limit OR (4)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. $F_Q^C(Z)$ [$F_Q^V(Z)$] not within limit. [3.10.2.2.1.b]	A.1 [2.1] Reduce THERMAL POWER ≥ 1% RTP for each 1% $F_Q^C(Z)$ [V] exceeds limit.	[15 minutes] 15 minutes [30] (5)
	AND	
[M2]	A.2 [2.2] Reduce Power Range Neutron Flux - High trip setpoints ≥ 1% for each 1% $F_Q^C(Z)$ [V] exceeds limit.	[72] (TSTF-95) 8 hours
	AND	(6) [and overtemperature]
[3.10.2.1.1]	A.3 [2.3] Reduce Overpower ΔT trip setpoints ≥ 1% for each 1% $F_Q^C(Z)$ [V] exceeds limit.	72 hours
	AND	
[M2]	A.4 [2.4] Perform SR 3.2.1.1.	Prior to increasing THERMAL POWER above the limit of Required Action A.1 [A.2.1]

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3.2 POWER DISTRIBUTION LIMITS

3.2.2 Nuclear Enthalpy Rise Hot Channel Factor ($F^N_{\Delta H}$)

LCO 3.2.2 $F^N_{\Delta H}$ shall be within the limits specified in the COLR.

[3.10.2.1]

[3.10.2.1] APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
[M11] A. ---------NOTE--------- Required Actions A.2 and A.3 must be completed whenever Condition A is entered. ---------------------	A.1.1 Restore $F^N_{\Delta H}$ to within limit.	4 hours
	OR	
[M11]	A.1.2.1 Reduce THERMAL POWER to < 50% RTP.	4 hours
$F^N_{\Delta H}$ not within limit.	AND	
[3.10.2.1.1]	A.1.2.2 Reduce Power Range Neutron Flux—High trip setpoints to ≤ 55% RTP.	8 hours (72) TSTF-95
	AND	
[M11]	A.2 Perform SR 3.2.2.1.	24 hours
	AND	
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3.2 POWER DISTRIBUTION LIMITS

3.2.4 QUADRANT POWER TILT RATIO (QPTR)

[M26] LCO 3.2.4 The QPTR shall be ≤ 1.02.

[3.10.3.1] APPLICABILITY: MODE 1 with THERMAL POWER > 50% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. QPTR not within limit. [3.10.3.1a]	A.1 Reduce THERMAL POWER ≥ 3% from RTP for each 1% of QPTR > 1.00.	2 hours
	AND	
[M26]	A.2 ~~Perform SR 3.2.4.1~~ Determine QPTR and reduce THERMAL POWER ≥ 3% from RTP for each 1% of QPTR > 1.00.	Once per 12 hours (TSTF-109)
	AND	
[M26]	A.3 Perform SR 3.2.1.1 and SR 3.2.2.1.	24 hours AND Once per 7 days thereafter
	AND	
[M26]	A.4 Reevaluate safety analyses and confirm results remain valid for duration of operation under this condition.	Prior to increasing THERMAL POWER above the limit of Required Action A.1
	AND	
		(continued)

(2)

CTS

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
[1.8] SR 3.2.4.1	-----NOTES----- 1. With input from one Power Range Neutron Flux channel inoperable and THERMAL POWER < 75% RTP, the remaining three power range channels can be used for calculating QPTR.	
[M26]	2. SR 3.2.4.2 may be performed in lieu of this Surveillance. ~~if adequate Power Range Neutron Flux channel inputs are not OPERABLE.~~ (TSTF-109)	
[M26]	Verify QPTR is within limit by calculation.	7 days AND Once within 12 hours and every 12 hours thereafter with the QPTR alarm inoperable
SR 3.2.4.2 [M26]	(Not)(TSTF-109) -----NOTE----- (until 12 hours after)(TSTF-109) ~~Only~~ required to be performed ~~if~~ input from one or more Power Range Neutron Flux channels are inoperable with THERMAL POWER ≥ 75% RTP.	
[M26]	Verify QPTR is within limit using the movable incore detectors.	Once within 12 hours AND 12 hours thereafter

13 ISTS Specification 3.2.4 is modified to replace the term, "calibrated excore detectors to show a zero tilt," with, "normalize excore detectors to eliminate the tilt," in order to clarify that the measured QUADRANT POWER TILT RATIO (QPTR) need not precisely equate to zero prior to increasing THERMAL POWER above the level determined by ITS 3.2.4 Required Action A.1, and that the Required Action is a normalization of excore detector indications rather than a calibration, i.e., performance of SR 3.3.1.10.

14 ISTS Specification 3.2.4 is modified to include applicability of ITS 3.2.4 Required Action A.2 to the Completion Time for Required Actions A.5 and A.6, to reflect that THERMAL POWER limitations from either Required Action A.1 or A.2 may be more limiting.

15 Not used.

16 ISTS Specification 3.2.3 is modified to include Required Action C.2 to ensure consistency in the analyses performed in accordance with the PDC-3 axial offset control methodology.

2 4 5

BASES

ACTIONS (continued)

~~A.2~~ A.2.2

A reduction of the Power Range Neutron Flux-High trip setpoints by ≥ 1% for each 1% by which $F_Q(Z)$ exceeds its limit, is a conservative action for protection against the consequences of severe transients with unanalyzed power distributions. The Completion Time of ~~8~~ 72 hours is sufficient considering the small likelihood of a severe transient in this time period and the preceding prompt reduction in THERMAL POWER in accordance with Required Action A.1.

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~~A.3~~ A.2.3

6

Reduction in the Overpower and Overtemperature ΔT trip setpoints by ≥ 1% for each 1% by which $F_Q(Z)$ exceeds its limit, is a conservative action for protection against the consequences of severe transients with unanalyzed power distributions. The Completion Time of 72 hours is sufficient considering the small likelihood of a severe transient in this time period, and the preceding prompt reduction in THERMAL POWER in accordance with Required Action A.1.

~~A.4~~ A.2.4

Verification that $F_Q(Z)$ has been restored to within its limit, by performing SR 3.2.1.1 prior to increasing THERMAL POWER above the limit imposed by Required Action ~~A.1~~ A.2.1, ensures that core conditions during operation at higher power levels are consistent with safety analyses assumptions.

7

~~B.1~~

~~If it is found that the maximum calculated value of $F_Q(Z)$ that can occur during normal maneuvers, $F_Q^W(Z)$, exceeds its specified limits, there exists a potential for $F_Q^C(Z)$ to become excessively high if a normal operational transient occurs. Reducing the AFD by ≥ 1% for each 1% by which $F_Q^W(Z)$ exceeds its limit within the allowed Completion Time of 2 hours, restricts the axial flux distribution such that even if a transient occurred, core peaking factors are not exceeded.~~

(continued)

2

BASES

ACTIONS

A.1.1 (continued)

75% RTP, and within 24 hours after reaching or exceeding 95% RTP. In addition, Required Action A.2 is performed if power ascension is delayed past 24 hours.

A.1.2.1 and A.1.2.2

If the value of $F^N_{\Delta H}$ is not restored to within its specified limit either by adjusting a misaligned rod or by reducing THERMAL POWER, the alternative option is to reduce THERMAL POWER to < 50% RTP in accordance with Required Action A.1.2.1 and reduce the Power Range Neutron Flux-High to ≤ 55% RTP in accordance with Required Action A.1.2.2. Reducing RTP to < 50% RTP increases the DNB margin and does not likely cause the DNBR limit to be violated in steady state operation. The reduction in trip setpoints ensures that continuing operation remains at an acceptable low power level with adequate DNBR margin. The allowed Completion Time of 4 hours for Required Action A.1.2.1 is consistent with those allowed for in Required Action A.1.1 and provides an acceptable time to reach the required power level from full power operation without allowing the plant to remain in an unacceptable condition for an extended period of time. The Completion Times of 4 hours for Required Actions A.1.1 and A.1.2.1 are not additive.

72 TSTF-95

The allowed Completion Time of 8 hours to reset the trip setpoints per Required Action A.1.2.2 recognizes that, once power is reduced, the safety analysis assumptions are satisfied and there is no urgent need to reduce the trip setpoints. This is a sensitive operation that may inadvertently trip the Reactor Protection System.

A.2

Once the power level has been reduced to < 50% RTP per Required Action A.1.2.1, an incore flux map (SR 3.2.2.1) must be obtained and the measured value of $F^N_{\Delta H}$ verified not to exceed the allowed limit at the lower power level. The unit is provided 20 additional hours to perform this task over and above the 4 hours allowed by either Action A.1.1 or Action A.1.2.1. The Completion Time of 24 hours is acceptable because of the increase in the DNB margin, which

(continued)

ACTIONS

A.6 (continued)

core power does not reach RTP within 24 hours, but is increased slowly, then the peaking factor surveillances must be performed within 48 hours of the time when the ascent to power was begun. These Completion Times are intended to allow adequate time to increase THERMAL POWER to above the limit of Required Action A.1, while not permitting the core to remain with unconfirmed power distributions for extended periods of time.

20 and A.2

normalized to remove the 19

Required Action A.6 is modified by a Note that states that the peaking factor surveillances may only be done after the excore detectors have been calibrated to show zero tilt (i.e., Required Action A.5). The intent of this Note is to have the peaking factor surveillances performed at operating power levels, which can only be accomplished after the excore detectors are calibrated to show zero tilt and the core returned to power.

normalized to remove the 19

B.1

If Required Actions A.1 through A.6 are not completed within their associated Completion Times, the unit must be brought to a MODE or condition in which the requirements do not apply. To achieve this status, THERMAL POWER must be reduced to < 50% RTP within 4 hours. The allowed Completion Time of 4 hours is reasonable, based on operating experience regarding the amount of time required to reach the reduced power level without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.2.4.1

SR 3.2.4.1 is modified by two Notes. Note 1 allows QPTR to be calculated with three power range channels if THERMAL POWER is < 75% RTP and the input from one Power Range Neutron Flux channel is inoperable. Note 2 allows performance of SR 3.2.4.2 in lieu of SR 3.2.4.1 if more than one input from Power Range Neutron Flux channels are inoperable.

TSTF-109

This Surveillance verifies that the QPTR, as indicated by the Nuclear Instrumentation System (NIS) excore channels, is

or Emergency Response Facility Information System (ERFIS) 22

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.2.4.1 (continued)

within its limits. The Frequency of 7 days when the QPTR alarm is OPERABLE is acceptable because of the low probability that this alarm can remain inoperable without detection.

When the QPTR alarm is inoperable, the Frequency is increased to 12 hours. This Frequency is adequate to detect any relatively slow changes in QPTR, because for those causes of QPT that occur quickly (e.g., a dropped rod), there typically are other indications of abnormality that prompt a verification of core power tilt.

SR 3.2.4.2

This Surveillance is modified by a Note, which states that it is required only when the input from one or more Power Range Neutron Flux channels are inoperable and the THERMAL POWER is ≥ 75% RTP.

With an NIS power range channel inoperable, tilt monitoring for a portion of the reactor core becomes degraded. Large tilts are likely detected with the remaining channels, but the capability for detection of small power tilts in some quadrants is decreased. Performing SR 3.2.4.2 at a Frequency of 12 hours provides an accurate alternative means for ensuring that any tilt remains within its limits.

For purposes of monitoring the QPTR when one power range channel is inoperable, the moveable incore detectors are used to confirm that the normalized symmetric power distribution is consistent with the indicated QPTR and any previous data indicating a tilt. The incore detector monitoring is performed with a full incore flux map or two sets of four thimble locations with quarter core symmetry. The two sets of four symmetric thimbles is a set of eight unique detector locations. These locations are C-8, E-5, E-11, H-3, H-13, L-5, L-11, and N-8 for three and four loop cores.

The symmetric thimble flux map can be used to generate symmetric thimble "tilt." This can be compared to a reference symmetric thimble tilt, from the most recent full

(continued)

Supplement 1

18 Bases 3.2.3 are modified by deleting SR 3.2.3.3, and subsequently renumbering the remaining SR. The Bases are also modified by changing the Frequency of the new SR 3.2.3.3 to 31 Effective Full Power Days (EFPDs) from 92 EFPDs. The PDC-3 axial offset control methodology does not allow the use of linear interpolation to determine the target flux values.

19 Bases 3.2.4 are modified to state that the excore detectors are normalized to eliminate the tilt rather than calibrated to show a zero tilt in ITS 3.2.4 Required Actions A.5 and A.6. This action is performed once the safety analyses requirements have been determined to be met assuming the indicated tilt.

20 Bases 3.2.4 are modified to include applicability of ITS 3.2.4 Required Action A.2 to the Completion Time for Required Actions A.5 and A.6, to reflect that THERMAL POWER limitations from either Required Action A.1 or A.2 may be more limiting.

21 Not used.

22 Bases 3.2.4 are modified in SR 3.2.4.1 to allow the verification of QPTR by calculation, or as indicated by the Emergency Response Facility Information System (ERFIS) computer. The ERFIS performs the QPTR calculation utilizing direct inputs from plant instrumentation.

23 Not used.

24 Bases 3.2.4 are modified in SR 3.2.4.2 to delete details of the incore system utilized for determining the QPTR in the ISTS reference plant and are not applicable to HBRSEP, Unit No. 2.

25 Bases 3.2.3 are modified to correct applicability for LCO 3.2.3 to 15% RTP through 100% RTP.

26 Bases 3.2.3 are modified to add Required Action C.2, which provides consistency with analyses performed in accordance with the PDC-3 axial offset control methodology.

27 Bases 3.2.4 are modified to provide clarification for Required Action A.4 in the event that LCO 3.2.4 is satisfied during performance of the Required Action.

28 Bases 3.2.3 is modified by adding Note 2 to ITS SR 3.2.3.3 bases which states that the target flux difference be determined in conjunction with the measurement of the heat flux hot channel factor, $F_Q(Z)$, in accordance with ITS SR 3.2.1.1. The performance of SR 3.2.3.3. in conjunction with SR 3.2.1.1 is a requirement of the PDC-3 axial offset control methodology.

3.2 POWER DISTRIBUTION LIMITS

3.2.1 Heat Flux Hot Channel Factor ($F_Q(Z)$)

LCO 3.2.1 $F_Q(Z)$, as approximated by $F_Q^V(Z)$, shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. $F_Q^V(Z)$ not within limit.	A.1 Reduce AFD target band limits to restore $F_Q^V(Z)$ to within limit.	15 minutes
	<u>OR</u>	
	A.2.1 Reduce THERMAL POWER ≥ 1% RTP for each 1% $F_Q^V(Z)$ exceeds limit.	30 minutes
	<u>AND</u>	
	A.2.2 Reduce Power Range Neutron Flux – High trip setpoints ≥ 1% for each 1% $F_Q^V(Z)$ exceeds limit.	72 hours
	<u>AND</u>	
	A.2.3 Reduce Overpower and Overtemperature ΔT trip setpoints ≥ 1% for each 1% $F_Q^V(Z)$ exceeds limit.	72 hours
	<u>AND</u>	(continued)

3.2 POWER DISTRIBUTION LIMITS

3.2.2 Nuclear Enthalpy Rise Hot Channel Factor ($F^N_{\Delta H}$)

LCO 3.2.2 $F^N_{\Delta H}$ shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ---------NOTE--------- Required Actions A.2 and A.3 must be completed whenever Condition A is entered. --------------------- $F^N_{\Delta H}$ not within limit.	A.1.1 Restore $F^N_{\Delta H}$ to within limit.	4 hours
	OR	
	A.1.2.1 Reduce THERMAL POWER to < 50% RTP.	4 hours
	AND	
	A.1.2.2 Reduce Power Range Neutron Flux-High trip setpoints to ≤ 55% RTP.	72 hours
	AND	
	A.2 Perform SR 3.2.2.1.	24 hours
	AND	
		(continued)

3.2 POWER DISTRIBUTION LIMITS

3.2.4 QUADRANT POWER TILT RATIO (QPTR)

LCO 3.2.4 The QPTR shall be ≤ 1.02.

APPLICABILITY: MODE 1 with THERMAL POWER > 50% RTP.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. QPTR not within limit.	A.1	Reduce THERMAL POWER ≥ 3% from RTP for each 1% of QPTR > 1.00.	2 hours
	AND		
	A.2	Determine QPTR and reduce THERMAL POWER ≥ 3% from RTP for each 1% of QPTR > 1.00.	Once per 12 hours
	AND		
	A.3	Perform SR 3.2.1.1 and SR 3.2.2.1.	24 hours AND Once per 7 days thereafter
	AND		
	A.4	Reevaluate safety analyses and confirm results remain valid for duration of operation under this condition.	Prior to increasing THERMAL POWER above the limit of Required Action A.1
	AND		
			(continued)

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.2.4.1	-------------------NOTES------------------- 1. With input from one Power Range Neutron Flux channel inoperable and THERMAL POWER < 75% RTP, the remaining three power range channels can be used for calculating QPTR. 2. SR 3.2.4.2 may be performed in lieu of this Surveillance. --- Verify QPTR is within limit by calculation.	7 days AND Once within 12 hours and every 12 hours thereafter with the QPTR alarm inoperable.
SR 3.2.4.2	-------------------NOTE------------------- Not required to be performed until 12 hours after input from one or more Power Range Neutron Flux channels are inoperable with THERMAL POWER ≥ 75% RTP. --- Verify QPTR is within limit using the movable incore detectors.	Once within 12 hours AND 12 hours thereafter

BASES

ACTIONS

A.1 (continued)

required. In the event that the reduced target band does not result in an acceptable $F_Q^V(Z)$, the THERMAL POWER will be reduced in accordance with Required Action A.2.1. The Completion Time of 15 minutes provides an acceptable time to reevaluate $F_Q^V(Z)$ within the more restrictive target band to determine if $F_Q^V(Z)$ remains within limits.

A.2.1

Reducing THERMAL POWER by ≥ 1% RTP for each 1% by which $F_Q^V(Z)$ exceeds its limit, maintains an acceptable absolute power density. $F_Q^V(Z)$ is $F_Q^M(Z)$ multiplied by engineering uncertainty factors and the maneuvering penalty factor V(Z) as stated in the COLR. $F_Q^M(Z)$ is the measured value of $F_Q(Z)$. The Completion Time of 30 minutes provides an acceptable time to reduce power in an orderly manner and without allowing the plant to remain in an unacceptable condition for an extended period of time.

A.2.2

A reduction of the Power Range Neutron Flux—High trip setpoints by ≥ 1% for each 1% by which $F_Q^V(Z)$ exceeds its limit, is a conservative action for protection against the consequences of severe transients with unanalyzed power distributions. The Completion Time of 72 hours is sufficient considering the small likelihood of a severe transient in this time period and the preceding prompt reduction in THERMAL POWER in accordance with Required Action A.1.

A.2.3

Reduction in the Overpower and Overtemperature ΔT trip setpoints by ≥ 1% for each 1% by which $F_Q^V(Z)$ exceeds its limit, is a conservative action for protection against the consequences of severe transients with unanalyzed power distributions. The Completion Time of 72 hours is sufficient considering the small likelihood of a severe transient in this time period, and the preceding prompt reduction in THERMAL POWER in accordance with Required Action A.1.

(continued)

BASES

ACTIONS

A.1.1 (continued)

However, if power is reduced below 50% RTP, Required Action A.3 requires that another determination of $F^N_{\Delta H}$ must be done prior to exceeding 50% RTP, prior to exceeding 75% RTP, and within 24 hours after reaching or exceeding 95% RTP. In addition, Required Action A.2 is performed if power ascension is delayed past 24 hours.

A.1.2.1 and A.1.2.2

If the value of $F^N_{\Delta H}$ is not restored to within its specified limit either by adjusting a misaligned rod or by reducing THERMAL POWER, the alternative option is to reduce THERMAL POWER to < 50% RTP in accordance with Required Action A.1.2.1 and reduce the Power Range Neutron Flux - High to ≤ 55% RTP in accordance with Required Action A.1.2.2. Reducing RTP to < 50% RTP increases the DNB margin and does not likely cause the DNBR limit to be violated in steady state operation. The reduction in trip setpoints ensures that continuing operation remains at an acceptable low power level with adequate DNBR margin. The allowed Completion Time of 4 hours for Required Action A.1.2.1 is consistent with those allowed for in Required Action A.1.1 and provides an acceptable time to reach the required power level from full power operation without allowing the plant to remain in an unacceptable condition for an extended period of time. The Completion Times of 4 hours for Required Actions A.1.1 and A.1.2.1 are not additive.

The allowed Completion Time of 72 hours to reset the trip setpoints per Required Action A.1.2.2 recognizes that, once power is reduced, the safety analysis assumptions are satisfied and there is no urgent need to reduce the trip setpoints. This is a sensitive operation that may inadvertently trip the Reactor Protection System.

A.2

Once the power level has been reduced to < 50% RTP per Required Action A.1.2.1, an incore flux map (SR 3.2.2.1) must be obtained and the measured value of $F^N_{\Delta H}$ verified not to exceed the allowed limit at the lower power level. The unit is provided 20 additional hours to perform this task

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.2.4.1 (continued)

performance of SR 3.2.4.2 in lieu of SR 3.2.4.1.

This Surveillance verifies that the QPTR, as indicated by the Nuclear Instrumentation System (NIS) excore channels or Emergency Response Facility Information System (ERFIS), is within its limits. The Frequency of 7 days when the QPTR alarm is OPERABLE is acceptable because of the low probability that this alarm can remain inoperable without detection.

When the QPTR alarm is inoperable, the Frequency is increased to 12 hours. This Frequency is adequate to detect any relatively slow changes in QPTR, because for those causes of QPT that occur quickly (e.g., a dropped rod), there typically are other indications of abnormality that prompt a verification of core power tilt.

SR 3.2.4.2

This Surveillance is modified by a Note, which states that it is not required until 12 hours after the input from one or more Power Range Neutron Flux channels are inoperable and the THERMAL POWER is ≥ 75% RTP.

With an NIS power range channel inoperable, tilt monitoring for a portion of the reactor core becomes degraded. Large tilts are likely detected with the remaining channels, but the capability for detection of small power tilts in some quadrants is decreased. Performing SR 3.2.4.2 at a Frequency of 12 hours provides an accurate alternative means for ensuring that any tilt remains within its limits.

For purposes of monitoring the QPTR when one power range channel is inoperable, the moveable incore detectors are used to confirm that the normalized symmetric power distribution is consistent with the indicated QPTR and any previous data indicating a tilt.

The symmetric thimble flux map can be used to generate symmetric thimble "tilt." This can be compared to a reference symmetric thimble tilt, from the most recent full

(continued)

IMPROVED STANDARD TECHNICAL SPECIFICATION (ISTS) CONVERSION

CHAPTER 3.2 - POWER DISTRIBUTION LIMITS

PART 10

ISTS GENERIC CHANGES

(TSTFs 95,109)

Industry/TSTF Standard Technical Specification Change Traveler

Revise completion time for reducing Power Range High trip setpoint from 8 to 72 hours

NUREGs Affected: ☐ 1430 ☑ 1431 ☐ 1432 ☐ 1433 ☐ 1434

Description:

Revise completion time for reducing Power Range High trip setpoint from 8 to 72 hours.

Justification:

As written, the Completion Time of 8 hours to reduce the Power Range Neutron Flux-High trip setpoints presents an unjustified burden on the operation of the plant. A Completion Time of 72 hours will allow time to perform a second flux map to confirm the results, or determine that the condition was temporary, without implementing an unnecessary trip setpoint change, during which there is increased potential for a plant transient and human error. Following a significant power reduction, at least 24 hours are required to re-establish steady state xenon prior to taking a flux map, and approximately 8 to 12 hours to obtain a flux map, and analyze the data. A significant potential for human error can be created through requiring the trip setpoints to be reduced within the same time frame that a unit power reduction is taking place, and within the current 8 hour period. Setpoint adjustment is estimated to take approximately 4 hours per channel (review of plant condition supportive of removing channels from service, tripping of bistables, setpoint adjustments, and channel restoration), adding 2 hours for necessary initial preparations (procedure preps, calibration equipment checks, obtaining tools and approvals), it is reasonable to expect a total of 18 hours. Further, setpoint changes should only be required for extended operation in this condition. Finally, the Bases for making this setpoint change is exactly the same as the NUREG Bases provided for the 72 hour Completion Time of LCO 3.2.1 Required Action A.4, which is also a setpoint reduction. Therefore, a Completion Time of 72 hours is proposed.

Affected Technical Specifications

Action 3.2.1B.A	Fq(z) (Fq Methodology)
Action 3.2.1A.A	Fq(z) (Fxy Methodology)
Action 3.2.1B.A Bases	Fq(z) (Fq Methodology)
Action 3.2.1A.A Bases	Fq(z) (Fxy Methodology)
Action 3.2.2.A	Nuclear Enthalpy Rise Hot Channel Factor
Action 3.2.2.A Bases	Nuclear Enthalpy Rise Hot Channel Factor

WOG Review Information

WOG-22

Originating Plant: Ginna Date Provided to OG: 09-Nov-95 Needed By:

Owners Group History:

Ginna # 4

Owners Group Resolution: Approved Date: 09-Nov-95

TSTF Review Information

TSTF Received Date: 27-Nov-95 Date Distributed to OGs for Review: 27-Nov-95

OG Review Completed: ☑ BWOG ☑ WOG ☑ CEOG ☑ BWROG

TSTF History:

CEOG - Not applicable to CEOG
BWOG - Not applicable
BWROG - Not applicable

TSTF Resolution: Approved Date: 30-Apr-96 TSTF- 95

NRC Review Information

NRC Received Date: NRC Reviewer: Reviewer Phone #:

Reviewer Comments:

Final Resolution: Final Resolution Date:

Revision History

Incorporation Into the NUREGs

File to BBS/LAN Date:

File to TSTF Date:

File Rev Incoporated:

File Rev Incorporated Date

TSTF-95

3.2 POWER DISTRIBUTION LIMITS

3.2.1A Heat Flux Hot Channel Factor ($F_Q(Z)$) (F_{xy} Methodology)

LCO 3.2.1A $F_Q(Z)$ shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. $F_Q(Z)$ not within limit.	A.1 Reduce THERMAL POWER ≥ 1% RTP for each 1% $F_Q(Z)$ exceeds limit.	15 minutes
	AND	
	A.2 Reduce AFD acceptable operation limits by the percentage $F_Q(Z)$ exceeds limit.	4 hours
	AND	
	A.3 Reduce Power Range Neutron Flux—High trip setpoints ≥ 1% for each 1% $F_Q(Z)$ exceeds limit.	~~8~~ 72 hours
	AND	
	A.4 Reduce Overpower ΔT trip setpoints ≥ 1% for each 1% $F_Q(Z)$ exceeds limit.	72 hours
	AND	
		(continued)

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3.2 POWER DISTRIBUTION LIMITS

3.2.1B Heat Flux Hot Channel Factor ($F_Q(Z)$) (F_Q Methodology)

LCO 3.2.1B $F_Q(Z)$, as approximated by $F_Q^C(Z)$ and $F_Q^W(Z)$, shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. $F_Q^C(Z)$ not within limit.	A.1 Reduce THERMAL POWER $\geq$ 1% RTP for each 1% $F_Q^C(Z)$ exceeds limit.	15 minutes
	AND	
	A.2 Reduce Power Range Neutron Flux—High trip setpoints $\geq$ 1% for each 1% $F_Q^C(Z)$ exceeds limit.	~~8~~ 72 hours
	AND	
	A.3 Reduce Overpower ΔT trip setpoints $\geq$ 1% for each 1% $F_Q^C(Z)$ exceeds limit.	72 hours
	AND	
	A.4 Perform SR 3.2.1.1.	Prior to increasing THERMAL POWER above the limit of Required Action A.1

(continued)

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3.2 POWER DISTRIBUTION LIMITS

3.2.2 Nuclear Enthalpy Rise Hot Channel Factor ($F^N_{\Delta H}$)

LCO 3.2.2 $F^N_{\Delta H}$ shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. ---------NOTE--------- Required Actions A.2 and A.3 must be completed whenever Condition A is entered. ---------------------	A.1.1	Restore $F^N_{\Delta H}$ to within limit.	4 hours
$F^N_{\Delta H}$ not within limit.	OR		
	A.1.2.1	Reduce THERMAL POWER to < 50% RTP.	4 hours
		AND	
	A.1.2.2	Reduce Power Range Neutron Flux—High trip setpoints to ≤ 55% RTP.	~~8~~ 72 hours
	AND		
	A.2	Perform SR 3.2.2.1.	24 hours
	AND		
			(continued)

TSTF-95

BASES

APPLICABILITY (continued)

reactor coolant to require a limit on the distribution of core power.

ACTIONS

A.1

Reducing THERMAL POWER by ≥ 1% for each 1% by which $F_Q(Z)$ exceeds its limit maintains an acceptable absolute power density. The Completion Time of 15 minutes provides an acceptable time to reduce power in an orderly manner and without allowing the plant to remain in an unacceptable condition for an extended period of time.

A.2

When core peaking factors are sufficiently high that LCO 3.2.3 does not permit operation at RTP, the Acceptable Operation Limits for AFD are scaled down. This percentage reduction is equal to the amount, expressed as a percentage, by which $F_Q(Z)$ exceeds its specified limit. This ensures a near constant maximum linear heat rate in units of kilowatts per foot at the acceptable operation limits. The Completion Time of 4 hours for the change in setpoints is sufficient, considering the small likelihood of a severe transient in this relatively short time period, and the preceding prompt reduction in THERMAL POWER in accordance with Required Action A.1.

A.3

A reduction of the Power Range Neutron—High trip setpoints by ≥ 1% for each 1% by which $F_Q(Z)$ exceeds its specified limit, is a conservative action for protection against the consequences of severe transients with unanalyzed power distributions. The Completion Time of 8 hours is sufficient, considering the small likelihood of a severe transient in this period, and the preceding prompt reduction in THERMAL POWER in accordance with Required Action A.1.

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(continued)

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BASES

ACTIONS (continued)

A.2

A reduction of the Power Range Neutron Flux—High trip setpoints by ≥ 1% for each 1% by which $F_Q^C(Z)$ exceeds its limit, is a conservative action for protection against the consequences of severe transients with unanalyzed power distributions. The Completion Time of 8 hours is sufficient considering the small likelihood of a severe transient in this time period and the preceding prompt reduction in THERMAL POWER in accordance with Required Action A.1.

72

A.3

Reduction in the Overpower ΔT trip setpoints by ≥ 1% for each 1% by which $F_Q^C(Z)$ exceeds its limit, is a conservative action for protection against the consequences of severe transients with unanalyzed power distributions. The Completion Time of 72 hours is sufficient considering the small likelihood of a severe transient in this time period, and the preceding prompt reduction in THERMAL POWER in accordance with Required Action A.1.

A.4

Verification that $F_Q^C(Z)$ has been restored to within its limit, by performing SR 3.2.1.1 prior to increasing THERMAL POWER above the limit imposed by Required Action A.1, ensures that core conditions during operation at higher power levels are consistent with safety analyses assumptions.

B.1

If it is found that the maximum calculated value of $F_Q(Z)$ that can occur during normal maneuvers, $F_Q^W(Z)$, exceeds its specified limits, there exists a potential for $F_Q^C(Z)$ to become excessively high if a normal operational transient occurs. Reducing the AFD by ≥ 1% for each 1% by which $F_Q^W(Z)$ exceeds its limit within the allowed Completion Time of 2 hours, restricts the axial flux distribution such that even if a transient occurred, core peaking factors are not exceeded.

(continued)

BASES

ACTIONS

A.1.1 (continued)

75% RTP, and within 24 hours after reaching or exceeding 95% RTP. In addition, Required Action A.2 is performed if power ascension is delayed past 24 hours.

A.1.2.1 and A.1.2.2

If the value of $F^N_{\Delta H}$ is not restored to within its specified limit either by adjusting a misaligned rod or by reducing THERMAL POWER, the alternative option is to reduce THERMAL POWER to < 50% RTP in accordance with Required Action A.1.2.1 and reduce the Power Range Neutron Flux—High to ≤ 55% RTP in accordance with Required Action A.1.2.2. Reducing RTP to < 50% RTP increases the DNB margin and does not likely cause the DNBR limit to be violated in steady state operation. The reduction in trip setpoints ensures that continuing operation remains at an acceptable low power level with adequate DNBR margin. The allowed Completion Time of 4 hours for Required Action A.1.2.1 is consistent with those allowed for in Required Action A.1.1 and provides an acceptable time to reach the required power level from full power operation without allowing the plant to remain in an unacceptable condition for an extended period of time. The Completion Times of 4 hours for Required Actions A.1.1 and A.1.2.1 are not additive.

72

The allowed Completion Time of 8 hours to reset the trip setpoints per Required Action A.1.2.2 recognizes that, once power is reduced, the safety analysis assumptions are satisfied and there is no urgent need to reduce the trip setpoints. This is a sensitive operation that may inadvertently trip the Reactor Protection System.

A.2

Once the power level has been reduced to < 50% RTP per Required Action A.1.2.1, an incore flux map (SR 3.2.2.1) must be obtained and the measured value of $F^N_{\Delta H}$ verified not to exceed the allowed limit at the lower power level. The unit is provided 20 additional hours to perform this task over and above the 4 hours allowed by either Action A.1.1 or Action A.1.2.1. The Completion Time of 24 hours is acceptable because of the increase in the DNB margin, which

(continued)

Industry/TSTF Standard Technical Specification Change Traveler

Clarify the QPTR surveillances

NUREGs Affected: ☐ 1430 ☑ 1431 ☐ 1432 ☐ 1433 ☐ 1434

Description:

The surveillances of LCO 3.2.4, "QPTR" are clarified.

Justification:

Required Action A.2 is intended to result in a periodic re-check and re-adjustment of thermal power based on existing QPTR. However, Required Action A.2 specifically requires performance of SR 3.2.4.1 which may not be viable if Power Range Neutron Flux channel(s) are inoperable. In this event, SR 3.2.4.2 should be performed using the incore detectors. To more correctly specify the intended Required Action, A.2 is revised to simply require "Determine QPTR" rather than specifying an SR to perform.

Note 2 to SR 3.2.4.1 (QPTR by calculation) allows performance of SR 3.2.4.2 (QPTR using incores) "if adequate Power Range Neutron Flux channel inputs are not OPERABLE." Besides posing some ambiguity as to what "adequate...inputs" are, it is overly restrictive. QPTR determination using incore detectors can adequately verify the requirements for QPTR to be <= 1.0 in all cases; not just when flux channels are inoperable.

SR 3.2.4.2 presentation of the frequency for verifying QPTR using incore detectors is revised to be consistent with typical presentation formats that provide for a period of time after establishing conditions. This consistency should help avoid misinterpretations.

Affected Technical Specifications

Action 3.2.4.A	Quadrant Power Tilt Ratio (QPTR)
SR 3.2.4.1	Quadrant Power Tilt Ratio (QPTR)
SR 3.2.4.1 Bases	Quadrant Power Tilt Ratio (QPTR)
SR 3.2.4.2	Quadrant Power Tilt Ratio (QPTR)
SR 3.2.4.2 Bases	Quadrant Power Tilt Ratio (QPTR)

WOG Review Information

WOG-45

Originating Plant: Date Provided to OG: 18-Jan-96 Needed By: 01-Jun-96

Owners Group History:

Owners Group Resolution: Approved Date: 18-Jan-96

TSTF Review Information

TSTF Received Date: 20-Feb-96 Date Distributed to OGs for Review: 12-Apr-96

OG Review Completed: ☑ BWOG ☑ WOG ☑ CEOG ☑ BWROG

TSTF History:

NA CEOG, BWOG, BWROG

TSTF Resolution: Approved Date: 28-May-96 **TSTF- 109**

NRC Review Information

NRC Received Date: NRC Reviewer: Reviewer Phone #:

Reviewer Comments:

Final Resolution: Final Resolution Date:

Revision History

Incorporation Into the NUREGs

File to BBS/LAN Date:

File to TSTF Date:

File Rev Incoporated:

File Rev Incorporated Date

TSTF-109

3.2 POWER DISTRIBUTION LIMITS

3.2.4 QUADRANT POWER TILT RATIO (QPTR)

LCO 3.2.4 The QPTR shall be ≤ 1.02.

APPLICABILITY: MODE 1 with THERMAL POWER > 50% RTP.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. QPTR not within limit.	A.1	Reduce THERMAL POWER ≥ 3% from RTP for each 1% of QPTR > 1.00.	2 hours
	AND		
	A.2	~~Perform SR 3.2.4.1~~ Determine QPTR and reduce THERMAL POWER ≥ 3% from RTP for each 1% of QPTR > 1.00.	Once per 12 hours
	AND		
	A.3	Perform SR 3.2.1.1 and SR 3.2.2.1.	24 hours AND Once per 7 days thereafter
	AND		
	A.4	Reevaluate safety analyses and confirm results remain valid for duration of operation under this condition.	Prior to increasing THERMAL POWER above the limit of Required Action A.1
	AND		

(continued)

TSTF-105

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.2.4.1	-------------------NOTES------------------- 1. With input from one Power Range Neutron Flux channel inoperable and THERMAL POWER < 75% RTP, the remaining three power range channels can be used for calculating QPTR. 2. SR 3.2.4.2 may be performed in lieu of this Surveillance if adequate Power Range Neutron Flux channel inputs are not OPERABLE. --- Verify QPTR is within limit by calculation.	7 days AND Once within 12 hours and every 12 hours thereafter with the QPTR alarm inoperable
SR 3.2.4.2	Not Until 12 hours after -------------------NOTE------------------- Only required to be performed if input from one or more Power Range Neutron Flux channels are inoperable with THERMAL POWER ≥ 75% RTP. --- Verify QPTR is within limit using the movable incore detectors.	Once within 12 hours AND 12 hours thereafter

BASES

ACTIONS

A.6 (continued)

core power does not reach RTP within 24 hours, but is increased slowly, then the peaking factor surveillances must be performed within 48 hours of the time when the ascent to power was begun. These Completion Times are intended to allow adequate time to increase THERMAL POWER to above the limit of Required Action A.1, while not permitting the core to remain with unconfirmed power distributions for extended periods of time.

Required Action A.6 is modified by a Note that states that the peaking factor surveillances may only be done after the excore detectors have been calibrated to show zero tilt (i.e., Required Action A.5). The intent of this Note is to have the peaking factor surveillances performed at operating power levels, which can only be accomplished after the excore detectors are calibrated to show zero tilt and the core returned to power.

B.1

If Required Actions A.1 through A.6 are not completed within their associated Completion Times, the unit must be brought to a MODE or condition in which the requirements do not apply. To achieve this status, THERMAL POWER must be reduced to < 50% RTP within 4 hours. The allowed Completion Time of 4 hours is reasonable, based on operating experience regarding the amount of time required to reach the reduced power level without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.2.4.1

SR 3.2.4.1 is modified by two Notes. Note 1 allows QPTR to be calculated with three power range channels if THERMAL POWER is < 75% RTP and the input from one Power Range Neutron Flux channel is inoperable. Note 2 allows performance of SR 3.2.4.2 in lieu of SR 3.2.4.1 if more than one input from Power Range Neutron Flux channels are inoperable.

This Surveillance verifies that the QPTR, as indicated by the Nuclear Instrumentation System (NIS) excore channels, is

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.2.4.1 (continued)

within its limits. The Frequency of 7 days when the QPTR alarm is OPERABLE is acceptable because of the low probability that this alarm can remain inoperable without detection.

When the QPTR alarm is inoperable, the Frequency is increased to 12 hours. This Frequency is adequate to detect any relatively slow changes in QPTR, because for those causes of QPT that occur quickly (e.g., a dropped rod), there typically are other indications of abnormality that prompt a verification of core power tilt.

SR 3.2.4.2

This Surveillance is modified by a Note, which states that it is required only when the input from one or more Power Range Neutron Flux channels are inoperable and the THERMAL POWER is ≥ 75% RTP.

With an NIS power range channel inoperable, tilt monitoring for a portion of the reactor core becomes degraded. Large tilts are likely detected with the remaining channels, but the capability for detection of small power tilts in some quadrants is decreased. Performing SR 3.2.4.2 at a Frequency of 12 hours provides an accurate alternative means for ensuring that any tilt remains within its limits.

For purposes of monitoring the QPTR when one power range channel is inoperable, the moveable incore detectors are used to confirm that the normalized symmetric power distribution is consistent with the indicated QPTR and any previous data indicating a tilt. The incore detector monitoring is performed with a full incore flux map or two sets of four thimble locations with quarter core symmetry. The two sets of four symmetric thimbles is a set of eight unique detector locations. These locations are C-8, E-5, E-11, H-3, H-13, L-5, L-11, and N-8 for three and four loop cores.

The symmetric thimble flux map can be used to generate symmetric thimble "tilt." This can be compared to a reference symmetric thimble tilt, from the most recent full

(continued)

SUPPLEMENT 1
CONVERSION PACKAGE SECTION 3.3
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 11 to Serial: RNP-RA/96-0141.

	Remove Page	Insert Page
a.	Part 1, "Markup of Current Technical Specifications (CTS)"	
	3.5-1, 3.5-13b, 3.5-13c, 3.5-12, 3.5-13, 3.5-13a, 3.5-1, 3.5-15a, 3.5-17a, 3.5-14, 3.5-16, 3.5-17, 4.1-12, 3.5-1, 3.5-15a, 3.5-15a, 3.5-15, 3.5-1,3.5-17a, 3.5-16	3.5-1, 3.5-13b, 3.5-13c, 3.5-12, 3.5-13, 3.5-13a, 3.5-1, 3.5-15a, 3.5-17a, 3.5-14, 3.5-16, 3.5-17, 4.1-12,3.5-1, 3.5-15a (sheet 1) 3.5-15a (sheet 2) 3.5-15, 3.5-1, 3.5-17a, 3.5-16
b.	Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
	5 through 14	5 through 14, 14a through 14j
c.	Part 3, "No Significant Hazards Consideration (NSHC), And Basis For Categorical Exclusion From 10 CFR 51.22"	
	No Changes	
d.	Part 4, "Markup of NUREG-1431, Revision 1, `Standard Technical Specifications - Westinghouse Plants,' (ISTS)"	
	3.3-15 and 3.3-40	3.3-15 and 3.3-40
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	No Changes	
f.	Part 6, "Markup of ISTS Bases"	
	No Changes	
g.	Part 7, "Justification for Differences (JFDs) to ISTS Bases"	
	No Changes	
h.	Part 8, "Proposed HBRSEP, Unit No. 2 ITS"	
	No Changes	
i.	Part 9, "Proposed Bases to HBRSEP, Unit No. 2 ITS"	
	No Changes	
j.	Part 10, "ISTS Generic Changes"	
	No Changes	

Specification 3.3.1

A1

3.5 INSTRUMENTATION SYSTEMS

3.5.1 Operational Safety Instrumentation

Applicability

Applies to plant operational safety instrumentation systems.

Objective

To provide for automatic initiation of the Engineered Safety Features in the event that principal process variable limits are exceeded, and to delineate the conditions of the plant instrumentation and safety circuits necessary to ensure reactor safety.

Specification

ITS

3.5.1.1 The Engineered Safety Features initiation instrumentation setting limits shall be as stated in Table 3.5-1. See 3.2.2

[ACTION A] [Applicability]

3.5.1.2 For on-line testing or in the event of a subsystem instrumentation channel failure, plant operation at rated power shall be permitted to continue in accordance with Tables ~~3.5-2 through 3.5-3~~ 3.3.3-1

3.5.1.3 In the event the number of channels in service listed in Table 3.5-5 falls below the limits given in the column entitled Minimum Channels Operable, operation shall be limited according to the requirement shown in Column 2. See 3.3.3

3.5.1.4 The containment ventilation isolation function is only required when containment integrity is required. See 3.3.6

[ACTION A]

3.5.1.5 In the event the number of operable channels of a particular functional unit listed in Tables ~~3.5-2, 3, or 4~~ Table 3.3.3-1 falls below the limits given in the column entitled Total Number of Channels, operation shall be limited according to the requirement shown in Column 3. immediately M2

Add ACTIONS "Note" A5

ITS

TABLE 3.5-2 (Continued)

REACTOR TRIP INSTRUMENTATION LIMITING OPERATING CONDITIONS

TABLE NOTATIONS

(and rods not fully inserted or Rod Control System capable of rod withdrawal) (L35)

(a) * With the reactor trip breakers closed.

(b) ** Below the P-10 (Low Setpoint Power Range Neutron Flux Interlock) setpoint.

(d) *** Below the P-6 (Intermediate Range Neutron Flux Interlock) setpoint.

(h) **** Above the P-10 (Low Setpoint Power Range Neutron Flux Interlock) setpoint or P-7 (Turbine First Stage Pressure Interlock) setpoint and below the P-8 (Low Setpoint Power Range Neutron Flux Interlock) setpoint. (L5)

(f) ***** Above the P-10 (Low Setpoint Power Range Neutron Flux Interlock) setpoint or P-7 (Turbine First Stage Pressure Interlock) setpoint.

Add Notes (c),(e),(i) (A26)

ACTION STATEMENTS

[ACTION B] ACTION 1 With the number of OPERABLE channels one less (48) than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 12 hours, or be in the HOT SHUTDOWN CONDITION (MODE 3) within the next 6 hours (and open RTBs in 55 hours). (L6)

[ACTION D] ACTION 2 With the number of OPERABLE channels one less than the Total Number of Channels, Startup and/or Power Operation may proceed provided the following Conditions are satisfied:

(Add RA D.2.2 "NOTE") (L7)

a. The inoperable channel is placed in the tripped condition within 1 (6) hour. (L8)

b. Either, thermal power is restricted to less than or equal to 75% of rated power and the Power Range Neutron Flux trip setpoint is reduced to less than or equal to 85% of rated power within 4 hours; or, the Quadrant Power Tilt Ratio is monitored within 12 hours and every 12 hours thereafter, using the movable incore detectors to confirm that the normalized symmetric power distribution is consistent with the indicated Quadrant Power Tilt Ratio (or be in MODE 3 in 12 hours). (M6)

ACTION 3 With the number of channels OPERABLE one less than the Minimum Channels OPERABLE requirement and with the thermal power level:

[ACTION H] a. Below the P-6 (Intermediate Range Neutron Flux Interlock) setpoints, restore the inoperable channel to OPERABLE status prior to increasing thermal power above the P-6 setpoint.

[ACTION F] b. Above the P-6 (Intermediate Range Neutron Flux Interlock) setpoint but below 10% of rated power, restore the inoperable channel to OPERABLE status prior to increasing thermal power above 10% of rated power. (M7)

(Reduce power to < P6 in 2 hours or increase power to > P10 in 2 hours.) (L36)

(A1)

REACTOR TRIP INSTRUMENTATION LIMITING OPERATING CONDITIONS

TABLE NOTATIONS

[ACTION I] ACTION 4 With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, suspend all operations involving positive reactivity changes. immediately (M2)

[ACTION L] ACTION 5 With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, verify compliance with Shutdown Margin within 1 hour and at least once per 12 hours thereafter. Add RA L.1 and L.2 (M3)

[ACTION E] ACTION 6 With the number of OPERABLE channels one less than the Total Number of Channels, Startup and/or Power Operation may proceed ~~until performance of the next required operational test~~ provided the inoperable channel is placed into the tripped condition within 1 hour. 6 Or be in MODE 3 in 12 hours (L3) (M4) (L3)

[ACTION M] [ACTION N] <P8 in 12 hrs [ACTION P] <P7 in 10 hrs ACTION 7 With the number of OPERABLE channels one less than the Total Number of Channels, place the inoperable channel into the tripped condition within 1 hour. 6 ~~and restore the inoperable channel to OPERABLE status within 7 days or be in at least the Hot Shutdown Condition within the next 8 hours.~~ or reduce THERMAL POWER <P7 in 12 hours (L4)

[ACTION C] [ACTION K] ACTION 8 With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or open the Reactor Trip Breakers within the next hour. in 49 hours

~~ACTION 9 Log individual rod position within 1 hour and every hour thereafter, and following load changes of >10% of rated power, or after >30 inches of control rod motion. In addition to the above ACTIONS, if both rod misalignment monitors (15.A and 15.B) are inoperable with reactor power >50% of rated power for 2 hours or more, the nuclear overpower trip shall be reset to ≤ 93% or rated power.~~

~~ACTION 10 Log individual upper and lower ion chamber currents within 1 hour and every hour thereafter, and following load changes of >10% of rated power, or above >30 inches of control rod motion. In addition to the above ACTIONS, if both rod misalignment monitors (15.A and 15.B) are inoperable with reactor power >50% of rated power for two hours or more, the nuclear overpower trip shall be reset to ≤ 93 percent of rated power.~~

(LA7)

Specification 3.3.1

A1

TABLE 3.5-2

REACTOR TRIP INSTRUMENTATION LIMITING OPERATING CONDITIONS

ITS

A27

	NO.	FUNCTIONAL UNIT	1 TOTAL NO. OF CHANNELS	2 MINIMUM CHANNELS OPERABLE	3 OPERATOR ACTION IF COLUMN 1 OR 2 CANNOT BE MET	APPLICABLE CONDITIONS
[T3.3.1-1(1)]	1.	Manual	2 2	2 2	ACTION 1 (B) ACTION 8 (C)	Reactor Critical (MODES 1, 2) Hot/Cold Shutdown* (Modes 3, 4, 5) (a)
[T3.3.1-1(2)]	2.	Nuclear Flux Power Range* A. High Setpoint B. Low Setpoint	 4 4	 3 3	 ACTION 2 (D) ACTION 2 (E)	(MODES 1, 2) Reactor Critical Reactor Critical** (b) (c)(d)
[T3.3.1-1(3)]	3.	Nuclear Flux Intermediate Range	2	2	ACTION 3 (F, G, H)	(MODES 1, 2) Reactor Critical** (A28)
[T3.3.1-1(4)]	4.	Nuclear Flux Source Range A. Startup B. Shutdown C. Shutdown	 2 2 (1) 2	 2 1 2	 ACTION 4 (I) ACTION 5 (L) ACTION 8 (K)	(d) (e) Reactor Critical*** (MODE 2) Hot/Cold Shutdown Hot/Cold Shutdown* (MODES 3, 4, 5) (a)
[T3.3.1-1(5)]	5.	Overtemperature ΔT	3	2	ACTION 6 (E)	Reactor Critical (MODES 1, 2)
[T3.3.1-1(6)]	6.	Overpower ΔT	3	2	ACTION 6	Reactor Critical
[T3.3.1-1(2a)]	7.	Low Pressurizer Pressure	3	2	ACTION 6 (M) (L10)	***** (MODE 1 (f))
[T3.3.1-1(2b)]	8.	Hi Pressurizer Pressure	3	2	ACTION 6 (E)	Reactor Critical (MODES 1, 2)
[T3.3.1-1(8)]	9.	Pressurizer-Hi Water Level	3	2	ACTION 6 (M) (L10)	***** (MODE 1 (f))
[T3.3.1-1(9)]	10.	Low Reactor Coolant Flow A. Single Loop B. Two Loop	 3/loop 3/loop	 2/loop 2/loop	 ACTION 6 (M) ACTION 6 (M)	(MODE 1 (g)) ≥45% of rated power **** (MODE 1 (h))

Amendment No. 85, 175

Supplement 1

TABLE 3.5-2 (Continued)

REACTOR TRIP INSTRUMENTATION LIMITING OPERATING CONDITIONS

ITS

A27

	NO.	FUNCTIONAL UNIT	1 TOTAL NO. OF CHANNELS	2 MINIMUM CHANNELS OPERABLE	3 OPERATOR ACTION IF COLUMN 1 OR 2 CANNOT BE MET	APPLICABLE CONDITIONS
[T 3.3.1-1(15)]	11.	Turbine Trip				L11
		A. Auto Stop Oil Pressure	3	2	ACTION 6 P	***** MODE 1 (f)
		B. Turb Stop Valves	2	2	ACTION 6	*****
[T 3.3.1-1(13)]	12.	Lo Lo Steam Generator Water Level	3/SG	2/SG	ACTION 6 E	Reactor Critical MODES 1,2
[T 3.3.1-1(12)]	13.	Underfrequency 4 KV System RCPs	3 1/bus	2	ACTION 6 M	L10 Reactor Critical MODE 1 (f) L12
[T 3.3.1-1(11)]	14.	Undervoltage on 4 KV System	3 1/bus	2	ACTION 6 M	Reactor Critical L4
	15.	Control Rod Misalignment Monitor				
		A. ERFIS Rod Position Deviation	1	1	ACTION 9	Reactor Critical
		B. Quadrant Power Tilt Monitor (upper and lower ex-core neutron detectors) "Detector Current Comparator"	1	1	ACTION 10	>50% of rated power

LA7

Amendment No. ~~85~~, 175

Supplement 1

Specification 3.3.1

(A1)

ITS

TABLE 3.5-2 (Continued)

REACTOR TRIP INSTRUMENTATION LIMITING OPERATING CONDITIONS

NO.	FUNCTIONAL UNIT	1 TOTAL NO. OF CHANNELS	2 MINIMUM CHANNELS OPERABLE	3 OPERATOR ACTION IF COLUMN 1 OR 2 CANNOT BE MET	APPLICABLE CONDITIONS
[T3.3.1-1(14)] 16.	Low Steam Generator Level Coincident With Steam Flow/Feedwater Flow Mismatch	2 Level and 2 Stm/Feed Flow Mismatch Per SG	1 Level and 2 Stm/Feed Flow Mismatch Per SG OR 2 Level and 1 Stm/Feed Flow Mismatch Per SG	ACTION 6 (E)	Reactor Critical (MODES 1, 2)

Amendment No. 175

Supplement 1

Specification 3.3.2

(A1)

3.5 INSTRUMENTATION SYSTEMS

3.5.1 Operational Safety Instrumentation

Applicability

Applies to plant operational safety instrumentation systems.

Objective

To provide for automatic initiation of the Engineered Safety Features in the event that principal process variable limits are exceeded, and to delineate the conditions of the plant instrumentation and safety circuits necessary to ensure reactor safety.

Specification

ITS

3.5.1.1 [LCO 3.3.2] The Engineered Safety Features initiation instrumentation setting limits shall be as stated in Table 3.5-1 3.3.2-1 shall be OPERABLE

3.5.1.2 For on-line testing or in the event of a subsystem instrumentation channel failure, plant operation at rated power shall be permitted to continue in accordance with Tables 3.5-2 through 3.5-5 3.3.2-1.

3.5.1.3 In the event the number of channels in service listed in Table 3.5-5 falls below the limits given in the column entitled Minimum Channels Operable, operation shall be limited according to the requirement shown in Column 2. See 3.3.3

3.5.1.4 The containment ventilation isolation function is only required when containment integrity is required. See 3.3.6 Table 3.3.2-1

3.5.1.5 [ACTION A] In the event the number of operable channels of a particular functional unit listed in Tables 3.5-2, 3, or 4 falls below the limits given in the column entitled Total Number of Channels, operation shall be limited according to the requirement shown in Column 3. Immediately (A2)

TABLE 3.5-3 (Continued)

ITS

ENGINEERED SAFETY FEATURES INSTRUMENTATION LIMITING OPERATING CONDITIONS

TABLE NOTATIONS

[T3.3.2-1 NOTE a] # Above Low Pressure SI Block Permit interlock.

[T3.3.2-1 Note d] ## Trip function may be blocked below Low T_{avg} Interlock setpoint.

~~The reactor may remain critical below the Power Operating conditions with this feature inhibited for the purpose of starting reactor coolant pumps.~~ (See 3.3.5)

[ACTION B] ACTION 11 With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in at least the Hot Shutdown Condition within the next ~~8~~ 6 hours and the Cold Shutdown Condition within the following 30 hours. (M22)

[ACTION C, ACTION D, ACTION E, ACTION G] ACTION 12 With the number of OPERABLE channels one less than the Total Number of Channels, Power Operation may proceed ~~until performance of the next required operational test~~ provided the inoperable channel is placed into the tripped condition within ~~1~~ 6 hour. (L21)

[ACTION I] ACTION 13 With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 1 hour or be in ~~at least the Hot Shutdown Condition within the next 8 hours and the Cold Shutdown Condition within the following 30 hours.~~ MODE 3 in 7 hrs, MODE 4 in 13 hrs, MODE 5 in 37 hrs (M24)

~~ACTION 14 With the number of OPERABLE channels one less than the Total Number of Channels, place the inoperable channel into the blocked condition within 1 hour, and restore the inoperable channel to OPERABLE status within 48 hours or be in at least the Hot Shutdown Condition within the next 8 hours and the Cold Shutdown Condition within the following 30 hours.~~ (See 3.3.5)

(M23)

[ACTION C] or be in MODE 3 in 12 hours and MODE 5 in 42 hours

[ACTION D, G] or be in MODE 3 in 12 hours and MODE 4 in 18 hours

[ACTION E] or be in MODE 3 in 12 hours, MODE 4 in 18 hours and MODE 5 in 36 hours

Add RA E.1 "NOTE"

Add ACTIONS "Note" (A5)

Specification 3.3.2

(A1)

ITS

TABLE 3.5-4 (Continued)

ISOLATION FUNCTIONS INSTRUMENTATION LIMITING OPERATING CONDITIONS

TABLE NOTATIONS

See 3.3.6

ACTION 15 With less than the Total Number of Channels. Power Operations may continue provided the Containment Ventilation Purge and Exhaust valves are maintained closed.

[ACTION F]

ACTION 16 With the number of channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or declare the associated valve inoperable and take the ACTION required by Specification 3.4.3.

M25

[ACTION B] be in MODE 3 in 54 hours and MODE 5 in 84 hrs

[ACTION F] be in MODE 3 in 54 hrs and MODE 4 in 60 hrs

Supplement 1

Specification 3.3.2
(A1)

ITS

TABLE 3.5-3

ENGINEERED SAFETY FEATURES INSTRUMENTATION LIMITING OPERATING CONDITIONS

(A27)

ITS	NO.	FUNCTIONAL UNIT	1 TOTAL NO. OF CHANNELS	2 MINIMUM CHANNELS OPERABLE	3 OPERABLE ACTION IF COLUMN 1 OR 2 CANNOT BE MET	APPLICABLE CONDITIONS
	1.	SAFETY INJECTION				
[T3.3.2-1(1a)]	A.	Manual	2	2	ACTION 1 (B)	>200°F (MODE 1,2,3,4)
[T3.3.2-1(1c)]	B.	High Containment Pressure (Hi Level)	3	2	ACTION 12 (E)	>200°F (MODE 1,2,3,4)
[T3.3.2-1(1d)]	C.	High Differential Pressure between Any Steam Line and the Steam Header	3/Steam Line	2/Steam Line	ACTION 12 (D)	# (MODE 1,2,3(a))
[T3.3.2-1(1d)]	D.	Pressurizer Low Pressure	3	2	ACTION 12 (D)	# (MODES 1,2,3(a))
[T3.3.2-1(4d)]	E.	High Steam Flow in 2/3 Steam Lines Coincident with Low T_{avg} in 2/3 loops	2/Steam Line and 1 T_{avg} Loop	1/Steam Line and 1 T_{avg} in 2 Loops OR 2/Steam Line and 1 T_{avg}	ACTION 12 (D)	≥350°F ## (A11) (C) (MODES 1,2(b),3(b))
[T3.3.2-1(4e)]	F.	High Steam Flow in 2/3 Steam Lines Coincident with Low Steam Pressure in 2/3 lines	2/Steam Line and 1 Press/Line	1/Steam Line and 1 Press in 2 Lines, OR 2/Steam Line and 1 Press	ACTION 12 (E)	≥350°F ##
	2.	CONTAINMENT SPRAY				
[T3.3.2-1(2a)]	A.	Manual	2	2	ACTION 13 (M24) (I)	>200°F (MODES 1,2,3,4)
[T3.3.2-1(3a)]	B.	High Containment Pressure (Hi Hi Level)	3/Set	2/Set	ACTION 12 (E)	>200°F (MODES 1,2,3,4)

Amendment No. ~~85~~, 175

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(A1)

TABLE 3.5-4

ISOLATION FUNCTIONS INSTRUMENTATION LIMITING OPERATING CONDITIONS

ITS

(A27)

NO.	FUNCTIONAL UNIT	1 TOTAL NO. OF CHANNELS	~~2 MINIMUM CHANNELS OPERABLE~~	3 OPERABLE ACTION IF COLUMN 1 OR 2 CANNOT BE MET	APPLICABLE CONDITIONS
1.	CONTAINMENT ISOLATION				
	A. Phase A				
[T 3.3.2-1 (3a3)]	i. Safety Injection	See Item No. 1 of Table 3.5-3 for all Safety Injection initiating functions and requirements			MODES 1,2,3,4
[T 3.3.2-1 (3a1)]	ii. Manual	2	2	ACTION ~~N~~ B	~~>200°F~~ (A27)
[T3.3.2-1 (3b)]	B. Phase B	See Item No. 2 of Table 3.5-3 for all Containment Spray initiating functions and requirements			
	C. Ventilation Isolation				(See 3.3.6)
	i. High Containment Activity, Gaseous	1	0	ACTION 15	During Containment Purge
	ii. High Containment Activity, Particulate	1	0	ACTION 15	During Containment Purge
	iii. Phase A	See Item No. 1.A of Table 3.5-4 for all Phase A initiating functions and requirements			

Add Table 3.3.2-1 Items 1b, 2b, 3a(2), 3b(2), 4b, and 5a

Add ACTIONS C, G.

(L13)

Specification 3.3.2

(A1)

TABLE 3.5-4 (Continued)

ISOLATION FUNCTIONS INSTRUMENTATION LIMITING OPERATING CONDITIONS

ITS

(A27)

NO.	FUNCTIONAL UNIT	1 TOTAL NO. OF CHANNELS	2 ~~MINIMUM CHANNELS OPERABLE~~	3 OPERABLE ACTION IF COLUMN 1 OR 2 CANNOT BE MET	APPLICABLE CONDITIONS
2.	STEAM LINE ISOLATION				
[T3.3.2-1 (1f)] A.	High Steam Flow in 2/3 Steam Lines Coincident with Low T_{avg} in 2/3 loops	See Item No. 1.E of Table 3.5-3 for initiating functions and requirements			
[T3.3.2-1 (1g)] B.	High Steam Flow in 2/3 Steam Lines Coincident with Low Steam Pressure in 2/3 lines	See Item No. 1.F of Table 3.5-3 for initiating functions and requirements			
[T3.3.2-1 (4c)] C.	High Containment Pressure (Hi Hi Level)	See Item No. 2.B of Table 3.5-3 for initiating functions and requirements (A27)			
[T3.3.2-1 (4a)] D.	Manual	1/Line	~~1/Line~~	ACTION ~~16~~ F (M25)	~~≥350°F~~ MODES 1, 2[(b)], 3[(b)]
3.	FEEDWATER LINE ISOLATION				
[T3.3.2-1 (5)] A.	Safety Injection	See Item No. 1 of Table 3.5-3 for all Safety Injection initiating functions and requirements			

Add ACTION H
SR 3.3.2.1 SR 3.3.3.5
SR 3.3.2.3 SR 3.3 2.7
SR 3.3.2.4
T 3.3.2-1 Item 6
(M27)

Add T 3.3.2-1 "Allowable Value" Column (M12)

Supplement 1

Specification 3.3.2 (A1)

ITS

TABLE 4.1-3

FREQUENCIES FOR EQUIPMENT TESTS

		Check	Frequency	Maximum Time Between Tests	
1.	Control Rods	Rod drop times of all full length rods	Each refueling shutdown	NA*	See 3.1.4
2.	Control Rod	Partial movement of all full length rods	Every 2 weeks during reactor critical operations	20 days	
3.	Pressurizer Safety Valves	Set point	Each refueling shutdown	NA	See 3.4.10
4.	Main Steam Safety Valves	Verify each required MSSV lift setpoint per Table 4.1-4 in accordance with the Inservice Testing Program. Following testing, lift setting shall be within +/- 1%.	In accordance with the Inservice Testing Program	NA	See 3.7.1
[T3.3.2-1(3) SR 3.3.2.6] 5.	Containment Isolation Trip	~~Functioning~~ TADOT	~~Each refueling shutdown~~ 18 Months	NA	
6.	Refueling System Interlocks	Functioning	Prior to each refueling shutdown	NA	See 3.9.1
7.	Service Water System	Functioning	Each refueling shutdown	NA	See 3.7.7
~~8.~~	~~DELETED~~				
9.	Primary System Leakage	Evaluate	Daily when reactor coolant system is above cold shutdown condition	NA	See 3.4.13
10.	Diesel Fuel Supply	Fuel Inventory	Weekly	10 days	See 3.8.3
~~11.~~	~~DELETED~~				
12.	Turbine Steam Stop, Control, Reheat Stop, and Interceptor Valves	Closure	Quarterly during power operation and prior to startup	115 days	See 3.7.1

Add SR 3.3.2.6 "NOTE" ← A10

Supplement 1

Specification 3.3

A17

3.5 INSTRUMENTATION SYSTEMS

3.5.1 Operational Safety Instrumentation

Applicability

Applies to plant operational safety instrumentation systems.

Objective

To provide for automatic initiation of the Engineered Safety Features in the event that principal process variable limits are exceeded, and to delineate the conditions of the plant instrumentation and safety circuits necessary to ensure reactor safety.

Specification

ITS

3.5.1.1 The Engineered Safety Features initiation instrumentation setting limits shall be as stated in Table 3.5-1. See 3.3.2

[LCO 3.3.3] 3.5.1.2 For on-line testing or in the event of a subsystem instrumentation channel failure, plant operation at rated power shall be permitted to continue in accordance with Tables 3.5-2 through 3.5-5. in MODES 1, 2 and 3 M28 3.3.3-1

[LCO 3.3.3] 3.5.1.3 In the event the number of channels in service listed in Table 3.5-6 falls below the limits given in the column entitled Minimum Channels Operable, operation shall be limited according to the requirement shown in Column 8. 3.3.3-1 Required Condition

3.5.1.4 The containment ventilation isolation function is only required when containment integrity is required. See 3.3.6

3.5.1.5 In the event the number of operable channels of a particular functional unit listed in Tables 3.5-2, 3, or 4 falls below the limits given in the column entitled Total Number of Channels, operation shall be limited according to the requirement shown in Column 3. See 3.3.1 3.3.2

Add ACTIONS "NOTE 1" A29

Add ACTIONS "NOTE 2" A5

TABLE 3.5-3 (Continued)

ENGINEERED SAFETY FEATURES INSTRUMENTATION LIMITING OPERATING CONDITIONS

TABLE NOTATIONS

Above Low Pressure SI Block Permit interlock.

Trip function may be blocked below Low T_{avg} Interlock setpoint.

See 3.3.2

The reactor may remain critical below the Power Operating conditions with this feature inhibited for the purpose of starting reactor coolant pumps.

[Applicability NOTE]

ACTION 11 With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in at least the Hot Shutdown Condition within the next 8 hours and the Cold Shutdown Condition within the following 30 hours.

ACTION 12 With the number of OPERABLE channels one less than the Total Number of Channels. Power Operation may proceed until performance of the next required operational test provided the inoperable channel is placed into the tripped condition within 1 hour.

ACTION 13 With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 1 hour or be in at least the Hot Shutdown Condition within the next 8 hours and the Cold Shutdown Condition within the following 30 hours.

ACTION 14 With the number of OPERABLE channels (per bus) one less than the Total Number of Channels; place the inoperable channel into the ~~blocked~~ (bypassed) condition within ~~1~~ (6) hour ~~and restore the inoperable channel to OPERABLE status within 48 hours or be in at least the Hot Shutdown Condition within the next 8 hours and the Cold Shutdown Condition within the following 30 hours.~~ (L28)

(One or more loss of Voltage Functions)

(or enter applicable condition(s) and RA(s) for the associated DG made inoperable by LOP DG start instrumentation immediately)

(A1)

ITS

TABLE 3.5-3 (Continued)

ENGINEERED SAFETY FEATURES INSTRUMENTATION LIMITING OPERATING CONDITIONS

TABLE NOTATIONS

#	Above Low Pressure SI Block Permit interlock.
##	Trip function may be blocked below Low T_{avg} Interlock setpoint.
###	The reactor may remain critical below the Power Operating conditions with this feature inhibited for the purpose of starting reactor coolant pumps.

See 3.3.2

[Applicability Note]

ACTION 11 With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in at least the Hot Shutdown Condition within the next 8 hours and the Cold Shutdown Condition within the following 30 hours.

ACTION 12 With the number of OPERABLE channels one less than the Total Number of Channels. Power Operation may proceed until performance of the next required operational test provided the inoperable channel is placed into the tripped condition within 1 hour.

ACTION 13 With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 1 hour or be in at least the Hot Shutdown Condition within the next 8 hours and the Cold Shutdown Condition within the following 30 hours.

ACTION 14 With the number of OPERABLE channels (per bus) one less than the Total Number of Channels; place the inoperable channel into the ~~blocked~~ (tripped) condition within (1) hour ~~and restore the inoperable channel to OPERABLE status within 48 hours or be in at least the Hot Shutdown Condition within the next 8 hours and the Cold Shutdown Condition within the following 30 hours.~~

[ACTION B] [ACTION D] (6) (L29)

One or more degraded voltage functions

Or enter applicable condition(s) and RA(s) for the associated DG made inoperable by LOP DG start instrumentation immediately

Add RA B.1 "Note" (L30)

Add ACTION C (M37)

A1

ITS

TABLE 3.5-3 (Continued)

ENGINEERED SAFETY FEATURES INSTRUMENTATION LIMITING OPERATING CONDITIONS

A27

NO.	FUNCTIONAL UNIT	1 TOTAL NO. OF CHANNELS	2 MINIMUM CHANNELS OPERABLE	3 OPERABLE ACTION IF COLUMN 1 OR 2 CANNOT BE MET	APPLICABLE CONDITIONS
3.	LOSS OF POWER				
A.	480V Emerg. Bus Undervoltage (Loss of Voltage) [LCO 3.3.5]	2/Bus	1/Bus	ACTION 14	Reactor Critical
B.	480V Emerg. Bus Undervoltage (Degraded Voltage) [LCO 3.3.5]	3/Bus	2/Bus	ACTION 14	Reactor Critical ###

Shall be OPERABLE

MODES 1, 2, 3, and 4, when associated DC is required to be OPERABLE by LCO 3.8.2

M36

Add ACTIONS "NOTE"

A5

Specification 3.3.6

3.5 INSTRUMENTATION SYSTEMS

3.5.1 Operational Safety Instrumentation

Applicability

Applies to plant operational safety instrumentation systems.

Objective

To provide for automatic initiation of the Engineered Safety Features in the event that principal process variable limits are exceeded, and to delineate the conditions of the plant instrumentation and safety circuits necessary to ensure reactor safety.

Specification

ITS

3.5.1.1 The Engineered Safety Features initiation instrumentation setting limits shall be as stated in Table 3.5-1. (See 3.3.2)

3.5.1.2 For on-line testing or in the event of a subsystem instrumentation channel failure, plant operation at rated power shall be permitted to continue in accordance with Tables 3.5-2 through 3.5-5. (See 3.3.1 3.3.2 3.3.3)

3.5.1.3 In the event the number of channels in service listed in Table 3.5-5 falls below the limits given in the column entitled Minimum Channels Operable, operation shall be limited according to the requirement shown in Column 2. (See 3.3.3)

[LCO 3.3.6] [Applicability]
3.5.1.4 The containment ventilation isolation ~~function is only required when containment integrity is required.~~ instrumentation for each function in Table 3.3.6-1 shall be OPERABLE During Core Alterations movement of fuel in Containment. (L34)

3.5.1.5 In the event the number of operable channels of a particular functional unit listed in Tables 3.5-2, 3, or 4 falls below the limits given in the column entitled Total Number of Channels, operation shall be limited according to the requirement shown in Column 3. (See 3.3.1 3.3.2)

ITS

TABLE 3.5-4 (Continued)

ISOLATION FUNCTIONS INSTRUMENTATION LIMITING OPERATING CONDITIONS

TABLE NOTATIONS

one radiation monitoring

inoperable

[ACTION A.1] ACTION 15 With ~~less than the Total Number of~~ Channels. Power Operations may continue ~~provided the Containment~~ Ventilation Purge and Exhaust valves are maintained closed.

ACTION 16 With the number of channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or declare the associated valve inoperable and take the ACTION required by Specification 3.4.3.

See 3.3.2

Add ACTIONS "NOTE" — A5

Add ACTION A.2 — M38

Add SR "NOTE" — A5

TABLE 3.5-4

ITS ISOLATION FUNCTIONS INSTRUMENTATION LIMITING OPERATING CONDITIONS

(A27)

NO.	FUNCTIONAL UNIT	1 TOTAL NO. OF CHANNELS	2 MINIMUM CHANNELS OPERABLE	3 OPERABLE ACTION IF COLUMN 1, OR 2 CANNOT BE MET	APPLICABLE CONDITIONS
1.	CONTAINMENT ISOLATION				See 3.2.2
	A. Phase A				
	i. Safety Injection	See Item No. 1 of Table 3.5-3 for all Safety Injection initiating functions and requirements			
	ii. Manual	2	2	ACTION II	>200°F
	B. Phase B	See Item No. 2 of Table 3.5-3 for all Containment Spray initiating functions and requirements			
	C. Ventilation Isolation				Core Alterations and movement of irradiated fuel within Containment (M40)
[T3.3.6-1 (3a)]	i. High Containment Activity. Gaseous	1	0	ACTION 15 (A)	During Containment Purge
[T3.3.6-1 (3b)]	ii. High Containment Activity. Particulate	1	0	ACTION 15	During Containment Purge (A27)
	iii. Phase A	See Item No. 1A of Table 3.5-4 for all Phase A initiating functions and requirements (A23)			

Add Table 3.3.6-1 Functions 1 and 2 (M41)

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number of channels where the total number of channels differ with the minimum channels OPERABLE. The total number of channels is retained in the ITS Tables 3.3.2-1, 3.3.6-1, and in LCO 3.3.5.

CTS Table 3.4-1 is revised to delete Column 2, "Minimum Degree of Redundancy." The Required Actions in the CTS refer to the minimum channels OPERABLE. The total number of channels is retained in the ITS Tables 3.3.8-1.

This change neither adds or relaxes requirements. Therefore, this change is administrative, and has no impact on safety.

A28 CTS Table 3.5-2 Action 2 for Function 2.b, "Nuclear Flux Power Range Low Setpoint," is revised to ITS Required Action E. Action 2 provides requirements for the condition when THERMAL POWER is above 75% RTP, which is higher than the Nuclear Flux Power Range Low Setpoint, hence Action 2, Part b, could not be entered for an inoperability of the Nuclear Flux Power Range Low Setpoint. Required Action E is more appropriate for the Nuclear Flux Power Range Low Setpoint. Therefore, this change is administrative, and has no impact on safety.

A29 The CTS is revised to adopt Note 1 to the ACTIONS of ITS 3.3.3, Post Accident Monitoring (PAM) Instrumentation. Note 1 states LCO 3.0.4 is not applicable. As such, the MODE change restrictions of ITS LCO 3.0.4 are not applicable for inoperable PAM Instrumentation. The HBRSEP CTS do not include MODE change restrictions similar to ITS LCO 3.0.4. Therefore, no MODE change restrictions currently apply for inoperable instrumentation of CTS Table 3.5-5, Instrumentation to Follow the Course of an Accident, and this change is considered to be administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 The CTS is revised to adopt the actual nominal trip setpoints that are used. These actual setpoints are more conservative than the CTS trip setpoint limits. The Trip Setpoints used in the bistables are based on the analytical limits. The selection of these Trip Setpoints is such that adequate protection is provided when sensor and processing time delays accounted for in setpoint calculations and accident analyses are taken into account. To allow for calibration tolerances, instrumentation uncertainties, instrument drift, and severe environment errors for those RPS channels that must function in harsh environments as defined by 10 CFR 50.49 the Trip Setpoints and Allowable Values specified in Table 3.3.1-1 in the accompanying LCO are conservatively adjusted with respect to the analytical limits. The use of more conservative parameters is considered to be more restrictive, and has no adverse impact on safety.

M2 CTS Specification 3.5.1.5 and Table 3.5-2 ACTION 4 require that certain corrective actions be taken. ITS Specification 3.3.1 ACTIONS A and I, and ITS Specification 3.3.2 ACTION A, require that these corrective actions be taken "immediately." Since no time constraint currently exists, this change is more restrictive, and has no adverse impact on safety.

ITS 3.3.1 Action A applies to RPS protection Functions. Condition A addresses the situation where one or more required channels for one or more Functions are inoperable at the same time. This action requires immediate entry into the appropriate Condition specified in ITS Table 3.3.1-1. Immediate entry into the specified Condition assures additional ITS specified Required Actions are implemented as required.

ITS 3.3.1 Action I applies to one inoperable Source Range Neutron Flux trip channel when in MODE 2, below the P-6 setpoint. With the unit in this Condition, below P-6, the NIS source range performs the monitoring and protection functions. With one of the two channels inoperable, operations involving positive reactivity additions shall be suspended immediately. This will preclude any power escalation. With only one source range channel OPERABLE, core protection is severely reduced and any actions that add positive reactivity to the core must be suspended immediately.

ITS 3.3.2 Action A applies to ESFAS protection Functions. Action A addresses the situation where one or more required channels for one or more Functions are inoperable at the same time. This action requires immediate entry into the appropriate Condition specified in ITS Table 3.3.2-1. Immediate entry into the specified Condition assures additional ITS specified Required Actions are implemented as required.

M3 CTS Table 3.5-2 ACTION 5 requires that compliance with shutdown margin be verified within 1 hour, and every 12 hours thereafter. ITS Specification 3.3.1 ACTION L requires, in addition, that activities involving positive reactivity addition be suspended immediately, and that unborated water source isolation valves be closed in 1 hour. Action L applies when the required number of OPERABLE Source Range Neutron Flux channels is not met in MODE 3, 4, or 5 with the RTBs open. With the unit in this Condition, the NIS source range performs the monitoring and protection functions. With less than the required number of source range channels OPERABLE, operations involving positive reactivity additions shall be suspended immediately. This will preclude any power escalation. In addition to suspension of positive reactivity additions, valves that could add unborated water to the RCS must be closed within 1 hour. The isolation of unborated water sources will preclude a boron dilution accident. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M4 CTS Table 3.5-2 Table Notation ACTION 6 permits operation to proceed, provided that the inoperable channel be placed in the tripped condition within 1 hour. ITS Specification 3.3.1 ACTION E requires instead, that the inoperable channel be placed in trip in 6 hours, or be in MODE 3 in 12 hours. If the channel is not tripped as specified, placing the unit in MODE 3 is necessary to place the unit in a MODE where the LCO is no longer applicable. This change imposes a shutdown requirement where such a requirement does not exist, and is therefore more restrictive and has no adverse impact on safety.

M5 Not Used.

M6 CTS Table 3.5-2 ACTION 2 requires an inoperable channel be placed in trip within 1 hour, and <u>either</u>: a) power reduced to ≤ 75% RTP <u>and</u> power range flux trip setpoint reduced to ≤ 85% RTP in 4 hours <u>or</u>: b) QPTR be monitored every 12 hours. ITS Specification 3.3.1 ACTION D requires <u>either</u>: a) the inoperable channel be placed in trip within 6 hours <u>and</u> power reduced to ≤ 75% RTP in 12 hours, <u>or</u> b) the inoperable channel be placed in trip within 6 hours <u>and</u> SR 3.2.4.2 (QPTR) be performed once per 12 hours, <u>or</u> c) be in MODE 3 in 12 hours. The differences here are discussed from the perspective of the most and least restrictive actions that can be taken in response to the CONDITION of an inoperable power range neutron flux - high channel. The most restrictive actions that can be taken in the CTS are to place the channel in trip in 1 hour, reduce THERMAL POWER to ≤ 75% RTP in 4 hours, and reduce the power range neutron flux trip setpoint to ≤ 85% RTP in 4 hours. The most restrictive action that can be taken in the ITS is to place the unit in MODE 3 in 12 hours. The action to shut down the unit is clearly a more restrictive change, and has no adverse impact on safety. Placing the unit in MODE 3 puts the unit in a MODE where this Function is no longer required OPERABLE. Twelve hours are allowed to place the plant in

MODE 3. This is a reasonable time, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging plant systems.

M7 CTS Table 3.5-2 ACTION 3 requires for an inoperable intermediate range neutron flux channel with THERMAL POWER above the P-6 setpoint, but below 10% RTP, that the inoperable channel be restored to OPERABLE status prior to increasing THERMAL POWER above 10% RTP. ITS Specification 3.3.1 ACTION F requires for an inoperable intermediate range neutron flux channel with THERMAL POWER above the P-6 setpoint, but below the P-10 setpoint, that THERMAL POWER either be reduced to below P-6 or increased above P-10 in 2 hours. The intermediate range neutron flux channels must be OPERABLE when the power level is above the capability of the source range and below the capability of the power range. The CTS has no time or action requirements for placing the unit in a condition where the power level is within the range of either the source range or power range instrumentation. The ITS requires decisive action be taken to place the unit in such a condition within a specified Completion Time. If THERMAL POWER is greater than the P-10 setpoint, the NIS power range detectors perform the monitoring and protection functions and the intermediate range is not required. If THERMAL POWER is less than the P-6 setpoint, the NIS source range detectors perform the monitoring and protection functions and the intermediate range is not required. The Completion Times allow for a slow and controlled power adjustment above P-10 or below P-6 and take into account the redundant capability afforded by the redundant OPERABLE channel, and the low probability of its failure during this period. This change is more restrictive, and has no adverse impact on safety.

M8 CTS Specification 3.10.5.2 requires that, if an inoperable RTB or automatic trip logic train cannot be returned to OPERABLE status in 12 hours, the reactor be placed in the hot shutdown condition within the next 8 hours. ITS Specification 3.3.1 ACTION Q requires that an inoperable automatic trip logic train be restored to OPERABLE status in 6 hours, or be in MODE 3 in the next 6 hours. The Completion Time of 6 hours to restore the channel to OPERABLE status is reasonable considering that in this Condition, the remaining OPERABLE train is adequate to perform the safety function and given the low probability of an event during this interval. The Completion Time of 6 hours to place the unit in MODE 3 is reasonable, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging unit systems. ACTION R requires that an inoperable RTB be restored to OPERABLE status in 1 hour, or be in MODE 3 in the next 6 hours. With one train inoperable, 1 hour is allowed to restore the train to OPERABLE status or the unit must be placed in MODE 3 within the next 6 hours. The Completion Time of one hour to restore the RTB to OPERABLE status reflects the significance of the reduction in reactor trip redundancy. The Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power in an orderly

manner and without challenging unit systems. Placing the unit in MODE 3 removes the requirement for this particular Function. Since the ITS allowed outage times and Completion Times are shorter, this change is more restrictive, and has no adverse impact on safety.

M9 The CTS is revised to adopt ISTS Table 3.3.1-1 Items 18, 19 and 20 for Applicability in MODES 3, 4, and 5, including Required Actions C and V, with the RTBs closed. The LCO requirement for the RTBs (Functions 18 and 19) and Automatic Trip Logic (Function 20) ensures that means are provided to interrupt the power to allow the rods to fall into the reactor core. In MODE 3, 4, or 5, these RPS trip Functions must be OPERABLE when the RTBs and associated bypass breakers are closed. Action C addresses the train orientation of the RPS for these Functions. With one channel or train inoperable, the inoperable channel or train must be restored to OPERABLE status within 48 hours. If the affected Function(s) cannot be restored to OPERABLE status within the allowed 48 hour Completion Time, the unit must be placed in a MODE in which the requirement does not apply. To achieve this status, the RTBs must be opened within the next hour. The additional hour provides sufficient time to accomplish the action in an orderly manner. With the RTBs open, these Functions are no longer required.

The Completion Time is reasonable considering that in this Condition, the remaining OPERABLE train is adequate to perform the safety function, and given the low probability of an event occurring during this interval. Action V addresses the Condition with two RPS trains inoperable. In this Condition, no automatic capability is available to shut down the reactor, and immediate plant shutdown in accordance with LCO 3.0.3 is required. Since the CTS does not contain similar Specifications, this change is more restrictive, and has no adverse impact on safety.

M10 CTS Specification 3.10.5.3 requires that an inoperable RTB trip mechanism be restored to OPERABLE status in 48 hours or the unit be placed in the hot shutdown condition within the next 8 hours (56 hours total). ITS Specification 3.3.1 ACTION U requires that an inoperable RTB trip mechanism be restored to OPERABLE status in 48 hours or the unit be placed in MODE 3 in 54 hours and the RTB opened in 55 hours. Since the ITS Completion Times are smaller, this change is more restrictive, and has no adverse impact on safety. The Completion time of 54 hours provides 6 hours to place the unit in MODE 3 if the RTB trip mechanism is not restored within the specified time. This is a reasonable time, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging plant systems. The Completion Time of 55 hours provides one hour after achieving MODE 3 to open the RTB. One hour is sufficient time to complete the specified action.

M11 The CTS is revised to adopt ITS Specification 3.3.1 ACTIONS J, S, T, and V. Since no similar ACTIONS exist in the CTS for inoperable reactor trip instrumentation, this change is more restrictive, and has no adverse impact on safety. Condition J applies to two inoperable Source Range Neutron Flux trip channels when in MODE 2, below the P-6 setpoint, or in MODE 3, 4, or 5 with the RTBs closed. With the unit in this Condition, below P-6, the NIS source range performs the monitoring and protection functions. With both source range channels inoperable, the RTBs must be opened immediately. With the RTBs open, the core is in a more stable condition and the unit enters Condition L. Condition S applies to the P-6 and P-10 interlocks. With one channel inoperable for one-out-of-two or two-out-of-four coincidence logic, the associated interlock must be verified to be in its required state for the existing unit condition within 1 hour or the unit must be placed in MODE 3 within the next 6 hours. Verifying the interlock status manually accomplishes the interlock's Function. The Completion Time of 1 hour is based on operating experience and the minimum amount of time allowed for manual operator actions. The Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging unit systems. The 1 hour and 6 hour Completion Times are equal to the time allowed by LCO 3.0.3 for shutdown actions in the event of a complete loss of RPS Function. Condition T applies to the P-7, P-8, and Turbine Impulse Pressure interlocks. With one channel inoperable for one-out-of-two or two-out-of-four coincidence logic, the associated interlock must be verified to be in its required state for the existing unit condition within 1 hour or the unit must be placed in MODE 2 within the next 6 hours. These actions are conservative for the case where power level is being raised. Verifying the interlock status manually accomplishes the interlock's Function. The Completion Time of 1 hour is based on operating experience and the minimum amount of time allowed for manual operator actions. The Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 2 from full power in an orderly manner and without challenging unit systems. Action V addresses the Condition with two RPS trains inoperable. In this Condition, no automatic capability is available to shut down the reactor, and immediate plant shutdown in accordance with LCO 3.0.3 is required.

M12 The CTS is revised to adopt the "ALLOWABLE VALUE" column in ITS Tables 3.3.1-1, 3.3.2-1, and 3.3.8-1. This column is added to provide an allowance for calibration tolerances, instrumentation uncertainties, instrument drift, and severe environment errors for those Reactor Protection System (RPS), Engineered Safety Features Actuation System (ESFAS), and AFW actuation channels that must function in harsh environments. The Allowable Values specified in these Tables are conservatively set with respect to the analytical limits. The methodology used to calculate both the trip setpoints and allowable values is provided in the company setpoint methodology procedure. Since

no similar Specifications for these instruments and functions exist in the CTS, this change is more restrictive and has no adverse impact on safety.

M13 The CTS is revised to adopt ITS Table 3.3.1-1 Functions (10) Reactor Coolant Pump (RCP) breaker position (single loop and two loops), (16) safety injection input from ESFAS, and (17) RPS interlocks for intermediate range neutron flux, P-7, P-8, P-10, and turbine impulse pressure. The RCP Breaker Position (Single Loop) trip Function ensures that protection is provided against violating the DNBR limit due to a loss of flow in one RCS loop. The position of each RCP breaker is monitored. If one RCP breaker is open above the P-8 setpoint, a reactor trip is initiated. This trip Function will generate a reactor trip before the Reactor Coolant Flow—Low (Single Loop) Trip Setpoint is reached. The RCP Breaker Position (Two Loops) trip Function ensures that protection is provided against violating the DNBR limit due to a loss of flow in two or more RCS loops. The position of each RCP breaker is monitored. Above the P-7 setpoint and below the P-8 setpoint, two or more RCP Breakers open will initiate a reactor trip. This trip Function will generate a reactor trip before the Reactor Coolant Flow—Low (Two Loops) Trip Setpoint is reached.

The SI Input from ESFAS ensures that if a reactor trip has not already been generated by the RPS, the ESFAS automatic actuation logic will initiate a reactor trip upon any signal that initiates SI. This is a condition of acceptability for the LOCA. However, other transients and accidents take credit for varying levels of ESF performance and rely upon rod insertion, except for the most reactive rod that is assumed to be fully withdrawn, to ensure reactor shutdown. Therefore, a reactor trip is initiated every time an SI signal is present. The Intermediate Range Neutron Flux, P-6 interlock is actuated when any NIS intermediate range channel goes approximately one decade above the minimum channel reading. If both channels drop below the setpoint, the permissive will automatically be defeated. The LCO requirement for the P-6 interlock ensures that the required Functions are performed. The Low Power Reactor Trips Block, P-7 interlock is actuated by input from either the Power Range Neutron Flux, P-10, or the Turbine Impulse Pressure interlock. The LCO requirement for the P-7 interlock ensures that the required Functions are performed. The Power Range Neutron Flux, P-8 interlock is actuated at approximately 40% power as determined by two-out-of-four NIS power range detectors. The P-8 interlock automatically enables the Reactor Coolant Flow—Low (Single Loop) and RCP Breaker Position (Single Loop) reactor trips on low flow in one or more RCS loops on increasing power. The LCO requirement for this trip Function ensures that protection is provided against a loss of flow in any RCS loop that could result in DNB conditions in the core when greater than approximately 40% power. On decreasing power, the reactor trip on low flow in any loop is automatically blocked. The Power Range Neutron Flux, P-10 interlock is actuated at approximately 10% power, as

determined by two-out-of-four NIS power range detectors. If power level falls below 10% RTP on 3 of 4 channels, the power range low flux and intermediate range high flux trips will be automatically unblocked. The LCO requirement for the P-10 interlock ensures that the required Functions are performed. The Turbine Impulse Pressure interlock is actuated when the pressure in the first stage of the high pressure turbine is greater than approximately 10% of the rated full power pressure. This is determined by one-out-of-two pressure detectors. The LCO requirement for this Function ensures that one of the inputs to the P-7 interlock is available.

Since no similar Specifications for these instruments and functions exist in the CTS, this change is more restrictive and has no adverse impact on safety.

M14 The CTS is revised to adopt ITS SR 3.3.1.3, which requires that results of incore detector measurements to NIS axial flux difference, and ITS SR 3.3.1.6, which requires calibration of the excore nuclear instrument channels to agree with incore detector measurements, for the OTΔT and OPΔT Functions.

SR 3.3.1.3 compares the incore system to the NIS channel output every 31 EFPD. This Surveillance is performed to verify the f(ΔI) input to the overtemperature and overpower ΔT Functions. The Frequency of every 31 EFPD is adequate. It is based on industry operating experience, considering instrument reliability and operating history data for instrument drift. Also, the slow changes in neutron flux during the fuel cycle can be detected during this interval.

SR 3.3.1.6 is a calibration of the excore channels to the incore channels. This Surveillance is performed to verify the f(ΔI) input to the overtemperature and overpower ΔT Functions. The Frequency of 92 EFPD is adequate. It is based on industry operating experience, considering instrument reliability and operating history data for instrument drift.

SR 3.3.1.1, SR 3.3.1.8, and SR 3.3.1.11 are adopted for the Power Range Neutron Flux-Low Function. SR 3.3.1.11 is adopted for the RPS Interlock P-6, P-7, P-8, and P-10 Functions. Performance of the SR 3.3.1.1 CHANNEL CHECK once every 12 hours ensures that gross failure of instrumentation has not occurred. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying that the instrumentation continues to operate properly between each CHANNEL CALIBRATION. The Frequency is based on operating experience that demonstrates channel failure is rare. SR 3.3.1.8 is the performance of a COT as described in SR 3.3.1.7, except it is modified by a Note that this test shall include verification that the P-6 and P-10 interlocks are in their required state for the existing unit condition. This test ensures that the NIS

source, intermediate, and power range low channels are OPERABLE prior to taking the reactor critical and after reducing power into the applicable MODE (< P-10 or < P-6) for periods > 4 hours. SR 3.3.1.11 is the performance of a CHANNEL CALIBRATION, as described in SR 3.3.1.10, every 18 months. The 18 month Frequency is based on industry operating experience, considering instrument reliability and operating history data. Operating experience has shown these components usually pass the Surveillance when performed on the 18 month Frequency.

SR 3.3.1.14 is adopted for the RCP Breaker Position and Safety Injection (SI) Input from ESFAS Functions. SR 3.3.1.14 is the performance of a TADOT of the Manual Reactor Trip, RCP Breaker Position, and the SI Input from ESFAS. This TADOT is performed every 18 months. The test independently verifies the OPERABILITY of the undervoltage and shunt trip mechanisms for the Manual Reactor Trip Function for the Reactor Trip Breakers and the undervoltage trip mechanism for the Reactor Trip Bypass Breakers. The Frequency is based on the known reliability of the Functions and the multichannel redundancy available, and has been shown to be acceptable through operating experience.

SR 3.3.1.13 is adopted for the RPS Interlock P-6, P-7, P-8, and P-10 Functions. SR 3.3.1.13 is the performance of a COT of RPS interlocks every 18 months. The Frequency is based on the known reliability of the interlocks and the multichannel redundancy available, and has been shown to be acceptable through operating experience.

Since no similar requirements exist in the CTS, these changes are more restrictive and have no adverse impact on safety.

M15 CTS Table 4.1-1, Item 2 (Nuclear Intermediate Range) and Item 3 (Nuclear Source Range), require functional testing prior to each reactor startup if a functional test has not been performed in the previous 7 days. ITS SR 3.3.1.8 requires that a COT be performed prior to reactor startup, 4 hours after reducing power below P-10, 4 hours after reducing power below P-6, if the COT has not been performed in the previous 92 days; and every 92 days thereafter. The Frequency of "prior to startup" ensures this surveillance is performed prior to critical operations and applies to the source, intermediate and power range low instrument channels. The Frequency of "4 hours after reducing power below P-10" (applicable to intermediate and power range low channels) and "4 hours after reducing power below P-6" (applicable to source range channels) allows a normal shutdown to be completed and the unit removed from the MODE of Applicability for this surveillance without a delay to perform the testing required by this surveillance. The Frequency of every 92 days thereafter applies if the plant remains in the MODE of Applicability after the initial performances of prior to reactor startup and four hours after reducing power below P-10 or P-6. The MODE of Applicability for this surveillance is < P-10 for the power range low and intermediate range channels and < P-6 for the source range channels.

Once the unit is in MODE 3, this surveillance is no longer required. If power is to be maintained < P-10 or < P-6 for more than 4 hours, then the testing required by this surveillance must be performed prior to the expiration of the 4 hour limit. Four hours is a reasonable time to complete the required testing or place the unit in a MODE where this surveillance is no longer required. This test ensures that the NIS source, intermediate, and power range low channels are OPERABLE prior to taking the reactor critical and after reducing power into the applicable MODE (< P-10 or < P-6) for periods > 4 hours. Since requirements similar to these do not exist in the CTS (with the exception of the requirement to perform the COT prior to startup), this change is more restrictive and has no adverse impact on safety.

M16 CTS Table 4.1-1, Item 2 (Nuclear Intermediate Range) and Item 3 (Nuclear Source Range) are revised to adopt ITS Surveillance Requirement SR 3.3.1.11. SR 3.3.1.11 is the performance of a CHANNEL CALIBRATION, as described in SR 3.3.1.10, every 18 months. The CHANNEL CALIBRATION for the source range and power range neutron detectors consists of obtaining the detector plateau or preamp discriminator curves, evaluating those curves, and comparing the curves to the manufacturer's data. Operating experience has shown these components usually pass the Surveillance when performed on the 18 month Frequency. Since no similar requirements exist in the CTS, this change is more restrictive, and has no adverse impact on safety.

M17 CTS Table 4.1-1, Item 22, Turbine Trip Logic, has Surveillance Requirements for only a test at refueling (R) intervals. ITS Surveillance Requirement SR 3.3.1.15 requires performance of a TADOT prior to reactor startup, when not performed in the previous 31 days. Performance of this test will ensure that the turbine trip Function is OPERABLE prior to taking the reactor critical. This test cannot be performed with the reactor at power and must therefore be performed prior to reactor startup. The CTS is also revised to adopt SR 3.3.1.10. SR 3.3.1.10 (CHANNEL CALIBRATION) is a complete check of the instrument loop, including the sensor. The test verifies that the channel responds to a measured parameter within the necessary range and accuracy.

CHANNEL CALIBRATIONS must be performed consistent with the assumptions of the unit specific setpoint methodology.

The Frequency of 18 months is based on the assumption of an 18 month calibration interval in the determination of the magnitude of equipment drift in the setpoint methodology. No other similar requirement exists in the CTS. This change imposes more restrictive requirements, and has no adverse impact on safety.

M18 CTS Table 4.1-1, Item 27, Logic Channel Testing, requires monthly functional testing during hot shutdown and power operations, and for the source range channels prior to each reactor startup, if not performed

within the previous 7 days. ITS SR 3.3.1.5 requires an ACTUATION LOGIC TEST be performed on a STAGGERED TEST BASIS, with Applicability in MODES 1 and 2; and in MODES 3, 4, and 5, when the RTBs are closed. SR 3.3.1.5 is the performance of an ACTUATION LOGIC TEST. The RPS is tested every 31 days on a STAGGERED TEST BASIS. The train being tested is placed in the bypass condition, thus preventing inadvertent actuation. All possible logic combinations, with and without applicable permissives, are tested for each protection function. The Frequency of every 31 days on a STAGGERED TEST BASIS is adequate. It is based on industry operating experience, considering instrument reliability and operating history data. The increased applicability for performance of the SR is consistent with the ITS Applicability of the LCO for the Source Range channels. The LCO requirement for the Source Range Neutron Flux trip Function ensures that protection is provided against an uncontrolled RCCA bank rod withdrawal accident from a subcritical condition during startup. Since this change imposes a broader Applicability, it is more restrictive and has no adverse impact on safety.

M19 CTS Table 4.1-1 requires logic channel testing be performed prior to startup, when periods of reactor cold shutdown and refueling extend the Surveillance interval beyond one month. ITS Surveillance Requirement SR 3.3.1.5 has Applicability in MODES 1 and 2; and MODES 3, 4, and 5 when the RTBs are closed. ITS SR 3.3.2.2 has Applicability in MODES 1, 2, and 3; and in one case, MODE 4. Since a Surveillance must be performed within its Frequency prior to entry into a MODE or other specified condition of Applicability, and the CTS requires performance of the SR prior to "startup," if it has not been performed within its Frequency, this change imposes more restrictive requirements, and has no adverse impact on safety. The increased Applicability for performance of the specified SRs is necessary to ensure the associated functions are OPERABLE when required.

M20 CTS Specification 2.3.1 is revised to add trip setpoints for ITS Table 3.3.1-1 Functions 3, 4, 14 and 15. The inclusion of the trip setpoints ensures the associated functions trip at a point consistent with the assumptions in the applicable safety analysis. The addition of specific setpoints to ITS is more restrictive, and this change has no adverse impact on safety.

M21 CTS Table 4.1-1, Item 39 (Steam/Feedwater Flow Mismatch) and Item 40 (Low Steam Generator Water Level) are revised to adopt ISTS SR 3.3.1.1, which requires that a CHANNEL CHECK be performed every 12 hours. Performance of the CHANNEL CHECK once every 12 hours ensures that gross failure of instrumentation has not occurred. Since no similar requirements exist in the CTS, this change is more restrictive and has no adverse impact on safety.

M22 CTS Table 3.5-3 ACTION 11, which applies to the manual SI actuation Function and the Manual containment Phase A isolation Function, requires

the unit be in at least the Hot Shutdown condition within the next 8 hours. ITS Specification 3.3.2 ACTION B requires the unit be in MODE 3 within the next 6 hours. If the train cannot be restored to OPERABLE status, the unit must be placed in a MODE in which the LCO does not apply. This is done by placing the unit in at least MODE 3 within an additional 6 hours. The allowable Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. This change is more restrictive, and has no adverse impact on safety.

M23 CTS Table 3.5-3, ACTION 12 allows power operation to continue, provided the inoperable channel is placed in trip. ITS Specification Conditions C, D, E, and G contain the same provision. However, ITS Conditions D and G specify that, if the inoperable channel is not placed in trip within the allotted time, the unit must be in MODE 4 within specified Completion Times, and Conditions C and E specify the unit be placed in MODE 5 within specified Completion Times. While a shutdown is implied in the CTS, it is stated specifically in the ITS. These changes place the unit in a condition where the specifications no longer apply. The Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. This change imposes more restrictive requirements, and has no adverse impact on safety.

M24 CTS Table 3.5-3, Functional Unit 2.A, Manual Actuation of Containment Spray, has a required ACTION to restore the inoperable channel to OPERABLE status within 1 hour, or be in Hot Shutdown within the next 8 hours, and in Cold Shutdown in the following 30 hours. ITS Specification 3.3.2, ACTION I for the same Functional Unit, is to restore the inoperable channel to OPERABLE status in 1 hour, or be in MODE 3 in 7 hours, MODE 4 in 13 hours, and MODE 5 in 37 hours. This change imposes shorter Completion Time requirements, which is therefore more restrictive, and has no adverse impact on safety.

M25 CTS Table 3.5-4, Item 2.D, manual initiation of steam line isolation, requires in ACTION 16 that an inoperable channel be restored to OPERABLE status within 48 hours, or declare the associated valve inoperable and either restore it to OPERABLE status within the next 24 hours, or initiate procedures to place the unit in the hot shutdown condition. If the Specification is not met within an additional 48 hours, the reactor must be cooled to below 350°F. ITS Specification 3.3.2, Condition F requires the channel be restored to OPERABLE status within 48 hours, or be in MODE 3 within 54 hours, and in MODE 4 within 60 hours. This change imposes more restrictive requirements, and has no adverse impact on safety.

M26 CTS Specifications 4.5.1.1 and 4.5.1.3 require performance of system tests at each reactor refueling interval. The CTS does not explicitly limit the refueling interval to a finite time period. ITS Surveillance Requirement SR 3.3.2.8 requires performance of the test at an 18 month Frequency. This SR ensures that individual component actuation times are within limits assumed in the accident analyses. The 18 month Frequency is adequate, based on industry operating experience, and is consistent with the typical refueling cycle, which provides the plant conditions necessary for testing. This change imposes more restrictive requirements, and has no adverse impact on safety.

M27 The CTS is revised to adopt ITS Specification 3.3.2 Condition H; Surveillance Requirements SR 3.3.2.1, SR 3.3.2.3 through SR 3.3.2.5, and SR 3.3.2.7; and, Table 3.3.2-1 Item 6. Condition H applies to the Pressurizer Pressure-Low and T_{avg}-Low interlocks. With one channel inoperable, the operator must verify that the interlock is in the required state for the existing unit condition. This action manually accomplishes the function of the interlock. Determination must be made within 1 hour. The 1 hour Completion Time is equal to the time allowed by LCO 3.0.3 to initiate shutdown actions in the event of a complete loss of ESFAS function. If the interlock is not in the required state (or placed in the required state) for the existing unit condition, the unit must be placed in MODE 3 within the next 6 hours and MODE 4 within the following 6 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. Placing the unit in MODE 4 removes all requirements for OPERABILITY of these interlocks. SR 3.3.2.1 requires performance of a CHANNEL CHECK every 12 hours. Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. SR 3.3.2.3 is the performance of a MASTER RELAY TEST. This test is performed every 18 months. The 18 month Frequency is adequate, based on industry operating experience, and is consistent with the typical refueling cycle, which provides the plant conditions necessary for testing. SR 3.3.2.5 is the performance of a SLAVE RELAY TEST. The SLAVE RELAY TEST is the energizing of the slave relays. This test is performed every 18 months. The 18 month Frequency is adequate, based on industry operating experience, and is consistent with the typical refueling cycle, which provides the plant conditions necessary for testing. SR 3.3.2.7 is the performance of a CHANNEL CALIBRATION.

A CHANNEL CALIBRATION is performed every 18 months, or approximately at every refueling. CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test verifies that the channel responds to measured parameter within the necessary range and accuracy. CHANNEL CALIBRATIONS must be performed consistent with the

assumptions of the unit specific setpoint methodology. The Frequency of 18 months is based on the assumption of an 18 month calibration interval in the determination of the magnitude of equipment drift in the setpoint methodology. Table 3.3.2-1, Item 6 provides requirements for ESFAS interlocks. To allow some flexibility in unit operations, several interlocks are included as part of the ESFAS. These interlocks permit the operator to block some signals, automatically enable other signals, prevent some actions from occurring, and cause other actions to occur. The interlock Functions back up manual actions to ensure bypassable functions are in operation under the conditions assumed in the safety analyses. The addition of these requirements adds appropriate LCO, Action, SR and setpoints for the ESFAS interlocks to ensure proper operation. Since no similar Specifications exist in the CTS, this change imposes new requirements and is therefore more restrictive and has no adverse impact on safety.

M28 CTS Specification 3.5.1.2 has Applicability "... at rated power ..." ITS Specification 3.3.3 has Applicability in MODES 1, 2, and 3. These variables are related to the diagnosis and pre-planned actions required to mitigate DBAs. The applicable DBAs are assumed to occur in MODES 1, 2, and 3. In MODES 4, 5, and 6, unit conditions are such that the likelihood of an event that would require PAM instrumentation is low; therefore, the PAM instrumentation is not required to be OPERABLE in these MODES. Since the ITS has broader MODE Applicability, this change is more restrictive and has no adverse impact on safety.

M29 Not used.

M30 CTS Table 3.5-5 requires that, with both containment high range radiation monitoring channels inoperable, one of the channels be restored to OPERABLE status within 7 days, or a special report be prepared and submitted to the NRC within the following 14 days, detailing the cause of the inoperable channels and the action being taken to restore a channel to OPERABLE status. ITS Specification 3.3.3 requires that, if the 7 day Completion Time is not met, the unit be in MODE 3 within 6 hours and MODE 4 within 12 hours. Containment Area Radiation is provided to monitor for the potential of significant radiation releases and to provide release assessment for use by operators in determining the need to invoke site emergency plans. Containment radiation level is used to determine the type of high energy line break (HELB) that has occurred inside containment. If one containment high range radiation monitor cannot be restored to OPERABLE status, the unit must be placed in a condition where the specification

is not applicable. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. Since this change requires a unit shutdown when both channels are inoperable and at least one cannot be returned to OPERABLE status within 7 days, it is more restrictive and has no adverse impact on safety.

M31 CTS Table 3.5-5, Note 6, requires that with both containment hydrogen monitoring channels inoperable, that one channel be restored to OPERABLE status within 14 days. ITS LCO 3.3.3, Required Action E, requires that one channel be restored to OPERABLE status within 72 hours. The 72 hour Completion Time is reasonable based on the backup capability of the Post Accident Sampling System to monitor the hydrogen concentration for evaluation of core damage and to provide information for operator decisions. Also, it is unlikely that a LOCA (which would cause core damage) would occur during this time. This change imposes more restrictive requirements, and has no adverse impact on safety.

M32 The CTS is revised to adopt the following Functions from the plant specific Regulatory Guide 1.97 analysis in ITS Specification 3.3.3: Steam Generator (SG) Pressure and Level, Containment Spray Additive Tank Level, Containment Isolation Valve Position Indication, Power Range and Source Range Neutron Flux, Reactor Coolant System (RCS) Pressure, RCS Hot and Cold Leg Temperature, Refueling Water Storage Tank Level, and Condensate Storage Tank Level. The instrument channels required to be OPERABLE by this LCO include two classes of parameters identified during unit specific implementation of Regulatory Guide 1.97 as Type A and Category I variables.

Type A variables are included in this LCO because they provide the primary information required for the control room operator to take specific manually controlled actions for which no automatic control is provided, and that are required for safety systems to accomplish their safety functions for DBAs.

Category I variables are the key variables deemed risk significant because they are needed to:

- Determine whether other systems important to safety are performing their intended functions;
- Provide information to the operators that will enable them to determine the likelihood of a gross breach of the barriers to radioactivity release; and

- Provide information regarding the release of radioactive materials to allow for early indication of the need to initiate action necessary to protect the public, and to estimate the magnitude of any impending threat.

These key variables are identified by the HBRSEP Regulatory Guide 1.97 analyses. These analyses identify the unit specific Type A and Category I variables and provide justification for deviating from the NRC proposed list of Category I variables. Since no similar Specifications or requirements exist in the CTS, this change imposes new requirements and is therefore more restrictive and has no adverse impact on safety.

M33 CTS Table 3.5-5, Note 8 requires that at least one thermocouple be restored to OPERABLE status within a specified time, or be in Hot Shutdown within the next 12 hours and < 350°F within the next 30 hours. ITS Specification 3.3.3 Required Action G requires that, under those circumstances, the unit be placed in MODE 3 in 6 hours, and in MODE 4 in 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. This change imposes shorter Completion Times, and is therefore more restrictive and has no adverse impact on safety.

M34 CTS Table 4.1-1 is revised to adopt Surveillance Requirements SR 3.3.3.1 and SR 3.3.3.2 for the Power Operated Relief Valve (PORV), PORV block valve, and pressurizer safety valve position indicators. SR 3.3.3.1 requires performance of a monthly CHANNEL CHECK, and SR 3.3.3.2 requires performance of a CHANNEL CALIBRATION at a Frequency of 18 months. Performance of the CHANNEL CHECK once every 31 days ensures that a gross instrumentation failure has not occurred. The Frequency of 31 days is based on operating experience that demonstrates that channel failure is rare. The CHANNEL CHECK supplements less formal, but potentially more frequent, checks of channels during normal operational use of the displays associated with the LCO required channels. CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test verifies that the channel responds to measured parameter with the necessary range and accuracy. The Frequency is based on operating experience and consistency with the typical industry refueling cycle. This change imposes new requirements, and is therefore more restrictive and has no adverse impact on safety.

M35 The CTS is revised to adopt ITS Specification 3.3.4, "Remote Shutdown System," in the ITS. The specification for the remote shutdown control and instrumentation functions ensures there is sufficient information available on selected unit parameters to place and maintain the unit in MODE 3 should the control room become inaccessible. The Remote Shutdown

System is considered a contributor to the reduction of unit risk to accidents as such it has been added to the Technical Specifications. Since no similar Specification exists, this change is more restrictive and has no adverse impact on safety.

M36 CTS Table 3.5-3, Functional Units 3.A (loss of voltage protection) and 3.B (degraded voltage protection), have Applicability in the condition, "Reactor Critical." ITS Specification 3.3.5 has Applicability in MODES 1, 2, 3, and 4; and when associated Diesel Generator (DG) is required to be OPERABLE by LCO 3.8.2, "AC Sources-Shutdown and During Movement of Irradiated Fuel Assemblies." The LOP DG Start Instrumentation Functions are required in MODES 1, 2, 3, and 4 because ESF Functions are designed to provide protection in these MODES. Actuation in MODE 5 or 6 is required whenever the required DG must be OPERABLE so that it can perform its function on an LOP or degraded power to the AC Instrument bus. This change imposes more restrictive requirements, and has no adverse impact on safety.

M37 The CTS is revised to adopt ITS Specification 3.3.5 Required Action C. Condition C applies when more than one loss of voltage and/or more than one degraded voltage channel on a single bus is inoperable. In this condition a reduction in capability to detect adverse grid voltage conditions exists. Required Action C requires that, with one or more Functions with two or more channels per bus inoperable, all but one channel be restored to OPERABLE status in 1 hour. Restoration of all but one channel to OPERABLE status restores significant protection capability. The 1 hour Completion Time should allow ample time to repair most failures and takes into account the low probability of an event requiring an LOP start occurring during this interval. Adoption of this Required Action imposes more restrictive requirements, and has no adverse impact on safety.

M38 CTS Table 3.5-4, ACTION 15, requires that with certain instrumentation channels inoperable, power operation may continue provided the Containment Ventilation Purge and Exhaust valves are maintained closed. CTS requirements comparable to ITS 3.3.6 Action A.2 do not exist ITS Specification 3.3.6, Required Action A.1, requires containment purge supply and exhaust valves be closed immediately or Required Action A.2 requires entering the applicable conditions and Required Actions of LCO 3.9.3, "Containment Penetrations." ITS 3.9.3 provides appropriate Required Actions for inoperable containment penetrations during CORE ALTERATIONS and movement of irradiated fuel assemblies inside containment. Adoption of Required Action A.2 imposes more restrictive requirements, and has no adverse impact on safety.

M39 Not Used.

M40 The CTS Table 3.5-4, Ventilation Isolation Function, has Applicability "during containment purge." ITS Specification 3.3.6 has Applicability During Purging; during CORE ALTERATIONS, and during movement of irradiated fuel assemblies within containment. The Manual Initiation, Automatic Actuation Relays, and Containment Radiation Functions are required to be OPERABLE During Purging, and during CORE ALTERATIONS, or movement of irradiated fuel assemblies within containment. Under these conditions, the potential exists for an accident that could release fission product radioactivity into containment. Therefore, the containment ventilation isolation instrumentation must be OPERABLE in these MODES. During Purging is defined as opening the containment purge supply and exhaust penetrations and does not include opening the Containment Pressure and Vacuum Relief System. While in MODES 5 and 6 without fuel handling in progress, the containment ventilation isolation instrumentation need not be OPERABLE since the potential for radioactive releases is minimized and operator action is sufficient to ensure post accident offsite doses are maintained within the applicable limits. Since this change imposes broader Applicability requirements, it is more restrictive and has no adverse impact on safety.

M41 The CTS is revised by adopting ITS Table 3.3.6-1 Functions 1 and 2, which specify operability requirements for Manual Initiation and Automatic Actuation Relays. These requirements ensure that the instrumentation necessary to manually or automatically initiate Containment Ventilation Isolation is OPERABLE. Since this change imposes additional operability requirements, it is more restrictive and has no adverse impact on safety.

M42 The CTS is revised to adopt ITS Surveillance Requirements SR 3.3.6.1, SR 3.3.6.2, SR 3.3.6.3 (and Note), and SR 3.3.6.4, which provide requirements to assure OPERABILITY of the containment ventilation isolation Function. SR 3.3.6.1 requires performance of a CHANNEL CHECK. Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of the radiation monitor instrumentation has not occurred. The Frequency is based on operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but potentially more frequent, checks of channels during normal operational use of the displays associated with the LCO required channels. SR 3.3.6.2 requires performance of a COT. A COT is performed every 92 days on each required channel to ensure the channel will perform the intended Function. The Frequency is based on the staff recommendation for increasing the availability of radiation monitors according to NUREG-1366. This test verifies the capability of the radiation monitor instrumentation to initiate Containment Ventilation System isolation. SR 3.3.6.3 is the performance of a TADOT. This test is a check of the Manual Actuation Functions and is performed every

18 months. The Frequency is based on the known reliability of the Function and the redundancy available, and has been shown to be acceptable through operating experience. SR 3.3.6.4 requires performance of a CHANNEL CALIBRATION. A CHANNEL CALIBRATION is performed every 18 months, or approximately at every refueling. The test verifies that the channel responds to a measured parameter within the necessary range and accuracy. The Frequency is based on operating experience and is consistent with the typical industry refueling cycle. Since no similar Specifications exist, this change is more restrictive and has no adverse impact on safety.

M43 The CTS is revised to adopt ITS Specification 3.3.7, "CREFS Actuation Instrumentation." The control room must be kept habitable for the stationed there during accident recovery and post accident operations. Operation of the CREFS may be necessary to ensure the control room is kept habitable for the operators stationed there during accident recovery and post accident operations by minimizing the radiation exposure of control room personnel. The specification requirements ensure that instrumentation necessary to initiate the CREFS is OPERABLE. Since no similar Specification exists, this change is more restrictive and has no adverse impact on safety.

M44 CTS Table 3.4-1, Note 2, requires an inoperable channel to be restored to OPERABLE status within 48 hours, or commence a normal plant shutdown and cooldown to ≤ 350°F. ITS Specification 3.3.8, Condition D requires that the inoperable channel be restored to OPERABLE status in 48 hours, or be in MODE 3 in 54 hours. Condition D requires further that the unit be in MODE 4 in 60 hours. The OPERABILITY of the AFW System must be assured by allowing automatic start of the AFW System pumps. If a channel is inoperable, 48 hours are allowed to return it to an OPERABLE status. If the Function cannot be returned to an OPERABLE status, 6 hours are allowed to place the unit in MODE 3. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems. Since this change imposes Completion Time restrictions where none exist, it is more restrictive and has no adverse impact on safety.

M45 CTS Specification 3.10.5.2 permits one RTB bypass breaker to be racked in and closed for up to 12 hours. ITS Specification 3.3.1 ACTION Q "Note", and ACTION R "Note 1," permit one train to be bypassed for up to 12 hours for surveillance testing provided the other train is OPERABLE. Twelve hours is a reasonable time to perform surveillance testing. A new ACTION R "Note 2" is adopted, which permits one RTB to be bypassed for up to 2 hours for maintenance on undervoltage or shunt trip mechanisms, provided the other train is OPERABLE. The 2 hour time limit is justified in WCAP-10271-P-A, Supplement 2, Rev. 1, June 1990.

Limiting the time and reasons for permitting the RTB to be bypassed is reasonable given the importance of the RTB trip function. Since the CTS is silent on permissible reasons for racking in and closing the RTB bypass breaker, and the ITS restricts the 12 hour bypass time to surveillance testing, and provides only 2 hours for maintenance activities, this change is more restrictive and has no adverse impact on safety.

M46 The CTS is revised to adopt a Containment Radioactivity High setpoint in ITS 3.3.6 for the R-11 and R-12 containment monitors to initiate containment isolation. The setpoint ensures the instrument is set at a value to permit the isolation function to be accomplished consistent with the analysis. Since no other similar specification exists, this change is more restrictive and has no adverse impact on safety.

M47 CTS Table 3.5-5, Item 11, is revised in ITS Table 3.3.3-1, Item 11 to specify two OPERABLE channels of containment hydrogen monitors. The overall effect of this change is to limit the allowed outage time for one inoperable channel to 30 days in accordance with ITS 3.3.3 Required Action A.1, at which time a report to the NRC is required. Submittal of a report is a reasonable action in this circumstance. This change is more restrictive and has no adverse impact on safety.

M48 CTS Table 3.4-1, Note 1, requires that, if either 4 kV undervoltage relay fails, the equivalent of an undervoltage signal must be inserted in the steam driven AFW pump start circuit within 4 hours; the affected relay must be repaired within 7 days, or commence a normal plant shutdown to hot standby. ITS Specification 3.3.8, Required Action B, requires under similar conditions, that the inoperable channel be placed in trip in 6 hours, or be in MODE 3 in 12 hours, and MODE 4 in 18 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. In MODE 4, these Functions are no longer required OPERABLE. These are more restrictive requirements with respect to failure to meet the allowed outage time of 6 hours, and has no adverse impact on safety.

CTS

Table 3.3.1-1 (page 1 of 8)
Reactor (Trip) System Instrumentation
Protection

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	TRIP SETPOINT(a)
[T3.5-2(1)] [T4.1-1(46,47)] 1. Manual Reactor Trip	1,2	2	B	SR 3.3.1.14	NA	NA
	3(b), 4(b), 5(b)	2	C	SR 3.3.1.14	NA	NA
[T 3.5-2(2)] 2. Power Range Neutron Flux						
[2.3.1.2.a] [T4.1-1(1)] a. High	1,2	4	D	SR 3.3.1.1 SR 3.3.1.2 SR 3.3.1.7 SR 3.3.1.11 SR 3.3.1.16	≤ [111.2]% 109.00 RTP	≤ [109]% 108.00% RTP
[2.3.1.1.a] [T4.1-1(1)] b. Low	1(c),2	4	E	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11 SR 3.3.1.16	≤ [27.1]% 24.76 RTP	≤ [25]% 23.25 RTP
3. Power Range Neutron Flux Rate						
a. High Positive Rate	1,2	4	E	SR 3.3.1.7 SR 3.3.1.11	≤ [6.8]% RTP with time constant ≥ [2] sec	≤ [5]% RTP with time constant ≥ [2] sec
b. High Negative Rate	1,2	4	E	SR 3.3.1.7 SR 3.3.1.11 SR 3.3.1.16	≤ [6.8]% RTP with time constant ≥ [2] sec	≤ [5]% RTP with time constant ≥ [2] sec
[T3.5-2(3)] [T4.1-1(2)] 3 (4). Intermediate Range Neutron Flux	1(b), 2(c)	2	F,G	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11	≤ [31]% 34.17 RTP	≤ [25]% RTP
	2(d)	2	H	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11	≤ [31]% 34.17 RTP	≤ [25]% RTP

(continued)

(a) Reviewer's Note: Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit.

(b) With Reactor Trip Breakers (RTBs) closed and Rod Control System capable of rod withdrawal.

(c) Below the P-10 (Power Range Neutron Flux) interlocks.

(d) Above the P-6 (Intermediate Range Neutron Flux) interlocks.

(e) Below the P-6 (Intermediate Range Neutron Flux) interlocks.

INSERT 3.3.1-2 (10)

(1) (9) (3)

SUPPLEMENT 1

CTS

(1)

3.3 INSTRUMENTATION

3.3.3 Post Accident Monitoring (PAM) Instrumentation

[3.5.1.2] [3.5.1.3] LCO 3.3.3 The PAM instrumentation for each Function in Table 3.3.3-1 shall be OPERABLE.

[3.5.1.2] APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

-----NOTES-----

[A29] 1. LCO 3.0.4 is not applicable.

[A5] 2. Separate Condition entry is allowed for each Function.

	CONDITION	REQUIRED ACTION	COMPLETION TIME
[T3.5-5 NOTES]	A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
[T3.5-5 NOTES]	B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.8 (6).	Immediately
[T3.5-5 NOTES]	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)

(44) INSERT 3.3.3-1

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SUPPLEMENT 1
CONVERSION PACKAGE SECTION 3.4
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 12 to Serial: RNP-RA/96-0141.

Remove Page	Insert Page
a. Part 1, "Markup of Current Technical Specifications (CTS)"	
3.1-4, 3.1-1, 3.1-2, 3.3-5, 4.6-3 3.1-3a, 4.1-12, 3.1-3d, 3.1-3e, 4.2-7a, 4.1-12, 3.1-19a, 4.1-11	3.1-4, 3.1-1, 3.1-2, 3.3-5, 4.6-3, 3.1-3a, 4.1-12,3.1-3d, 3.1-3e, 4.2-7a, 4.1-12, 3.1-19a, 4.1-11
b. Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
1 through 34	1 through 34
c. Part 3, "No Significant Hazards Consideration (NSHC), And Basis For Categorical Exclusion From 10 CFR 51.22"	
6 and 13	6 and 13
-	13a
d. Part 4, "Markup of NUREG-1431, Revision 1, `Standard Technical Specifications - Westinghouse Plants,' (ISTS)"	
3.4-3, 3.4-4, 3.4-5, 3.4-8, 3.4-9, 3.4-11, 3.4-14, 3.4-21, 3.4-26, 3.4-31, 3.4-34,3.4-37, 3.4-39	3.4-3, 3.4-4, 3.4-5, 3.4-8, 3.4-9, 3.4-11, 3.4-14, 3.4-21, 3.4-26, 3.4-21, 3.4-34, 3.4-37, 3.4-39
e. Part 5, "Justification of Differences (JFDs) to ISTS"	
1 through 7	1 through 7
f. Part 6, "Markup of ISTS Bases"	
B 3.4-8, B 3.4-14, B 3.4-25,	B 3.4-8, B 3.4-14, B 3.4-25,
Insert B 3.4.5-3,	B 3.4-56a
(No Page Number)	-
B 3.4-56	B 3.4-56
Insert B 3.4.11-2	B 3.4-56a
(No Page Number)	-
B 3.4-70, B 3.4-88	B 3.4-70, B 3.4-88
g. Part 7, "Justification for Differences (JFDs) to ISTS Bases"	
1 and 6	1 and 6
h. Part 8, "Proposed HBRSEP, Unit No. 2 ITS"	
3.4-4, 3.4-5, 3.4-11, 3.4-14,	3.4-4, 3.4-5, 3.4-11, 3.4-14

SUPPLEMENT 1
CONVERSION PACKAGE SECTION 3.4
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 12 to Serial: RNP-RA/96-0141.

Remove Page	Insert Page
3.4-15, 3.4-28, 3.4-35, 3.4-37, 3.4-40	3.4-15, 3.4-28, 3.4-35, 3.4-37 3.4-40

i. Part 9, "Proposed Bases to HBRSEP, Unit No. 2 ITS"

B 3.4-8, B 3.4-15, B 3.4-27 B 3.4-59, B 3.4-72	B 3.4-8, B 3.4-15, B 3.4-27 B 3.4-59, B 3.4-72

j. Part 10, "ISTS Generic Changes"

Cover Page	Cover Page
-	TSTF - 26 (Pages 2)
-	TSTF - 61 (Pages 2)

ITS

3.1.2 **Heatup and Cooldown** (A1)

[LCO 3.4.3] 3.1.2.1 The reactor coolant pressure [RCS temperature] and the system heatup and cooldown rates (with the exception of the pressurizer) shall be limited in accordance with Figure 3.1-1 and Figure 3.1-2 (for vessel exposure up to 24 EFPY). These limitations are as follows: (A29)

a. Over the temperature range from cold shutdown to hot operating conditions, the heatup rate shall not exceed 60°F/hr. in any one hour.

b. Allowable combinations of pressure and temperature for a specific cooldown rate are below and to the right of the limit lines for that rate as shown on Figure 3.1-2. This rate shall not exceed 100°F/hr. in any one hour. The limit lines for cooling rates between those shown in Figure 3.1-2 may be obtained by interpolation. (LA1)

c. Primary system hydrostatic leak tests may be performed as necessary, provided the temperature limitation as noted on Figure 3.1-1 is not violated. Maximum hydrostatic test pressure should remain below 2350 psia.

d. The overpressure protection system shall be OPERABLE[1], with both power operated relief valves OPERABLE with a lift setting of less than or equal to 420 psi whenever any RCS (See 3.4.12)

Add Actions A, B, C
SR 3.4.3.1 (M4)

[1] The overpressure protection system shall not be considered inoperable solely because either the normal or emergency power source for the PORV block valves is inoperable. (See 3.4.12)

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(A1)

3.0 LIMITING CONDITIONS FOR OPERATION

Except as otherwise provided for in each specification, if a Limiting Condition for Operation cannot be satisfied because of circumstances in excess of those addressed in the specification, the unit shall be placed in hot shutdown within eight hours and in COLD SHUTDOWN within the next 30 hours unless corrective measures are taken that permit operation under the permissible Limiting Condition for Operation statements for the specified time interval as measured from initial discovery or until the reactor is placed in a condition in which the specification is not applicable.

(See 3.0)

3.1 REACTOR COOLANT SYSTEM

Applicability

Applies to the operating status of the Reactor Coolant System.

Objective

To specify those Reactor Coolant System conditions which must be met to assure safe reactor operation.

Specification

3.1.1 Operational Components

3.1.1.1 Coolant Pumps

[LCO 3.4.5]

MODE 3

a. With reactor power less than 2% of rated thermal power and less than two reactor coolant pumps in operation, one of the following actions shall be taken: (M7)

as specified in the COLR (LA2)

1. maintain a shutdown margin of at least 4% Δk/k, or
2. open the lift disconnect switches for all control rods not fully withdrawn, or
3. open reactor trip breakers.

Add to LCO and Note: "Rod Control System is not capable of rod withdrawal; or" (A4)

Add LCO 3.4.5 ACTION D SR 3.4.5.1, SR 3.4.5.2, SR 3.4.5.3, SR 3.4.5.4, SR 3.4.5.5, SR 3.4.5.6, SR 3.4.5.7 (M8)

Add LCO "NOTE" (L1) (M38)

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[LCO 3.4.6] Two loops of any combination of RCS and RHR shall be operable, and

b. Power operation with less than three loops in service is prohibited. (A1) (See 3.4.4)

c. At least one reactor coolant pump or residual heat removal pump shall be in operation when T_{avg} > 200°F and reactor power is less than 2% of rated thermal power. (MODE 4) (M9) (M10) In the event this condition cannot be satisfied, the following actions shall be taken:

[RA C.1] 1. (Suspend all operations involving reduction of boron) Proceed to establish a boron concentration in the reactor coolant equal to or greater than that concentration needed to maintain a shutdown margin of 1% Δk/k at 200°F, and (immediately) (L2) (M11)

[RA C.2] 2. (initiate action to) Restore at least one reactor coolant pump or residual heat removal pump to operation within one hour, or prepare and submit a Special Report to the NRC within 30 days. (L3)

[NOTE 2] d. A reactor coolant pump may be started (or jogged) only if there is a steam bubble in the pressurizer or the steam generator temperature is no higher than 50°F higher than the temperature of the reactor coolant system. (A6)

Basis (A2)

Specification 3.1.1.1.a contains requirements designed to limit the consequences of the uncontrolled bank withdrawal at low or subcritical power conditions as analyzed in the safety analysis. The requirement of two reactor coolant pumps in operation below 2% power is consistent with the assumptions utilized in the bounding transient that was analyzed. The specification makes allowance for less than two pumps in operation by specifying either of three actions that must be taken. Either maintaining the specified shutdown margin, opening the lift disconnect switches on the control rods or opening the reactor trip breakers will prevent the occurrence of the postulated uncontrolled bank withdrawal transient, therefore allowing the two pump requirement to be lifted.

Maintaining a shutdown margin of 4% Δk/k is sufficient to prevent a return to criticality if the worth of the two most reactive control rod banks are simultaneously withdrawn as is the assumption of the postulated transient.

Add ACTIONS A, B
SR 3.4.6.1
SR 3.4.6.2
SR 3.4.6.3 (M11)

Add LCO 3.4.6 NOTE 1 (L1) (M38)

Add to LCO 3.4.6 NOTE 1
"c. Rod Control System is not capable of rod withdrawal" (A4)

ITS

3.3.1.3 When the reactor is in the hot shutdown condition, the requirements of 3.3.1.1 and 3.3.1.2 shall be met. Except that the accumulators may be isolated or otherwise inoperable relative to the requirements of 3.3.1.1.b. In addition, any one component as defined in 3.3.1.2 may be inoperable for a period equal to the time period specified in the subparagraphs of 3.3.1.2 plus 48 hours, after which the plant shall be placed in the cold shutdown condition utilizing normal operating procedures. The safety injection pump power supply breakers must be racked out when the reactor coolant system temperature is below 350°F and the system is not vented to containment atmosphere.

A1 — See 3.4.12, 3.5.1, 3.5.2, 3.5.3, 3.5.4

[LCO 3.4.7] 3.3.1.4 When the reactor is in the cold shutdown condition (except refueling operation when Specification 3.8.1.e applies), both residual heat removal loops must be operable. Except that either the normal or emergency power source to both residual heat removal loops may be inoperable.

(A7: MODE 5, loops filled) (A12: train) (A8) (L6: or 1 RHR train and 1 SG with level ≥ 16%) (M15: 1 RHR train shall be in operation)

[ACTION A] a. If one residual heat removal loop becomes inoperable during cold shutdown operation, within 24 hours verify the existence of a method to add make-up water to the reactor coolant system such as charging pumps, safety injection pumps (under adequate operator control to prevent system overpressurization), or primary water (if the reactor coolant system is open for maintenance) as back-up decay heat removal method. Restore the inoperable RHR loop to operable status within 14 days or prepare and submit a Special Report to the Commission within the next 30 days outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the loop to operable status.

(A12) (L17) (M39: and required SG level not within limits; Immediately initiate action to a second; or immediately initiate action to restore SG level to within limits) (L16)

[ACTION B] b. If both residual heat removal loops become inoperable during cold shutdown operation, close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere prior to the reactor coolant average temperature exceeding 200°F, restore at least one residual

(A12: train) (L4) (A10: immediately initiate action to) (M14: or no RHR train in operation) (M39)

Add LCO NOTE 1 (L1) (M38)

Add LCO NOTE 2 (L5)

Add LCO NOTE 4 (M12)

Amendment No. ~~89~~, 146

Supplement 1

Specification 3.4.9

(A1)

ITS

4.6.3.5 The batteries shall be subjected to a performance test once every five years

(See 3.8.4)

4.6.3.6 The batteries shall be subjected to a service test at least once per 18 months, during a shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle. Surveillance 4.6.3.5 may be performed at five year intervals in lieu of this test.

4.6.4 Pressurizer Heaters' Emergency Power Supply

[SR 3.4.9.3] The emergency power supply for the pressurizer heaters shall be demonstrated operable each refueling shutdown by transferring power from normal to the emergency power supply and energizing the heaters.

4.6.5 Battery Chargers

Demonstrate the in-service battery charger is operable by monitoring the output voltage daily, five days per week, and during normal equalizing charges.

(See 3.8.4)

Basis

The tests specified are designed to demonstrate that the diesel generators will provide power for operation of equipment. They also assure that the emergency generator system controls and the control systems for the safety features equipment will function automatically in the event of a loss of all normal 480 V AC station service power.[1]

The test to ensure proper operation of engineered safety features upon loss of AC power is initiated by tripping the breakers supplying normal power to the 480 volt buses and initiating a safety injection signal. This test demonstrates the proper tripping of motor feeder breakers, main supply and tie breakers on the affected bus, operation of the diesel generators, and sequential starting of essential equipment.

(A2)

Supplement 1

A1

ITS

3.1.1.3 Pressurizer (Pzr)

a. At least one Pzr code safety valve shall be operable whenever the Reactor Head is on the vessel and the RCS is not open for maintenance. LA3

b. The Pzr, including necessary spray and heater control systems, shall be operable before the reactor is made critical. See 3.4.9

MODES 1, 2, 3

c. Whenever the RCS temperature is above 350°F or the reactor is critical:

[LCO 3.4.10]

1. All three pressurizer code safety valves shall be operable. Their lift settings shall be maintained between 2485 2410 psig and 2560 psig. L7

2. At least 125 kw of pressurizer heaters capable of being powered from an emergency power source shall be operable.

d. If the requirements of 3.1.1.3.c.2 are not met and at least 125 kw or Pzr heaters capable of being powered from an emergency source cannot be provided within 72 hrs., commence a normal plant shutdown and cooldown to an RCS average temperature of less than or equal to 350°F. See 3.4.9

Basis

The pressurizer is necessary to maintain acceptable system pressure during normal plant operation, including surges that may result following anticipated transients.

Each of the pressurizer code safety valves is designed to relieve 288,000 lbs. per hr. of saturated steam at the valve setpoint.[1] Below 350°F and 450 psig in the Reactor Coolant System (RCS), the Residual Heat Removal System can remove decay heat and thereby control system temperature. The pressurizer A2

Add Actions A,B M20

Add LCO NOTE L9

Supplement 1

Specification 3.4.10

A1

ITS

TABLE 4.1-3

FREQUENCIES FOR EQUIPMENT TESTS

		Check	Frequency	Maximum Time Between Tests
1.	Control Rods	Rod drop times of all full length rods	Each refueling shutdown	NA*
2.	Control Rod	Partial movement of all full length rods	Every 2 weeks during reactor critical operations	20 days
3.	Pressurizer Safety Valves	Set point	Each refueling shutdown (In Accordance with IST Program)	NA
4.	Main Steam Safety Valves	Verify each required MSSV lift setpoint per Table 4.1-4 in accordance with the Inservice Testing Program. Following testing, lift setting shall be within +/- 1%.	In accordance with the Inservice Testing Program	NA
5.	Containment Isolation Trip	Functioning	Each refueling shutdown	NA
6.	Refueling System Interlocks	Functioning	Prior to each refueling shutdown	NA
7.	Service Water System	Functioning	Each refueling shutdown	NA
8.	DELETED			
9.	Primary System Leakage	Evaluate	Daily when reactor coolant system is above cold shutdown condition	NA
10.	Diesel Fuel Supply	Fuel Inventory	Weekly	10 days
11.	DELETED			
12.	Turbine Steam Stop, Control, Reheat Stop, and Interceptor Valves	Closure	Quarterly during power operation and prior to startup	115 days

[SR 3.4.10.1]

A15

See 3.1.4 · See 3.7.1 · See 3.6.3, 3.3.2 · See 3.9.1 · See 3.7.7 · See 3.7.7 · See 3.8.3 · See 3.7.1

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3. With both the Reactor Vessel Head and Pressurizer Steam Space vent paths inoperable, restore at least one vent path to operable status within 7 days or be in HOT SHUTDOWN within 6 hours and COLD SHUTDOWN within the following 30 hours. (A1) (R1)

3.1.1.5 Relief Valves

[LCO 3.4.11] Whenever T_{avg} is above 350°F or the reactor is critical (MODE 1, 2, 3) both power operated relief valves (PORVs) and their associated block valves shall be OPERABLE.[1] (A16: and capable of being manually cycled)

[ACTION A] a. With one or both PORVs inoperable because of leakage through the PORV resulting in excessive RCS leakage, i.e., not in accordance with the leakage criteria in Technical Specification 3.1.5.2:

1. Within 1 hour either restore the PORV(s) to OPERABLE status or close the associated block valve(s) with power maintained to the block valve(s); or

[ACTION D] 2. Be in at least HOT SHUTDOWN (MODE 3) condition using normal operating procedures within the next 12 (6) hours and cool down the RCS below 3 T_{avg} of 350°F (MODE 4) within the following 12 hours. (M21)

Add ACTIONS "NOTE 1" (A17)

---

[1] PORV block valves shall not be considered inoperable solely because either their normal or emergency power source is inoperable. (A8)

[2] Power operation may continue pursuant to the requirements of this specification with the associated block valve closed, as a precautionary measure, to isolate minor leakage prior to the RCS leakage exceeding the leakage criteria in Technical Specification 3.1.5.2, with power maintained to the block valve during the period of the discretionary isolation. (M22)

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[ACTION B] b. With one PORV inoperable due to causes other than (1) leakage through the PORV resulting in excessive RCS leakage or (2) discretionary isolation to prevent minor leakage from becoming excessive: and not capable of being manually cycled

A1

A18

1. Within 1 hour either restore the PORV to OPERABLE status or close its associated block valve and remove power from the block valve; and

2. Restore the PORV to OPERABLE status within the following 72 hours; or

[ACTION D] 3. Be in at least HOT SHUTDOWN MODE 3 condition using normal operating procedures within the next 12 6 hours and cool down the RCS below a T_{avg} of 350°F MODE 4 within the following 12 hours.

M21

[ACTION E] c. With both PORVs inoperable due to causes other than (1) leakage through the PORV resulting in excessive RCS leakage or (2) discretionary isolation to prevent minor leakage from becoming excessive:

1. Within 1 our either restore at least one PORV to OPERABLE status; or close its associated block valve and remove power from the block valve; and

2. Be in at least HOT SHUTDOWN MODE 3 condition using normal operating procedures within the next 12 6 hours and cool down the RCS below a T_{avg} of 350°F MODE 4 within the following 12 hours.

M21

ITS

A1

[SR 3.4.11.3] c. Operating the solenoid air control valves and check valves for their associated accumulators in PORV control systems through one complete cycle of full travel or function testing of individual components.

A30

[SR 3.4.11.1] 4.2.4.2 Each block valve shall be demonstrated OPERABLE at least once per 92 days by operating the valve through one complete cycle of full travel unless the block valve is closed in order to meet the requirements of Specification 3.1.1.5.b. or c. Required Action of Condition B or C.

18 MOS

[SR 3.4.11.4] 4.2.4.3 The accumulators for the PORVs shall be demonstrated OPERABLE at each refueling by isolating the normal air and nitrogen supplies and operating the valves through a complete cycle of full travel.

LA4

4.2.5 Low-Temperature Overpressure Protection

4.2.5.1 Each PORV shall be demonstrated OPERABLE by:

a. Performance of an ANALOG CHANNEL OPERATIONAL TEST on the actuation channel. but excluding valve operation. within 31 days prior to entering a condition in which the PORV is required OPERABLE and at least once per 31 days thereafter when the PORV is required OPERABLE: and

b. Performance of a CHANNEL CALIBRATION at each refueling shutdown: and

c. Verifying the PORV block valve is open at least once per 72 hours when the PORV is being used for overpressure protection.

See 3.4.12

Specification 3.4.13

(A1)

- 1TS

TABLE 4.1-3

FREQUENCIES FOR EQUIPMENT TESTS

		Check	Frequency	Maximum Time Between Tests	
1.	Control Rods	Rod drop times of all full length rods	Each refueling shutdown	NA	See 3.1.4
2.	Control Rod	Partial movement of all full length rods	Every 2 weeks during reactor critical operations	20 days	See 3.1.4
3.	Pressurizer Safety Valves	Set point	Each refueling shutdown	NA	See 3.4.10
4.	Main Steam Safety Valves	Verify each required MSSV lift setpoint per Table 4.1-4 in accordance with the Inservice Testing Program. Following testing, lift setting shall be within +/- 1%.	In accordance with the Inservice Testing Program	NA	See 3.7.1
5.	Containment Isolation Trip	Functioning	Each refueling shutdown	NA	See 3.6.3 3.7.2
6.	Refueling System Interlocks	Functioning	Prior to each refueling shutdown	NA	See 3.9.1
7.	Service Water System	Functioning	Each refueling shutdown	NA	See 3.7.7
8.	DELETED				
9. [SA 3.4.13.1]	Primary System ~~Leakage~~ Water inventory balance	Evaluate	~~Daily~~ when reactor coolant system is above cold shutdown condition MODES 1, 2, 3, 4 / Once within 12 hours after reaching steady state operation conditions AND 72 hours thereafter during steady state operation (L11)	~~NA~~	
10.	Diesel Fuel Supply	Fuel Inventory	Weekly	10 days	See 3.8.3
11.	DELETED				
12.	Turbine Steam Stop, Control, Reheat Stop, and Interceptor Valves	Closure	Quarterly during power operation and prior to startup	115 days	See 3.7.1

 Amendment No. 142, 155, 164, 171

Supplement 1

A1

ITS

TABLE 3.1-1

PRIMARY COOLANT SYSTEM PRESSURE ISOLATION VALVES

[SR 3.4.14.1]

System	Valve No.	Maximum[a] Allowable Leakage
Low-Pressure Safety Injection/Residual Heat Removal		≤ 5.0 GPM for each[b] valve
Loop 1, cold leg	875A 876A	
Loop 2, cold leg	875B 876B	
Loop 3, cold leg	875C 876C	
High-Pressure Injection		
Loop 2, hot leg	874B	
Loop 3, hot leg	874A	

A32: at an RCS pressure ≥ 2235 psig

LA5

A31: and verify the margin between the results of the previous leak rate test and the 5 gpm limit has ~~not~~ been reduced by ≥ 50% for valves with leakage rates > 1.0 gpm

[SR 3.4.14.1]

(a) 1. Leakage rates less than or equal to 1.0 gpm are considered acceptable.

2. Leakage rates greater than 1.0 gpm but less than or equal to 5.0 gpm are considered acceptable if the latest measured rate has not exceeded the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate of 5.0 gpm by 50% or greater.

3. Leakage rates greater than 1.0 gpm but less than or equal to 5.0 gpm are considered unacceptable if the latest measured rate exceeded the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate of 5.0 gpm by 50% or greater.

4. Leakage rates greater than 5.0 gpm are considered unacceptable.

(b) More than one valve may be tested in parallel. The combined leakage shall not exceed 5.0 gpm. Redundant valves in each line shall not be tested in series.

LA5

Specification 3.4.16

(A1)

ITS

NOTES TO TABLE 4.1-2

(LA6)

(1) A gross activity analysis shall consist of the quantitative measurement of the total radioactivity of the primary coolant of units of Ci/gram.

(2) A radiochemical analysis shall consist of the quantitative measurement of each radionuclide with half life greater than 30 minutes making up at least 95% of the total activity of the primary coolant.

(A27) Add SR 3.4.16.3 Note

(LA10)

(3) When iodine or particulate radioactivity levels exceed 10% of the limit in Specification 3.9.2.1, the sampling frequency shall be increased to a minimum of once each day.

(5) Deleted.

[SR 3.4.16.3] (6) Sample to be taken after a minimum of 2EFPD and 20 days of power operation have elapsed since the reactor was last subcritical for 48 hours or longer.

[SR 3.4.16.2] (7) Samples are to be taken in the power operating condition.

[SR 3.4.16.3] [RA A.1] (8) Sample taken at all operating conditions whenever the specific activity exceed 1.0 Ci/gram DOSE EQUIVALENT I-131 or 100/E Ci/gram. These samples are to be taken until the specific activity of the reactor coolant system is restored within its limits.

[SR 3.4.16.2] (9) One sample between 2 and 6 hours following a thermal power change exceeding 15 percent of the rated thermal power within a one-hour period. Samples are required when in the hot shutdown or power operating modes.

(See 3.7.15)

(10) Sample whenever that gross activity determination indicates iodine concentrations are greater than 10% of the allowable limit.

(11) Sample whenever the gross activity determination indicates iodine concentrations are below 10 percent of the allowable limit.

NA* - Not applicable.

Supplement 1

ADMINISTRATIVE CHANGES

A1 In the conversion of the H. B. Robinson Steam Electric Plant (HBRSEP), Unit 2 Current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS) certain wording preferences or conventions are adopted which do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make ITS consistent with the conventions in the Standard Technical Specifications, Westinghouse Plants, NUREG 1431, Revision 1 (i.e., Improved Standard Technical Specifications (ISTS)). These changes are administrative, and have no adverse impact on safety.

A2 The CTS Bases (and References) are not retained in the ITS, but are replaced in their entirety. The ITS includes significantly expanded and improved Bases. The Bases do not define or impose any specific requirements but serve to explain, clarify and document the reasons (i.e., Bases) for the associated Specification. The Bases are not part of the Technical Specifications required by 10 CFR 50.36. This change is administrative, and has no adverse impact on safety.

A3 CTS Specification 2.1.b, which permits operation at power levels of ≤20% RTP with one reactor coolant pump in operation, and CTS Specification 2.1.c, which permits operation at power levels of ≤12% RTP on natural circulation, are not retained in the ITS. These Specifications were used during initial startup and physics testing, and have not been valid with recent core designs, which assume three reactor coolant pumps are in operation at all power levels in the safety analysis. This change is administrative since CTS 3.1.1.1.b prohibits power operation with less than three RCS loops in service, and has no adverse impact on safety.

A4 CTS Specification 3.1.1.1.a condition 2, which requires that the lift disconnect switches for all control rods not fully withdrawn and condition 3, which requires that the reactor trip breakers, is revised in ITS LCO 3.4.5, in LCO 3.4.5 "Note," and in LCO 3.4.6 to add "rod control system capable of rod withdrawal. Since either CTS conditions 2 or 3 render the rod control system incapable of rod withdrawal, this change is administrative, and has no adverse impact on safety.

A5 Not Used.

A6 CTS Specification 3.1.1.1.d is revised in the ITS by deleting the parenthetical term "(or jogged)." This Specification provides requirements for "starting" a reactor coolant pump. "Starting" and "jogging" a pump have the same meaning, with the perceived difference being in the purpose and length of time the pump is energized. This change is administrative, and has no adverse impact on safety.

A7 CTS Specification 3.3.1.4 has Applicability in "the cold shutdown condition (except refueling operations ...)." ITS Specifications 3.4.7 and 3.4.8 have Applicability in MODE 5, with the RCS loops "filled," and "not filled," respectively. This change more specifically defines the conditions of applicability for this Specification. This change is administrative, and has no adverse impact on safety.

A8 CTS Specification 3.3.1.4 and Footnote 1 to CTS Specifications 3.1.1.5 and 3.1.2.1.d, which state that certain components shall not be considered inoperable solely because either their normal or emergency power source is inoperable, are not retained in the ITS. ITS Specification 1.1 defines "OPERABLE-OPERABILITY" as existing when "normal <u>or</u> emergency electrical power" is available. This change is administrative, and has no adverse impact on safety.

A9 Not Used.

A10 CTS Specification 3.3.1.4.b requires that at least one RHR loop be restored to operable status as soon as possible. ITS Specifications 3.4.7 and 3.4.8 require that action be initiated immediately to restore at least one RHR loop to operable status. This change is administrative, and has no adverse impact on safety.

A11 CTS Specification 3.3.1.4.b contains a requirement that, under certain conditions, the reporting requirements of CTS Specification 6.6.1 and 6.6.2 be followed. This requirement is not retained in the ITS. Reporting requirements are adequately addressed in 10 CFR 50.72 and 10 CFR 50.73, and need not be repeated in the ITS. This change is administrative, and has no adverse impact on safety.

A12 CTS Specifications 3.3.1.4 is revised in the ITS by replacing the term, "loop," with the term, "train," when referring to the RHR System. Plant design basis consists of 2 RHR pumps and heat exchangers (and attendant power, instrumentation and control functions), arranged in parallel in a single piping circuit, thereby not having full redundancy, as the term "loop" would imply. This change is administrative, and has no adverse impact on safety.

A13 CTS Specification 3.1.3.4 requires that the reactor be maintained subcritical by at least 1% until normal water level is established in the pressurizer. ITS Specification 3.4.9 requires that a water level of ≤63.3%, which is the upper end of the normal water level control band, be maintained in MODE 1. It also requires that a water level of ≤92% be maintained in MODES 2 and 3, which is used in conjunction with plant cooldown, to eliminate pressurizer surge line stratification concerns. Substitution of the numerical values for the term "normal," is an administrative change, and has no adverse impact on safety.

A14 CTS Specification 3.1.1.3.b, which requires that the pressurizer and necessary spray and heater controls be operable before the reactor is made critical, is not retained in the ITS. This Specification is a restatement of the operability requirements covered in CTS Specification 3.1.3.4, as well as details that are part of the definition of OPERABLE. This change is administrative, and has no adverse impact on safety.

A15 CTS Table 4.1-3 requires that pressurizer safety valve setpoints be checked at a frequency of "each refueling shutdown." ITS Specification 3.4.10 requires setpoint testing at a frequency "in accordance with the Inservice Testing Program." The nominal frequency of "each refueling shutdown" is 18 months, as is the frequency specified in the Inservice Testing (IST) Program. This change is administrative, and has no adverse impact on safety.

A16 CTS Specification 3.1.1.5.a requires certain actions be taken when PORVs are inoperable "because of leakage through the PORV resulting in excessive RCS leakage ..." ITS Specification 3.4.11 describes the inoperable condition as "capable of being manually cycled." When excessive leakage through a PORV occurs, the PORV block valve is intentionally closed to stop the leakage, causing the PORV to be considered inoperable, although the valve is still capable of being manually cycled if required. This change is administrative, and has no adverse impact on safety.

A17 The CTS is revised to adopt ISTS 3.4.11 ACTIONS "NOTE 1," which provides for separate Condition entry for each PORV. In conjunction with ITS 1.3, "Completion Times," this Note provides direction consistent with the intent of the existing ACTIONS for inoperable PORVs in the CTS and current interpretation of the CTS with respect to component inoperability. In addition, the ITS 3.4.11 Required Actions for each Condition provide adequate compensatory measures for each inoperable valve. Therefore, this change is administrative and has no adverse impact on safety.

A18 CTS Specification 3.1.1.5.b requires certain actions be taken when PORVs are inoperable "due to causes other than ... leakage ... or ... discretionary isolation ..." ITS Specification 3.4.11 describes the condition as being inoperable "and not capable of being manually cycled." When a PORV is inoperable for reasons other than leakage or discretionary isolation, the reason is a physical malfunction of the valve, and the valve is not capable of being manually cycled. This change is administrative and has no adverse impact on safety.

A19 CTS Specifications 3.1.2.1.d.5 and 6.9.3.1.e, which require that a report be submitted to the NRC in the event the PORVs or the RCS vent(s) are used to mitigate an RCS pressure transient, are not retained in the ITS. Reporting requirements are adequately addressed in 10 CFR 50.73,

and need not be repeated here. This change is administrative, and has no adverse impact on safety.

A20 CTS Specification 3.1.2.1.d.6, which permits startup operations to continue with inoperable PORVs, is not retained in the ITS. Such operational situations are adequately addressed in ITS Specification 3.0.2. This change is administrative, and has no adverse impact on safety.

A21 The CTS is revised to adopt ISTS SR 3.4.13.2, which requires verification of SG tube integrity in accordance with the SG Tube Surveillance Program. This SR emphasizes the importance of SG tube integrity. Since the SG Tube Surveillance Program already exists in CTS Specification 4.2.1.1, and does not impose any new requirements, this change is administrative and has no adverse impact on safety.

A22 CTS Specification 3.1.5.4 requires pressure isolation valve (PIV) leakage to be maintained within limits. ITS Specification 3.4.14 requires each PIV to be OPERABLE. This is a change to the nomenclature used in the ISTS to more appropriately describe the Specification. This change is administrative, and has no adverse impact on safety.

A23 CTS Specification 3.1.2.1 is modified to add LCO 3.4.12.d and a Note to the LCO. LCO 3.4.12.d requires no SI pump be capable of injecting into the RCS with any RCS cold leg temperature less than 175°F. The Note permits all charging pumps to be capable of injection into the RCS when no SI pumps are capable of injection into the RCS. Since these requirements existed in the CTS prior to the change to CTS, for the plant condition when any RCS cold leg temperature is less than 175°F, this change is administrative, and has no adverse impact on safety.

A24 CTS Table 4.1-2, Item 9 and Note 3 requires periodic sampling of stack iodine and particulate. This sampling requirement duplicates sampling required by CTS Table 4.10-2 which is relocated (DOC R1 in Relocated Specifications). Since this requirement duplicates relocated CTS requirements, its elimination is considered to be administrative.

A25 Consistent with existing plant design and operations, a change to the Applicability of CTS 3.1.5.4.a has been proposed which limits applicability of the specification to exclude the valves in the RHR flow path when in or during the transition to or from the RHR mode of operation. This is an administrative change because the existing specification has never been applied to these valves when the flow path described above is in use. This is acceptable practice because when the plant is in the transition to or from RHR operation, the RCS pressure is low and the RHR interlock is no longer required to protect the piping from a manual opening of the RHR valves. Normally, ITS LCO 3.4.14 is met when both PIV leakage is within limits and when the RHR interlock is operable. Below the RHR interlock setpoint, the interlock is not

required to be operable. In the condition where RHR is in use, the ITS LCO is only required to be met when PIV leakage is within limits, and the RHR PIVs remain functional. However, the exception to Applicability is needed for the RHR valves when open in MODE 4 because the PIV leakage requirements of LCO 3.4.14 are still required to be met. The proposed Specifcation 3.4.14 is consistent with NUREG-1431 and clarifies the existing application and practice associated with these valves.

A26 Three notes are added to CTS Table 4.1-3 item 17 to clarify specific testing issues. These notes, found in ITS SR 3.4.14.1, involve performance of leakage testing on each RCS PIV or isolation valve used to satisfy the required actions. Note 1 establishes that the SR is not required to be performed in MODES 3 and 4. This note addresses the fact that normally the tests are performed in MODES 1 and 2 during periods when differential pressure are high and conditions are stable but also allows the tests to be performed in MODES 3 and 4. As a result, it is complementary and supports the Frequency of prior to entry into MODE 2 whenever the unit has been in MODE 5 for 7 days or more, if leakage testing has not been performed in the previous 9 months. Note 2 establishes that the SR is not required to be performed on the RCS PIVs located in the RHR flow path when in the shutdown cooling mode of operation. This is because PIVs contained in the RHR shutdown cooling flow path must be leakage rate tested after RHR is secured and stable unit conditions and the necessary differential pressures are established. Note 3 addresses the issue that testing must be performed once after the valve has been opened by flow or exercised to ensure tight reseating. PIVs disturbed in the performance of this Surveillance should also be tested unless it has been established that an infinite testing loop cannot practically be avoided. These notes provide information not specifically addressed in the CTS but do not change any technical intent and are therefore considered administrative and are consistent with NUREG-1431.

A27 A note is added to the CTS Table 4.1-2 Note 6 to establish sampling is not required to be performed within 31 days after the requirements of Note 6 are satisfied. This same note supplements ITS SR 3.4.16.3 which is equivalent to CTS Table 4.1-2 Note 6, which does not impose any time requirement for the sampling requirement to be performed (i.e, the sample could be performed after 1 day or after 183 days). The 31 day period allows adequate time to ensure that the radioactive materials are at equilibrium so the analysis for $\bar{E}$ is representative and not skewed by a crud burst or other similar abnormal event.

A28 Additional clarifying information is provided in CTS 4.2.4.1 to be consistent with NUREG-1431. The CTS states that the PORVs shall be demonstrated OPERABLE at each refueling while the Frequency to ITS SR 3.4.11.2 provides the clarification, "prior to entering MODE 2 from MODE 3 if not performed in the previous 18 months." This clarification reiterates the need to perform this SR in MODE 3 but must be done at a

frequency of 18 months. The Note to ITS SR 3.4.11.2 also addresses the need to perform the SR in MODE 3 and provides additional information to ensure the test is performed early in MODE 3 since it is a MODE of applicability. These changes provide additional information that do not change technical intent and are considered administrative.

A29 CTS Specification 3.1.2.1 is modified by the addition of "RCS temperature" to the LCO statement in ITS LCO 3.4.3. CTS Figures 3.1-1 and 3.1-2 are defined as a function of RCS pressure and RCS temperature. Since these figures are retained as Figures 3.4.3-1 and 3.4.3-2 in ITS Section 3.4.3, and since the figures remain identical in technical content, this change provides additional information that does not change technical intent. Therefore, this change is considered administrative, and has no impact on safety.

A30 CTS Specification 4.2.4.1.c, which includes Surveillance Requirements for the nitrogen supply to the PORVs, is revised in ITS SR 3.4.11.3 by removing the separate optional requirement of functional testing of individual components from the Surveillance Requirement. The configuration of the nitrogen supply to the PORVs is such that a functional test of individual solenoid air control valves and check valves for the associated accumulators is performed in the same manner as the surveillance is described in the ITS. Therefore this change is administrative, and has no impact on safety.

A31 CTS Table 3.1-1, Note (a) Items 1 and 2, which requires that the leakage rate trend between the current test and the previous test show that any decrease in the margin between the measured leakage in the previous test and the current test be less than 50% of the total margin of the previous test, is restated in ITS in accordance with writing standards for ISTS. This change has no effect on the method of performance of the test and is therefore administrative, and has no impact on safety.

A32 CTS Table 3.1-1, which establishes the maximum allowable leakage from each Pressure Isolation Valve (PIV) as ≤ 5 gpm is modified in the ITS SR 3.4.14.1 to add the requirement to evaluate the leakage at ≥ 2235 psig. The ASME Boiler & Pressure Vessel (B&PV) Code, Section XI requires that leakage measured at a lower pressure than normal operating pressure be corrected to the leakage value corresponding to the normal operating pressure. Since this change is in accordance with the Code and plant practice, this change is administrative, and has no adverse impact on safety.

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 The CTS is revised to adopt ISTS Specification 3.4.1. ITS 3.4.1 provides operational requirements for maintaining pressurizer pressure, RCS average temperature, and RCS total flow rate within the limits assumed in the safety analysis. The safety analyses of normal operating conditions and anticipated operational occurrences assume initial conditions within the normal steady state envelope. The limits placed on RCS pressure, temperature, and flow rate ensure that the minimum departure from nucleate boiling ratio (DNBR) will be met for each of the transients analyzed. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M2 CTS Specification 3.1.3.2 requires that the reactor not be made critical above and to the left of the criticality limit line on the P/T heatup curve. ITS Specification 3.4.2 requires that the reactor be made critical at an RCS average temperature of ≥ 530°F. Although the RCS minimum temperature for criticality is not itself an initial condition assumed in Design Basis Accidents (DBAs), the closely aligned temperature for hot zero power (HZP) is a process variable that is an initial condition of DBAs, such as the rod cluster control assembly (RCCA) withdrawal, RCCA ejection, and main steam line break accidents performed at zero power that either assumes the failure of, or presents a challenge to, the integrity of a fission product barrier.

Low low power safety analyses assume initial RCS loop temperatures ≥ the HZP temperature of 547°F. The minimum temperature for criticality limitation provides a band of 17°F, for critical operation below HZP. This band allows critical operation below HZP during plant startup and does not adversely affect any safety analyses since the MTC is not significantly affected by the temperature difference between HZP and the minimum temperature for criticality. This change therefore imposes more restrictive requirements, and has no adverse impact on safety.

M3 The CTS is revised to adopt ISTS Specification 3.4.2 ACTION A and SR 3.4.2.1 to provide limiting conditions for operation such that the reactor will not be made or maintained critical at a temperature less than a small band below that which is assumed in the safety analysis. CTS 3.1.3.2 does not address any required actions if the requirement is not met resulting in meeting the requirements of CTS 3.0. This results in placing the plant in a non-applicable MODE within 8 hours. ITS 3.4.2 Action A requires this to be accomplished within 30 minutes. If the parameters that are outside the limit cannot be restored, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to MODE 2 with $K_{eff} < 1.0$ within 30 minutes. Rapid reactor shutdown can be readily and practically achieved within a 30 minute period. The allowed time is reasonable, based on operating experience, to reach MODE 2 with $K_{eff} < 1.0$ in an orderly manner and without challenging plant systems. SR 3.4.2.1

requires RCS loop average temperature to be verified at or above 530°F every 30 minutes when the low T_{avg} alarm is not reset and any RCS loop T_{avg} < 543°F. The SR to verify RCS loop average temperatures every 30 minutes is frequent enough to prevent the inadvertent violation of the LCO. Since these changes impose new or more limiting requirements, it is more restrictive and has no adverse impact on safety.

M4 The CTS is revised to adopt ISTS Specification 3.4.3 ACTIONS A, B, and C; and SR 3.4.3.1 to provide requirements such that the reactor vessel is not operated outside the bounds of the stress analysis, and that stresses are not increased in other RCPB components. No explicit actions are currently provided for non-compliance with the reactor coolant system pressure and temperature limits of CTS 3.1.2.1. As a result, CTS 3.0 applies which requires placing the unit in a non-applicable condition. The requirements of CTS 3.0 do not provide adequate compensatory measures for this condition. Therefore, ACTIONS and a Surveillance Requirement are provided consistent with NUREG-1431. Action A requires operation outside P/T limits during MODE 1, 2, 3, or 4 be corrected so that the RCPB is returned to a condition that has been verified by stress analyses. The 30 minute outside the Completion Time reflects the urgency of restoring the parameters to within the analyzed range. Most violations will not be severe, and the activity can be accomplished in this time in a controlled manner. Besides restoring operation within limits, an evaluation is required to determine if RCS operation can continue. The 72 hour Completion Time is reasonable to accomplish the evaluation. If a Required Action and associated Completion Time of Condition A are not met, the plant must be placed in a lower MODE because either the RCS remained in an unacceptable P/T region for an extended period of increased stress or a sufficiently severe event caused entry into an unacceptable region. Either possibility indicates a need for more careful examination of the event, best accomplished with the RCS at reduced pressure and temperature. In reduced pressure and temperature conditions, the possibility of propagation with undetected flaws is decreased. If the required restoration activity cannot be accomplished within 30 minutes, Required Action B.1 and Required Action B.2 must be implemented to reduce pressure and temperature. If the required evaluation for continued operation cannot be accomplished within 72 hours or the results are indeterminate or unfavorable, action must proceed to reduce pressure and temperature as specified in Required Action B.1 and Required Action B.2. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. Action C specifies that actions must be initiated immediately to correct operation outside of the P/T limits at times other than when in MODE 1, 2, 3, or 4, so that the RCPB is returned to a condition that has been verified by stress analysis. The immediate Completion Time reflects the urgency of initiating action to restore the parameters to within the analyzed range. Most violations will not be severe, and the activity

can be accomplished in this time in a controlled manner. SR 3.4.3.1 requires verification that operation is within the limits of Figures 3.4.3-1 and 3.4.3-2 is required every 30 minutes when RCS pressure and temperature conditions are undergoing planned changes. This Frequency is considered reasonable in view of the control room indication available to monitor RCS status. Also, since temperature rate of change limits are specified in hourly increments, 30 minutes permits assessment and correction for minor deviations within a reasonable time. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M5 CTS Specifications 3.1.1.1.b and 3.3.1.1.i prohibit "power operation" (≥2% of rated power) with less than three RCS Loops in service. ITS Specification 3.4.4 requires that three RCS Loops be in operation when in MODES 1 (>5% RTP) and 2 (≤5% RTP, with k_{eff} ≥.99). In MODES 1 and 2, the reactor is critical and thus has the potential to produce maximum THERMAL POWER. Thus, to ensure that the assumptions of the accident analyses remain valid, all RCS loops are required to be OPERABLE and in operation in these MODES to prevent DNB and core damage. This change imposes more restrictive requirements, and has no adverse impact on safety.

M6 The CTS 3.1.1.1 is revised to adopt ISTS Specification 3.4.4 ACTION A and SR 3.4.4.1 to require that adequate forced reactor coolant flow is provided for core heat removal. No explicit actions are currently provided for non-compliance with the reactor coolant system having less than three loops in service. As a result, CTS 3.0 applies which requires placing the unit in a non-applicable MODE within 8 hours. ISTS 3.4.4.1 Action A requires this to be accomplished within 6 hours. If the requirements of the LCO are not met, the Required Action is to reduce power and bring the plant to MODE 3. This lowers power level and thus reduces the core heat removal needs and minimizes the possibility of violating DNB limits. The Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging safety systems. This SR requires verification every 12 hours that each RCS loop is in operation. The Frequency of 12 hours is sufficient considering other indications and alarms available to the operator in the control room to monitor RCS loop performance. Since these changes impose new or more limiting requirements, it is more restrictive and has no adverse impact on safety.

M7 CTS Specification 3.1.1.1.a requires two reactor coolant pumps to be in operation with reactor power levels less than 2% RTP. ITS Specification 3.4.5 requires two RCS Loops to be in operation (with rod withdrawal capability) in MODE 3. The ITS requires three RCS loops in operation in MODE 2, this change imposes more restrictive requirements and has no adverse impact on safety. In MODE 3, this LCO ensures forced circulation of the reactor coolant to remove decay heat from the core

and to provide proper boron mixing. The most stringent condition of the LCO, that is, two RCS loops OPERABLE and two RCS loops in operation, applies to MODE 3 with RTBs in the closed position. The least stringent condition, that is, two RCS loops OPERABLE and one RCS loop in operation, applies to MODE 3 with the RTBs open. Whenever the reactor trip breakers (RTBs) are in the closed position and the control rod drive mechanisms (CRDMs) are energized, an inadvertent rod withdrawal from subcritical, resulting in a power excursion, is possible. In addition, the possibility of a power excursion due to the ejection of an inserted control rod is possible with the breakers closed or open. Therefore, in MODE 3 with RTBs in the closed position and Rod Control System capable of rod withdrawal, accidental control rod withdrawal from subcritical is postulated and requires at least two RCS loops to be OPERABLE and in operation to ensure that the accident analyses limits are met. For those conditions when the Rod Control System is not capable of rod withdrawal, two RCS loops are required to be OPERABLE, but only one RCS loop is required to be in operation to be consistent with MODE 3 accident analyses.

M8 The CTS is revised to adopt ISTS LCO 3.4.5; ACTION D; and SRs 3.4.5.1, 3.4.5.2, 3.4.5.3, 3.4.5.4, 3.4.5.5, 3.4.5.6, and 3.4.5.7 to require that decay heat removal capability be available and in operation when the plant is in MODE 3. LCO 3.4.5 requires that at least two RCS loops be OPERABLE. The required number of RCS loops in operation ensures that the Safety Limit criteria will be met for all of the postulated accidents. With the Rod Control System not capable of control rod withdrawal, the reactor trip breakers open, or the lift disconnect switches for all control rods not fully withdrawn open, the possibility of an inadvertent control rod withdrawal transient is precluded. Alternately, with SHUTDOWN MARGIN (SDM) within the MODE 3 limit for one RCS loop in operation, a return to criticality in the event of simultaneous withdrawal of the two most reactive control rod banks as assumed in the inadvertent control rod transient analysis is precluded. Therefore, under any of these conditions only one RCS loop in operation is necessary to ensure removal of decay heat from the core and homogenous boron concentration throughout the RCS. An additional RCS loop is required to be OPERABLE to ensure that safety analyses limits are met. Action D specifies that with the Required Action and associated Completion Time of Condition C not met, two required RCS loops inoperable, or no RCS loops in operation (except during the conditions permitted by the Note in the LCO section), all CRDMs must be de-energized by opening the RTBs or de-energizing the MG sets. All operations involving a reduction of RCS boron concentration must be suspended, and action to restore one of the RCS loops to OPERABLE status and operation must be initiated. Boron dilution requires forced circulation for proper mixing, and opening the RTBs or de-energizing the MG sets removes the possibility of an inadvertent rod withdrawal. The immediate Completion Time reflects the importance of maintaining operation for heat removal. SR 3.4.5.1 requires verification every

12 hours that the required loops are in operation. The Frequency of 12 hours is sufficient considering other indications and alarms available to the operator in the control room to monitor RCS loop performance. SR 3.4.5.2 requires verification of SG OPERABILITY. SG OPERABILITY is verified by ensuring that the secondary side narrow range water level is ≥ 16% for required RCS loops. If the SG secondary side narrow range water level is < 16%, the tubes may become uncovered and the associated loop may not be capable of providing the heat sink for removal of the decay heat. The 12 hour Frequency is considered adequate in view of other indications available in the control room to alert the operator to a loss of SG level. SR 3.4.5.3, SR 3.4.5.4, SR 3.4.5.5, and SR 3.4.5.6 require periodic verification of the alternate administrative controls established by LCO 3.4.5 items a, b, c, or d. This prudent to preclude the possibility of a power excursion associated with an inadvertent control rod withdrawal when only one RCS loop is in operation. The 12 hour Frequency for SR 3.4.5.3, SR 3.4.5.4, and SR 3.4.5.5 is acceptable since the status of the affected components is not likely to change without the operator being aware of it. The 24 hour Frequency for SR 3.4.5.6 is based on the generally slow change in the required boron concentration and the low probability of an accident occurring without the required SDM. SR 3.4.5.7 requires verification that the required RCPs are OPERABLE to ensure that safety analyses limits are met. The requirement also ensures that an additional RCP can be placed in operation, if needed, to maintain decay heat removal and reactor coolant circulation. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M9 CTS Specification 3.1.1.1.c requires that at least one reactor coolant pump or RHR pump be in operation "when T_{avg} > 200°F and reactor power is less than 2% of rated thermal power." ITS Specification 3.4.6 has Applicability only in MODE 4. The definition of MODE 4 is 350°F > T_{avg} > 200°F, and K_{eff} < 0.99. In MODE 4, this LCO ensures forced circulation of the reactor coolant to remove decay heat from the core and to provide proper boron mixing. One loop or train of either RCS or RHR provides sufficient circulation for these purposes. However, two circuits consisting of any combination of RCS loops and RHR trains are required to be OPERABLE to meet single failure considerations. Since the ITS requires one or two RCS loops operating in MODE 3, and 3 RCS loops operating in MODE 2, this change imposes more restrictive requirements and has no adverse impact on safety.

M10 CTS Specification 3.1.1.1.c requires that at least one reactor coolant pump or RHR pump be in operation. ITS Specification 3.4.6 requires that two loops or trains of any combination of RCS or RHR be OPERABLE, and one loop or train be in operation. In MODE 4, RCS circulation is considered in the determination of the time available for mitigation of the accidental boron dilution event. The RCS loops and RHR trains provide this circulation. The purpose of this LCO is to require that at

least two loops or trains be OPERABLE in MODE 4 and that one of these loops or trains be in operation. This change imposes more restrictive requirements, and has no adverse impact on safety.

M11 The CTS is revised to adopt ISTS Specification 3.4.6 ACTIONS A and B; and SRs 3.4.6.1, 3.4.6.2, and 3.4.6.3 to require that decay heat removal capability be available in MODE 4. If one required RCS loop or RHR train is inoperable and only one required RCS loop remains OPERABLE, the intended redundancy for heat removal is lost. Action A requires action must be initiated to restore a second RCS loop or RHR train to OPERABLE status. The immediate Completion Time reflects the importance of maintaining the availability of two paths for heat removal. Action B requires that if one required RCS loop or RHR train is inoperable and only one required RHR train is OPERABLE and in operation, an inoperable RCS loop or RHR train must be restored to OPERABLE status to provide a redundant means for decay heat removal. If the parameters that are outside the limits cannot be restored, the unit must be brought to MODE 5 within 24 hours. Bringing the unit to MODE 5 is a conservative action with regard to decay heat removal. With only one RHR train OPERABLE, redundancy for decay heat removal is lost and, in the event of a loss of the remaining RHR train, it would be safer to initiate that loss from MODE 5 (≤ 200°F) rather than MODE 4 (200 to 350°F). The Completion Time of 24 hours is a reasonable time, based on operating experience, to reach MODE 5 from MODE 4 in an orderly manner and without challenging plant systems. SR 3.4.6.1 requires verification every 12 hours that one RCS loop or RHR train is in operation. Verification includes flow rate, temperature, or pump status monitoring, which help ensure that forced flow is providing heat removal. The Frequency of 12 hours is sufficient considering other indications and alarms available to the operator in the control room to monitor RCS loop and RHR train performance. SR 3.4.6.2 requires verification of SG OPERABILITY. SG OPERABILITY is verified by ensuring that the secondary side narrow range water level is ≥ 16%. If the SG secondary side narrow range water level is < 16%, the tubes may become uncovered and the associated loop may not be capable of providing the heat sink necessary for removal of decay heat. The 12 hour Frequency is considered adequate in view of other indications available in the control room to alert the operator to the loss of SG level. SR 3.4.6.3 requires verification that the required pump is OPERABLE to ensure that an additional RCS or RHR pump can be placed in operation, if needed, to maintain decay heat removal and reactor coolant circulation. The Frequency of 7 days is considered reasonable in view of other administrative controls available and has been shown to be acceptable by operating experience.

Additionally, CTS Required Action 3.1.1.2.c.1 is revised In ITS LCO 3.4.6 Required Action C.1 to reduce the Completion Time from one hour to Immediately. With no loops or trains operable or in operation, except during conditions allowed by Note 1 to the LCO, action must be taken to suspend all operations involving reduction of boron concentration

immediately. The immediate Completion Time reflects the importance of maintaining the availability of two paths for heat removal.

Additionally, CTS Required Action 3.1.1.2.c.2 is revised In ITS LCO 3.4.6 Required Action C.2 to reduce the Completion Time from one hour to Immediately. With no loops or trains operable or in operation, except during conditions allowed by Note 1 to the LCO, action must be taken to restore one RCS Loop or RHR train to OPERABLE status and in operation immediately. The immediate Completion Time reflects the importance of maintaining the availability of two paths for heat removal.

Since these changes impose new requirements, they are more restrictive and have no adverse impact on safety.

M12 The CTS is revised to adopt ISTS Specification 3.4.7 LCO Note 4, SR 3.4.7.1, SR 3.4.7.2, and SR 3.4.7.3, to require that decay heat removal capability be available in MODE 5. LCO Note 4 provides for an orderly transition from MODE 5 to MODE 4 during a planned heatup by permitting removal of RHR trains from operation when at least one RCS loop is in operation. This Note provides for the transition to MODE 4 where an RCS loop is permitted to be in operation and replaces the RCS circulation function provided by the RHR trains. SR 3.4.7.1 requires verification every 12 hours that the required train is in operation. Verification includes flow rate, temperature, or pump status monitoring, which help ensure that forced flow is providing heat removal. The Frequency of 12 hours is sufficient considering other indications and alarms available to the operator in the control room to monitor RHR train performance. SR 3.4.7.2 requires verifying that at least one SG is OPERABLE by ensuring its secondary side narrow range water level is ≥ 16% and the RCS is not vented ensures an alternate decay heat removal method in the event that the second RHR train is not OPERABLE. The 12 hour Frequency is considered adequate in view of other indications available in the control room to alert the operator to the loss of SG level or the RCS pressure boundary. SR 3.4.7.3 requires verification that a second RHR pump is OPERABLE ensures that an additional pump can be placed in operation, if needed, to maintain decay heat removal and reactor coolant circulation. Verification is performed by verifying proper breaker alignment and power available to the RHR pump. If secondary side water level is ≥ 16% in at least one SG and the RCS is not vented, this Surveillance is not needed. The Frequency of 7 days is considered reasonable in view of other administrative controls available and has been shown to be acceptable by operating experience. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M13 Not Used.

M14 CTS Specification 3.3.1.4.b requires that, if both RHR loops become inoperable, at least one loop be restored to OPERABLE status as soon as

possible. ITS Specifications 3.4.7 and 3.4.8 require, if both RHR trains become inoperable or no RHR train is in operation, except during conditions permitted by Note 1, that all operations involving a reduction in RCS boron concentration be suspended, and that actions be initiated immediately to restore one RHR train to OPERABLE status and operation. To prevent boron dilution, forced circulation is required to provide proper mixing and preserve the margin to criticality in this type of operation. The immediate Completion Times reflect the importance of maintaining operation for heat removal. This change imposes more restrictive requirements, and has no adverse impact on safety.

M15 CTS Specification 3.3.1.4 requires that both RHR loops be OPERABLE. ITS Specifications 3.4.7 and 3.4.8 require that both RHR trains be OPERABLE, and one RHR train be in operation. In MODE 5, RCS circulation is considered in the determination of the time available for mitigation of the accidental boron dilution event. The operating RHR train provide this circulation. This change imposes additional requirements, and is therefore more restrictive and has no adverse impact on safety.

M16 The CTS is revised to adopt ISTS Surveillance Requirements, SR 3.4.8.1 and SR 3.4.8.2, to require that decay heat removal capability be available in MODE 5. SR 3.4.8.1 requires verification every 12 hours that one train is in operation. The Frequency of 12 hours is sufficient considering other indications and alarms available to the operator in the control room to monitor RHR train performance. SR 3.4.8.2 requires verification that the required number of pumps are OPERABLE ensures that additional pumps can be placed in operation, if needed, to maintain decay heat removal and reactor coolant circulation. The Frequency of 7 days is considered reasonable in view of other administrative controls available and has been shown to be acceptable by operating experience. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M17 CTS Specification 3.1.3.4 requires that the reactor be maintained subcritical by at least 1% until normal water level is established in the pressurizer. This Applicability is, in effect, MODES 1 and 2. ITS Specification 3.4.9 requires that the pressurizer be OPERABLE with a specified water level, and is Applicable in MODES 1, 2, and 3. The purpose is to prevent solid water RCS operation during heatup and cooldown to avoid rapid pressure rises caused by normal operational perturbation, such as reactor coolant pump startup. In MODES 1, 2, and 3, there is need to maintain the availability of pressurizer heaters, capable of being powered from an emergency power supply. In the event of a loss of offsite power, the initial conditions of these MODES give the greatest demand for maintaining the RCS in a hot pressurized condition with loop subcooling for an extended period. Since this change imposes a broader Applicability, it is more restrictive and has no adverse impact on safety.

M18 CTS Specification 3.1.1.3.d requires that the unit be shut down and cooled down to ≤350°F in the event that 125 kW of pressurizer heaters, capable of being powered from an emergency power source, cannot be provided within 72 hours. No time limits are specified to complete the shutdown and subsequent cooldown. ITS Specification 3.4.9 requires that, under these conditions, the unit be in MODE 3 in 6 hours and in MODE 4 in 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. This change imposes more restrictive requirements, and has no adverse impact on safety.

M19 CTS 3.1.3.4 is revised to adopt ISTS Specification 3.4.9 ACTION A; and SRs 3.4.9.1 and 3.4.9.2 to require that pressurizer be OPERABLE. The CTS has no explicit actions for non-compliance with the LCO. As a result, CTS 3.0 applies, which has a requirement to be in a non-applicable MODE in 30 hours. ISTS 3.4.9 Action A requires this to be accomplished within 12 hours. This takes the unit out of the applicable MODES and restores the unit to operation within the bounds of the safety analyses. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. SR 3.4.9.1 requires that during steady state operation, pressurizer level is maintained below the nominal upper limit to provide a minimum space for a steam bubble. The 12 hour interval has been shown by operating practice to be sufficient to regularly assess level for any deviation and verify that operation is within safety analyses assumptions. SR 3.4.9.2 requires verification that the power supplies are capable of producing the minimum power and the associated pressurizer heaters are verified to be at their design rating. The Frequency of 18 months is considered adequate to detect heater degradation and has been shown by operating experience to be acceptable. Since these changes impose new or more limiting requirements, it is more restrictive and is consistent with NUREG-1431.

M20 CTS 3.1.1.3 requires all three pressurizer code safety valves to be OPERABLE when the RCS temperature is above 350 degrees F but does not provide any actions if this LCO is not satisfied. This means that CTS LCO 3.0 applies and doesn't require the plant to be in a non-applicable MODE for 30 hours. The CTS is revised to adopt ISTS Specification 3.4.10 Applicability NOTE; and ACTIONS A and B to require the pressurizer code safety valves to be OPERABLE during MODES 1, 2, and 3 and requires the plant to be placed in a non-applicable MODE within 12 hours and 15 minutes. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. Since this change imposes more limiting requirements, it is more restrictive and is consistent with NUREG-1431.

M21 CTS Specifications 3.1.1.5.a.2, 3.1.1.5.b.3, 3.1.1.5.c.2, and 3.1.1.5.d.4 require that, under certain conditions related to inoperable PORVs, the unit be placed in HOT SHUTDOWN within 12 hours and cooled down to T_{avg} < 350°F within the following 12 hours. ITS Specification 3.4.11 requires that the unit be in MODE 3 within 6 hours, and MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. This change imposes more restrictive requirements, and has no adverse impact on safety.

M22 CTS Specification 3.1.1.5.a.2, Footnote 2, which permits power operation to continue under certain conditions with a PORV block valve closed, is not retained in the ITS. CTS Footnote 2 applies to RCS leakage that has been detected through the PORV that does not exceed the CTS requirements of Specification 3.1.5.2. Since the ITS does not allow closure of the PORV block valve except in accordance with Required Actions A.1 and E.1, the elimination of the requirements of CTS 3.1.1.5 note 2 is more restrictive, and has no adverse impact on safety.

M23 CTS Specification 3.1.1.5.f, which allows that PORV valve trains need not be declared inoperable during surveillance testing of the PORVs and their associated block valves, is not retained in the ITS. During the performance of surveillances that result in the inoperability of the PORVs or their associated block valves, ITS 3.4.11 requires appropriate Conditions to be entered and Required Actions to be taken. This change represents an additional restriction on plant operation necessary to ensure, during the performance of surveillances, that an unrecognized loss of the PORV relief function does not occur and that the duration of any PORV or associated block valve inoperabilities are limited to those approved Completion Times associated with ITS 3.4.11 ACTIONS. This change imposes more restrictive requirements, and has no adverse impact on safety.

M24 CTS Specifications 3.1.2.1.d.1.B, 3.1.2.1.d.2.B and 3.1.2.1.d.3 require that, under certain conditions, the RCS be depressurized and vented to the containment within 12 hours. ITS Specification 3.4.12 requires that the depressurization and venting actions be completed within 8 hours. This action is needed to protect the RCPB from a low temperature overpressure event and a possible brittle failure of the reactor vessel. The Completion Time considers the time required to place the plant in this Condition and the relatively low probability of an overpressure event during this time period due to increased operator awareness of administrative control requirements. This change imposes more restrictive requirements, and has no adverse impact on safety.

M25 The CTS is revised to adopt LCO 3.4.12.b (accumulator isolation) and 3.4.12.c (restrictions on the number of operating RCPs); ITS Specification 3.4.12 Applicability Note; ACTIONS A, B, C, D, E, F, and I

(second and third conditions); and SRs 3.4.12.1 and Note, 3.4.12.2 and Note, 3.4.12.3, 3.4.12.4 and Note, and 3.4.12.5 and Note to require that the RCS be adequately protected from excessive mass input capability during low temperature operation. LCO 3.4.12.b and the Applicability Note requires the accumulators to be isolated when accumulator pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature. LCO 3.4.12.c requires limiting the number of RCPs operating when an SI pump is capable of injection. These restrictions are necessary to limit the coolant input capability consistent with assumptions of the analysis. With two or more SI pumps capable of injection when RCS cold leg temperature ≥ 175°F, Action A requires immediately initiating action to limit the number of SI pumps capable of injection. With one or more SI pumps capable of injection when RCS cold leg temperature ≤ 175°F, Action B requires immediately initiating action to disable any SI pump capable of injection. With two or more charging pumps and an SI pump capable of injection, Action C requires immediately initiating action to limit the number of charging pumps capable of injection or disabling the SI pump. With three RCPs operating when RCS cold leg temperature ≥ 175°F, and an SI pump capable of injection, Action D requires initiating action to secure an RCP or disable any SI pumps. To immediately initiate action to restore restricted coolant input capability to the RCS or secure an RCP reflects the urgency of removing the RCS from this condition. With an accumulator not isolated when required, Action E requires isolation of the accumulator within one hour. If isolation is needed and cannot be accomplished in 1 hour, Required Action F.1 and Required Action F.2 provide two options, either of which must be performed in the next 12 hours. By increasing the RCS temperature to > 350°F, an accumulator pressure of 600 psig cannot exceed the LTOP limits if the accumulators are fully injected. Depressurizing the accumulators below the LTOP limit also gives this protection. The Completion Times are based on operating experience that these activities can be accomplished in these time periods consideration that an event requiring LTOP is not likely in the allowed times.

Action I requires the RCS be depressurized and a vent must be established within 8 hours when:

a. Both required PORVs are inoperable; or

b. A Required Action and associated Completion Time of Condition A, B, C, D, F, G, or H is not met; or

c. The LTOP System is inoperable for any reason other than Condition A, B, C, D, E, F, G, or H.

The vent must be sized ≥ 3 square inches to ensure that the flow capacity is greater than that required for the worst case mass input transient reasonable during the applicable MODES. This action is needed

to protect the RCPB from a low temperature overpressure event and a possible brittle failure of the reactor vessel. The Completion Time considers the time required to place the plant in this Condition and the relatively low probability of an overpressure event during this time period due to increased operator awareness of administrative control requirements.

The SRs require verification that the LCO requirements are met. The Frequency of 12 hours is sufficient, considering other indications and alarms available to the operator in the control room, to verify the required status of the equipment.

Since this change imposes new requirements, it is more restrictive, and has no adverse impact on safety.

M26 CTS Specification 3.3.1.3 requires that the SI pump breakers be racked out when RCS temperature is below 350°F and the system is not vented to containment atmosphere. The provisional statement regarding venting the system to containment atmosphere is not retained in the ITS. In addition, consistent with the LTOP analysis assumption a requirement is added in ITS LCO 3.4.12.c, for only one charging pump to be capable of injection. These restrictions are necessary to limit the coolant input capability consistent with assumptions of the analysis. These changes are therefore more restrictive, and have no adverse impact on safety.

M27 CTS Specifications 3.1.5.1, 3.1.5.2, and 3.1.5.3, which provide requirements for unidentified, identified, and primary to secondary RCS operational leakage, are revised to adopt the ISTS Specification 3.4.13 Completion Times associated with the Required Actions. The four hour Completion Time for Action A allows time to verify leakage rates and either identify unidentified LEAKAGE or reduce LEAKAGE to within limits before the reactor must be shut down. The Action B Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. These Completion Times are either more restrictive than those in the CTS, or are added as new requirements where no time limits exist. This change therefore imposes more restrictive requirements, and has no adverse impact on safety.

M28 The CTS is revised to adopt LCO 3.4.13.a to require that reactor coolant pressure boundary leakage not be permitted. No pressure boundary LEAKAGE is allowed, being indicative of material deterioration. LEAKAGE of this type is unacceptable as the leak itself could cause further deterioration, resulting in higher LEAKAGE Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M29 The CTS is revised to adopt ISTS Specification 3.4.14 ACTIONS Notes, ACTION B and SR 3.4.14.2 to require that intersystem leakage be

minimized and not go undetected. WASH-1400 (NUREG-75/014), Appendix V, October 1975 identified potential intersystem LOCAs as a significant contributor to the risk of core melt. The dominant accident sequence in the intersystem LOCA category is the failure of the low pressure portion of the RHR System outside of containment. The accident is the result of a postulated failure of the PIVs, which are part of the RCPB, and the subsequent pressurization of the RHR System downstream of the PIVs from the RCS. Because the low pressure portion of the RHR System is designed for 600 psig, overpressurization failure of the RHR low pressure line would result in a LOCA outside containment and subsequent risk of core melt. Since this change imposes new requirements, it is restrictive and has no adverse impact on safety.

M30 The CTS is revised in ITS Specification 3.4.14 to require that leakage testing be performed within 24 hours following PIV actuation, or flow through the valve. A corresponding Note (Note 3 to SR 3.4.14.1) is also added to not require testing of actuated RCS PIVs more than once if a repetitive testing loop cannot be avoided. Testing must be performed once after the valve has been opened by flow or exercised to ensure tight reseating. PIVs disturbed in the performance of this Surveillance should also be tested unless an infinite testing loop cannot practically be avoided. Testing must be performed within 24 hours. The 24 hour time limit is a reasonable and practical time limit for performing this test after opening or reseating a valve. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M31 The CTS is revised to adopt ISTS LCO 3.4.15; ACTIONS A, B.1.1, B.1.2, B.2.1, B.2.2, C, D, E, and F; and SR 3.4.15.5 to require that leakage from the RCS be minimized and not go undetected. One method of protecting against large RCS leakage derives from the ability of instruments to rapidly detect extremely small leaks. This LCO requires instruments of diverse monitoring principles to be OPERABLE to provide a high degree of confidence that extremely small leaks are detected in time to allow actions to place the plant in a safe condition, when RCS LEAKAGE indicates possible RCPB degradation. The safety significance of RCS LEAKAGE varies widely depending on its source, rate, and duration. Therefore, detecting and monitoring RCS LEAKAGE into the containment area is necessary. Quickly separating the identified LEAKAGE from the unidentified LEAKAGE provides quantitative information to the operators, allowing them to take corrective action should a leakage occur detrimental to the safety of the unit and the public. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M32 The CTS is revised to adopt ISTS SRs 3.4.15.1, 3.4.15.2, and 3.4.15.4. These surveillances are added to verify OPERABILITY of the containment atmosphere radioactivity monitor for the RCS leakage detection function. SR 3.4.15.1 requires the performance of a CHANNEL CHECK of the required

containment atmosphere radioactivity monitor. The check gives reasonable confidence that the channel is operating properly. The Frequency of 12 hours is based on instrument reliability and is reasonable for detecting off normal conditions. SR 3.4.15.2 requires the performance of a COT on the required containment atmosphere radioactivity monitor. The test ensures that the monitor can perform its function in the desired manner. The test verifies the alarm setpoint and relative accuracy of the instrument string. The Frequency of 92 days considers instrument reliability, and operating experience has shown that it is proper for detecting degradation. SR 3.4.15.4 requires the performance of a CHANNEL CALIBRATION for each of the containment atmosphere radiation monitor instrumentation channel. The calibration verifies the accuracy of the instrument string. The Frequency of 18 months is a typical refueling cycle and considers channel reliability. Again, operating experience has proven that this Frequency is acceptable. This change constitutes a more restrictive change necessary to help ensure these instruments are maintained OPERABLE.

M33 Not Used.

M34 CTS Specification 3.1.4 requires, when the specific activity of the reactor coolant exceeds 1.0 μCi/gram DOSE EQUIVALENT I-131 or 100/Ē μCi/gram, that certain sampling and analysis activities be performed until the specific activity is restored to within limits. ITS Specification 3.4.16 requires these activities be performed only when the reactor coolant specific activity exceeds 1.0 μCi/gram DOSE EQUIVALENT I-131. With the gross specific activity in excess of the allowed limit, the unit must be placed in a MODE in which the requirement does not apply. The change within 6 hours to MODE 3 and RCS average temperature < 500°F lowers the saturation pressure of the reactor coolant below the setpoints of the main steam safety valves and prevents venting the SG to the environment in an SGTR event. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 below 500°F from full power conditions in an orderly manner and without challenging plant systems. This change therefore imposes more restrictive requirements, and has no adverse impact on safety.

M35 CTS Specification 3.1.2.1.d, which requires that the LTOP setpoint be less than or equal to 420 psig, is revised in LCO 3.4.12.a.1 to require the setpoint to be ≤ 400 psig. The lower setpoint is necessary to support the overpressure transient analysis that permits utilization of a single OPERABLE SI train in MODE 4. This change therefore imposes more restrictive requirements, and has no adverse impact on safety.

M36 CTS Specification 3.1.1.2 requires two steam generators to be operable whenever the average primary coolant temperature is above 350°F. ITS Specification 3.4.5 requires two RCS loops to be OPERABLE in MODE 3.

The ITS Bases for Specification 3.4.5 describes that an OPERABLE RCS loop consists of one OPERABLE reactor coolant pump and one OPERABLE steam generator in accordance with the Steam Generator Tube Surveillance Program, which has a water level within required limits. This LCO ensures forced circulation of the reactor coolant to remove decay heat from the core and to provide proper boron mixing. As a result, the ITS Specification 3.4.5 requirement constitutes an additional restriction on plant operation necessary to help ensure decay heat removal capability is maintained.

M37 CTS Specification 3.1.2.1.d requires the overpressure protection system to be OPERABLE whenever RCS temperature is less than or equal to 350°F and the reactor vessel head is on the reactor vessel and the RCS is not vented. Implicit in CTS Specification 3.1.2.1.d is the allowance that adequate overpressure protection is provided by removal of the reactor vessel head or venting the RCS. ITS Specification 3.4.12.a.2 is added to provide the details of what constitutes acceptable low temperature overpressure protection (the RCS depressurized and an RCS vent of $\geq$ 3 square inches). Adding these details into the Technical Specifications represents an additional restriction on unit operation and is necessary to ensure protection of the reactor coolant pressure boundary from a low temperature overpressure event.

M38 The CTS is revised by adopting ISTS Specification 3.4.5 LCO "Note.," Specification 3.4.6 LCO "Note 1," and Specification 3.4.7 LCO "Note 1." These Notes permit all RCPs or RHR pumps to be de-energized for up to 1 hour in any 8 hour period, to permit tests that are designed to validate various accident analyses values. CTS Specification 3.1.1.1.a currently allows operation with less than two RCPs in operation when the conditions set forth in CTS Specifications 3.1.1.1.a.1, 3.1.1.1.a.2, and 3.1.1.1.a.3 are met. The CTS has no time restriction for operation in in this condition. Because these notes impose a time restriction on operation with one or no RCPs in operation, this change is a more restrictive change. This change is acceptable, however, because unlimited operation with no RCPs in operation could permit boron stratification. In addition, the Note may only be used if no operations which could cause a reduction of RCS boron concentration are being performed, core outlet temperature reduction of RCS boron concentration are being performed, core outlet temperature is maintained at least 10 degrees F below saturation temperature, and measures are taken to preclude a power excursion resulting from an inadvertent control rod withdrawal event (for Specifications 3.4.5 and 3.4.6). Industry operating experience has also shown that boron stratification is not a problem during this short period with no forced flow.

M39 CTS Specification 3.3.1.4.a, which requires the inoperable RHR loop to be restored within 14 days if one RHR loop is inoperable, is revised in ITS LCO 3.4.7 Required Actions A.1 and A.2 to require a Completion Time of immediately. This change imposes a more restrictive completion time.

If one RHR train is inoperable and the required SG has secondary side water level < 16% or the RCS is vented, redundancy for heat removal is lost. Action must be initiated immediately to restore a second RHR train to OPERABLE status or to restore the required SG secondary side water level and the RCS pressure boundary. Either Required Action A.1 or Required Action A.2 will restore redundant heat removal paths. The immediate Completion Time reflects the importance of maintaining the availability of two paths for heat removal. Therefore, this change has no adverse impact on safety.

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA1 CTS Specifications 3.1.2.1.a, 3.1.2.1.b, 3.1.2.1.c, and 3.1.2.4 provide limitations on use of, and instructions for updating the pressure and temperature (P/T) limit curves (CTS Figures 3.1-1 and 3.1-2). This detail is not retained in the ITS and is relocated to licensee controlled documents.

The details associated with the involved Specifications are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains the RCS heatup and cooldown rate requirements. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA2 CTS Specification 3.1.1.1.a.1 requires that a shutdown margin of at least 4% $\Delta k/k$ be maintained. This detail is not retained in the ITS and is relocated to the Core Operating Limits Report (COLR). The COLR includes the methodology for SDM limit determinations as identified in ITS Chapter 5.0.

The details associated with the involved Specifications are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains the requirement that the shutdown margin be maintained within the limits specified in the COLR. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA3 CTS Specification 3.1.1.3.a requires that one pressurizer safety valve be OPERABLE whenever the reactor head is on the vessel, and the RCS is not open for maintenance. This detail is not retained in the ITS and is relocated to licensee controlled documents.

The details associated with the involved Specifications are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains Low Temperature Overpressure Protection (LTOP) requirements. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall

operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA4 CTS Specifications 4.2.4.1 and 4.2.4.3 require performance of a PORV CHANNEL CALIBRATION and isolation of normal air and nitrogen supplies to the PORV accumulators when conducting the 18 month accumulator test, respectively. This detail is not retained in the ITS and is relocated to licensee controlled documents.

The details associated with the involved Specifications are not required to be in the ITS to provide adequate protection of the public health and safety, since the accident analysis credits the PORVs only with manual operator action, and the ITS still retains PORV OPERABILITY requirements. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA5 CTS Specifications 3.1.5.4.a, 3.1.5.4.b, Table 3.1-1; and Table 4.1-3 (Item 17 and Footnotes a, b, c), provide a listing of PIVs and programmatic guidance related to PIV leakage testing. This detail is not retained in the ITS and is relocated to licensee controlled documents.

The details associated with the involved Specifications are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains PIV OPERABILITY requirements. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA6 CTS Table 4.1-2, Items 1 and 2, and Notes 1 and 2, provide frequency requirements for certain reactor coolant sample analyses. This detail is not retained in the ITS and is relocated to licensee controlled documents.

The details associated with the involved Specifications are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains RCS specific activity limitations. This approach provides an effective level of regulatory control and

provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA7 CTS Table 4.1-2, Item 4 provides sampling requirements for the Boric Acid Tank. The requirements for the Boric Acid tanks have been relocated to a licensee controlled document by a separate license amendment request (CP&L to NRC dated 11/27/95). The sampling requirements for these tanks were inadvertently not included in that request. This detail is not retained in the ITS and is relocated to licensee controlled documents.

The details associated with the involved Specifications are not required to be in the ITS to provide adequate protection of the public health and safety, since the requirements associated with the tanks have been relocated by a separate amendment request. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA8 CTS Table 4.1-3, Item 14 requires testing of the filters associated with the RHR compartment fans. The CTS LCO requirement for these filters does not exist, nor are these filters credited in any an accident analysis. These test requirements are not retained in the ITS and are relocated to licensee controlled documents.

These test specifications are not required to be in the ITS to provide adequate protection of the public health and safety, since the requirements filters themselves are not required. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these surveillance requirements is acceptable.

LA9 CTS Table 4.1-2, Item 10 requires sampling of the steam generators for primary to secondary leakage five days per week with a maximum interval between tests of 3 days. This test requirement is not retained in the ITS and is relocated to licensee controlled documents.

The test specification is not required to be in the ITS to provide adequate protection of the public health and safety, since the LCO requirement for primary to secondary leakage is retained in ITS LCO 3.4.13, and the surveillance requirement SR 3.4.13.1 includes primary to secondary leakage among all pathways to assess when performing the required RCS inventory balance. The bases to ITS SR 3.4.13.1 states, "Primary to secondary LEAKAGE is also measured by performance of an RCS water inventory balance in conjunction with effluent monitoring within the secondary steam and feedwater systems." Since the Frequency for SR 3.4.13.1 is 72 hours and the maximum allowable time between tests in the CTS is 3 days, the Frequency requirement for performing the test five days per week is a detail that is also relocated to licensee controlled documents.

This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these surveillance requirements is acceptable.

LA10 CTS Table 4.1-2, Item 9, Note 3 requires sampling of the stack at a frequency of daily when iodine or particulate radioactivity levels exceed 10% of the limit in CTS Specification 3.9.2.1. This test requirement is not retained in the ITS and is relocated to the Offsite Dose Calculation Manual.

The test specification frequency is not required to be in the ITS to provide adequate protection of the public health and safety, since the sampling requirement to which the note applies duplicates specifications that are not retained in the ITS because they have been reviewed against, and determined not to satisfy, the screening criteria for Technical Specifications provided in 10 CFR 50.36.

This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these surveillance requirements is acceptable.

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 The CTS is revised by adopting ISTS Specification 3.4.5 LCO "Note," Specification 3.4.6 LCO "Note 1," and Specification 3.4.7 LCO "Note 1." These Notes permit all RCPs or RHR pumps to be de-energized for up to 1 hour in any 8 hour period, to permit tests that are designed to validate various accident analyses values. The allowance for neither RCPs nor RHR pumps to be in operation is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because such an operation would be performed as part of a special test, and be controlled under close scrutiny by shift operating personnel. In addition, the allowances of the Note may only be used if no operations which could cause a reduction of RCS boron concentration are being performed, core outlet temperature reduction of RCS boron concentration are being performed, core outlet temperature is maintained at least 10 degrees F below saturation temperature, and measures are taken to preclude a power excursion resulting from an inadvertent control rod withdrawal event (for Specification 3.4.5 and 3.4.6). Industry operating experience has also shown that boron stratification is not a problem during this short period with no forced flow. Natural circulation provides adequate heat removal in this condition during the limited time period in the Note. The natural circulation condition is bounded by the loss of forced reactor coolant flow event described in UFSAR Section 15.3.1 because the event in UFSAR Section 15.3.1 occurs in MODE 1, where decay heat is higher than in MODEs 3, 4, and 5. This change is consistent with NUREG-1431.

L2 CTS Specification 3.1.1.1.c.1 requires under certain conditions, that an RCS boron concentration be established that is equal to or greater than that needed to maintain a shutdown margin of 1% $\Delta k/k$ at 200°F. ITS Specification 3.4.6 requires instead, that all operations involving a reduction in RCS boron concentration be suspended. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, since in addition to this action being performed in conjunction with restoration of a required reactor coolant pump or RHR pump to OPERABLE status and operation, the shutdown margin will have already been established for MODE 4 operation in accordance with the limits specified in the COLR. Suspending all operations involving a reduction in RCS boron concentration provides assurance that the shutdown margin will be maintained. This change is consistent with NUREG-1431.

L3 CTS Specification 3.1.1.1.c.2 requires that, if a reactor coolant pump or RHR pump cannot be restored to operation within 1 hour, a Special Report be prepared and submitted to the NRC within 30 days. This requirement is not retained in the ITS. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, since reporting requirements are covered in 10 CFR 50.73, and submittal of an after-the-fact report 30 days later has no impact on the safe operation of the unit. This change is consistent with NUREG-1431.

L4 CTS Specification 3.3.1.4.b requires that, if both RHR loops become inoperable, all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere be closed prior to the RCS average temperature exceeding 200°F. This requirement is not retained in the ITS. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, since ITS Specifications 3.4.7 and 3.4.8 require in this condition, that all operations involving a reduction in boron concentration be suspended, and that action be initiated immediately to restore one RHR train to OPERABLE status and operation. In this condition, both decay heat removal is lost and proper boron mixing in the RCS is lost. The Bases to ITS LCO 3.4.7 and 3.4.8 Condition B adequately address the requirements for mixing in the RCS. The site Shutdown Risk requirements specifically address decay heat removal concerns while shutdown and provide appropriate safety considerations in removing RHR trains from service. If these commitments were not met and the plant were in ITS LCO 3.4.7 and 3.4.8 Condition B, a MODE change to MODE 4 may be eventually forced due to the loss of decay heat removal. Since ITS requires containment integrity to be met prior to entry into MODE 4, the CTS requirement effectively imposes no restriction beyond that which would be required for a change from MODE 5 to MODE 4. Therefore the CTS requirement to close all containment penetrations providing direct access from the containment atmosphere prior to the RCS exceeding 200°F is not needed to protect the public health and safety. This change is consistent with NUREG-1431.

L5 The CTS is revised to adopt ISTS Specification 3.4.7 LCO "Note 2," and Specification 3.4.8 LCO "Notes 1 and 2." The Note 1 permits all RHR pumps to be de-energized for up to 15 minutes when switching from one train to another. Note 2 allows one RHR train to be inoperable and deenergized (for Specification 3.4.7 Note 2) for a period of up to 2 hours. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because the circumstances for stopping both RHR pumps are limited to situations when the outage time is short and core outlet temperature is maintained > 10°F below saturation temperature. Boron dilution and draining operations are prohibited when RHR forced flow is stopped thus reducing risk of boron stratification. An RHR train is only permitted to be inoperable for a period of 2 hours provided the other train is OPERABLE. This permits periodic surveillance tests to be performed on the inoperable train during the only time when these tests are safe and possible. This change is consistent with NUREG-1431.

L6 CTS Specification 3.3.1.4 requires that both RHR loops be OPERABLE in the cold shutdown condition. ITS Specification 3.4.7 requires, when in MODE 5 with the RCS loops filled, that either both RHR trains be OPERABLE, or one RHR train and one SG be OPERABLE. A SG is considered OPERABLE as a redundant heat removal source if RCS and SG conditions are such that natural circulation can be achieved. Actions to ensure these

conditions are present, prior to assuming the SG is capable of replacing an RHR loop, are contained in the normal operating procedures and are not provided in the specification. This change provides more flexibility in operation, and is therefore less restrictive. This change is acceptable, however, because with either choice, redundant decay heat removal systems are OPERABLE and available for use. In MODE 5 with the RCS loops filled, the primary function of the reactor coolant is the removal of decay heat and transfer this heat either to the steam generator (SG) secondary side coolant or the component cooling water via the residual heat removal (RHR) heat exchangers. While the principal means for decay heat removal is via the RHR System, the SGs are specified as a backup means for redundancy when the RCS is not vented. Even though the SGs cannot produce steam in this MODE, they are capable of being a heat sink due to their large contained volume of secondary water. As long as the SG secondary side water is at a lower temperature than the reactor coolant, heat transfer will occur. The rate of heat transfer is directly proportional to the temperature difference. This change is consistent with NUREG-1431.

L7 CTS Specification 3.1.1.3.c.1 requires that pressurizer code safety valve lift settings be between 2485 psig and 2560 psig. ITS Specification 3.4.10 requires that safety valve lift settings be between 2410 psig and 2560 psig. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, since the same level of overpressure protection is provided. The wider OPERABILITY range of 2485 psig ± 3% allows for drift during valve setpoint test intervals, as permitted by Section III of the ASME Code. During setpoint testing, the valves are reset to 2485 psig ± 1%, as required by Section XI of the ASME Code. This change is consistent with NUREG-1431.

L8 CTS Specification 3.3.1.3 requires that the SI pump breakers be racked out when RCS temperature is below 350°F and the system is not vented to containment atmosphere. ITS LCO 3.4.12.c requires all but one SI pump to be made incapable of injecting into the RCS when the RCS temperature is ≥ 175°F. This is a relaxation of requirements, and is less restrictive. This change is acceptable based on a new overpressure protection analysis that has been performed to allow OPERABILITY of one train of SI in MODE 4. This analysis assumes one SI pump and one charging pump capable of injection into the RCS with RCS temperature ≥ 175°F and < 350°F. The analysis also assumes a maximum of two Reactor Coolant Pumps operating.

L9 CTS Specification 3.1.1.3.c, which requires that all three pressurizer code safety valves be operable when RCS temperature is above 350°F, is revised to add ITS LCO 3.4.10 NOTE, which allows the safety valve lift settings to be outside the LCO limits for the purpose of setting the safety valves under ambient (hot) conditions. Because this note allows the pressurizer safety valves to be potentially inoperable in MODE 3 until the safety valves can be tested and set, this change is less

restrictive. This change is acceptable because the limitations included in the note (i.e., a maximum of 54 hours allowed following entry into MODE 3) assure that reactor decay heat is significantly reduced below the assumptions in the applicable safety analyses for LCO 3.4.10 (i.e., uncontrolled rod withdrawal from full power, loss of reactor coolant flow, loss of external electrical load, loss of normal feedwater, loss of all AC power to station auxiliaries, and a RCP locked rotor accident). This permits testing and examination of the safety valves at high pressure and temperature near their normal operating range, but only after the valves have had a preliminary cold setting. The cold setting gives assurance that the valves are OPERABLE near their design condition. Only one valve at a time will be removed from service for testing. The 54 hour exception is reasonable based on 18 hour outage time for each of the three valves. The 18 hour period is derived from operating experience that hot testing can be performed in this time frame.

L10 CTS Specification 3.1.5.3 requires that the unit be placed in cold shutdown within 30 hours of detection of exceeding primary to secondary leakage limits. ITS Specification 3.4.13 requires that the leakage be returned to within limits in 4 hours or be in MODE 3 in 6 hours and in MODE 5 in 36 hours. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because it provides time to investigate and verify the leakage rates and attempt to reduce leakage to within limits before being required to shut down the reactor. This action is necessary to prevent further deterioration of the RCPB. The additional time allowed to achieve cold shutdown is also acceptable because it has been shown to be a reasonable time, based on industry operating experience, to reach MODE 5 from full power conditions in an orderly manner, and without challenging plant systems, and considers the low probability of further degradation of the RCPB in the additional time interval. This change is consistent with NUREG-1431.

L11 CTS Table 4.1-3 (Item 9) requires that RCS leakage be evaluated "daily" when the RCS is above the cold shutdown condition. ITS Specification 3.4.13 requires verifying RCS operational LEAKAGE is within limits by performance of an RCS water inventory balance "Once within 12 hours after reaching steady state operation conditions <u>and</u> 72 hours thereafter during steady state operation." This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, since an early warning of pressure boundary leakage or unidentified leakage is provided by the automatic systems that monitor containment radioactivity and containment sump level. The leakage detection system operability requirements are specified in ITS Specification 3.4.15. Additionally, the more restrictive Completion Time requirements for the Required Actions associated with ITS Specification 3.4.13, together with the SR 3.4.13.1 requirement to perform an RCS water inventory balance on a 72 hour frequency, provide assurance that operational leakage is closely monitored.

The RCS water inventory balance must be met with the reactor at steady state operating conditions. Steady state operation is required to perform a proper inventory balance; calculations during maneuvering are not useful and a Note requires the Surveillance to be met when steady state operation is established. For RCS operational LEAKAGE determination by water inventory balance, steady state operation is defined as stable RCS pressure, temperature, power level, pressurizer and makeup tank levels, makeup and letdown, and RCP seal injection and return flows. Therefore, the initial performance of this SR within 12 hours after reaching continuous steady state operation is acceptable. This change is consistent with NUREG-1431.

L12 CTS Specification 3.1.5.4.b requires that, with leakage from any pressure isolation valve (PIV) not within limits, operation may continue provided that at least two valves are in, and remain in, the mode corresponding to the isolated condition. ITS Specification 3.4.14 requires initial isolation of the high pressure line by a single valve within 4 hours, and by a second valve within 72 hours. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because the CTS Specification has no completion time associated with the required actions. The extended interval is also acceptable because it is based on the time usually required to perform this action and considers the low probability of another valve failing during this period. This change is consistent with NUREG-1431.

L13 CTS Table 4.1-3, Item 17.1, requires that PIV leakage be verified prior to entering reactor operation whenever the unit has been in cold shutdown for 72 hours. ITS Specification 3.4.14 requires that PIV leakage be verified whenever the unit has been in MODE 5 for 7 days or more. The intent of this provision in the Frequency is to avoid extending a brief shutdown for PIV testing. Since the result of this change is a net reduction in the number of times that PIV leakage verification would be expected to be required over the remaining life of the plant, it is a relaxation of requirements, and is less restrictive. This change is acceptable, however, since PIV leakage verification is performed routinely at an 18 month frequency, and HBRSEP historical leakage verification experience has shown that the PIVs usually pass the Surveillances when performed at the specified Frequency. In addition, the plant conditions and test results associated with performing the PIV leakage testing are not affected whether the tests are conducted after 72 hours or after 7 days. Consequently, the Frequency is concluded to be acceptable from a reliability standpoint. This change is consistent with NUREG-1431.

L14 CTS Specification 3.1.4 requires that RCS specific activity be maintained within limits in "all modes," and "any operating mode." ITS Specification 3.4.16 is applicable in MODES 1 and 2; and MODE 3 with RCS average temperature (T_{avg}) ≥ 500°F. This is a relaxation of requirements, and is less restrictive. This change is acceptable,

however, because the LCO limits for DOSE EQUIVALENT I-131 and gross specific activity when operating in MODES 1 and 2, and in MODE 3 with RCS average temperature ≥ 500°F, are necessary to contain the potential consequences of a steam generator tube rupture (SGTR) to within the acceptable site boundary dose values. When the unit is operating in MODE 3 with RCS average temperature < 500°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 main steam safety valves. This change is consistent with NUREG-1431.

L15 CTS Table 4.1-2, Item 1, requires that reactor coolant samples be analyzed for gross activity at least every 72 hours. ITS Specification 3.4.16 requires that analysis be performed at a frequency of 7 days. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because the analysis provides an indication of any increase in gross specific activity, and trending the results of these analyses allows for proper remedial action to be taken before reaching the LCO limit under normal operating conditions. The relaxation of the surveillance frequency from 3 days to 7 days also considers the unlikelihood of a gross fuel failure during the extended interval. This change is consistent with NUREG-1431.

L16 CTS Specification 3.3.1.4.a contains a requirement that, under certain conditions, a Special Report be prepared and submitted to the NRC within 30 days. This requirement is not retained in the ITS. This is a relaxation of requirements, which is less restrictive. This change is acceptable, however, since this report covers incidents that have already occurred, and there is no requirement for the NRC to approve the report. Completion and submittal of the report is clearly not necessary to ensure safe operation of the unit after the condition has occurred. This change is consistent with NUREG-1431.

L17 CTS Specification 3.3.1.4.a requires that, in the event of an inoperable RHR loop, the existence of a method to add make-up water to the RCS be verified within 24 hours, and the RHR loop be restored to operable status within 14 days. ITS Specifications 3.4.7 and 3.4.8 require instead, that action be initiated immediately to restore a second RHR train to operable status. This change imposes less restrictive requirements because there are no requirements in the ITS to restore the inoperable RHR train or to verify a method to add make-up water. These changes are acceptable because the end result is the same, an RHR train is restored to OPERABLE and operating status in order to satisfy the LCO. This change is consistent with NUREG-1431.

L18 CTS Specification 3.1.1.2 requires two steam generators to be operable whenever the average primary coolant temperature is above 350°F. For the condition of an inoperable steam generator, no explicit allowed outage time is provided. As a result, in this condition entry into CTS

3.0 would be required. CTS 3.0 requires the unit to be placed in hot shutdown within 8 hours and to be placed in cold shutdown within the next 30 hours until the reactor is placed in a condition in which the specification is not applicable. For the same condition, ITS Specification 3.4.5 Required Action A.1 provides an allowed outage of time of 72 hours. If the inoperable component is not restored to OPERABLE status within 72 hours, ITS Specification 3.4.5 Required Action B.1 requires that the unit be placed in MODE 4 (which is outside the Applicability of Specification 3.4.5) within 12 hours. The addition of a Required Action Completion Time of 12 hours to reach MODE for is a more restrictive aspect of this change. In this condition, the remaining OPERABLE and operating RCS loop is adequate to provide the decay heat removal function, ensure that boron stratification does not occur. In addition, the requirements imposed by the LCO when only one RCS loop is operating are adequate to ensure a power excursion resulting from an inadvertent control rod withdrawal event is precluded. However, in this condition, a single failure may place the unit in a condition where adequate decay heat removal and proper mixing of the reactor coolant may not be available. Therefore, an allowable outage time of 72 hours is provided; after which the unit must be placed in MODE 4 within the next 12 hours. These time periods ensure the risk associated with unit operation in this condition is minimized while providing an allowance to attempt restoration prior to subjecting the unit to a cooldown transient. This change is consistent with NUREG-1431.

L19 CTS Specification 3.1.1.1.a allows the number of operating reactor coolant pumps to be reduced provided certain actions are taken. These actions ensure that a power excursion resulting from a inadvertent control rod withdrawal event is precluded. CTS Specification 3.1.1.1.a does not explicitly provide a time period for implementing these requirements in the event of a loss of an operating reactor coolant pump. ITS Specification 3.4.5 Required Action C.1 provides an allowable outage time of 1 hour to comply with the requirements of the LCO. This time period is adequate to be restore compliance with the LCO without exposing the unit to risk for an undue period of time. In addition, this time period is consistent with the 1 hour time provided in ITS LCO 3.0.3 before requiring the unit to be placed in a non-applicable MODE.

RELOCATED SPECIFICATIONS

R1	3.1.2.2	Steam Generator Pressure
	3.1.2.3	Pressurizer Heatup and Cooldown
	Table 4.1-2 Item 1	Oxygen and chloride concentration in the RCS

These Specifications, or Limiting Conditions for Operation (Chapter 3.0), are not retained in the ITS because they have been reviewed

against, and determined not to satisfy, the selection criteria for Technical Specifications provided in 10 CFR 50.36. The selection criteria were established to ensure that the Technical Specifications are reserved for those conditions or limitations on plant operation considered necessary to limit the possibility of an abnormal situation or event that could result in an immediate threat to the health and safety of the public. The rationale for relocation of each of these Specifications is provided in the report, "Application of Selection Criteria to the H. B. Robinson Steam Electric Plant Unit No. 2 Technical Specifications."

These Limiting Conditions for Operation, and their associated Surveillance Requirements (Chapter 4.0), are relocated to licensee controlled documents. Relocation of the specific requirements for systems or variables contained in these Specifications to licensee documents will have no impact on the operability or maintenance of those systems or variables. The licensee will initially continue to meet the requirements contained in the relocated Specifications. The licensee is allowed to make changes to these requirements in accordance with the provisions of 10 CFR 50.59. Such changes can be made without prior NRC approval, if the change does not involve an unreviewed safety question, as defined in 10 CFR 50.59. These controls are considered adequate for assuring that structures, systems, and components in the relocated Specifications are maintained operable, and variables are maintained within limits. This change is consistent with the NRC Final Policy Statement on Technical Specification Improvements.

LESS RESTRICTIVE CHANGES
("L1" Labeled Comments/Discussions)

Carolina Power & Light Company has evaluated the proposed Technical Specification change and has concluded it does not involve a significant hazards consideration. Our conclusion is in accordance with the criteria set forth in 10 CFR 50.92. The bases for the conclusion that the proposed change does not involve a significant hazards consideration are discussed below.

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

   The proposed change does not involve any physical alteration of plant systems, structures or components. This change permits de-energizing all RCPs and Residual Heat Removal (RHR) pumps for up to 1 hour in any 8 hour period. The reactor is in a shutdown MODE, where the primary concerns are dissipation of decay heat and boron stratification. Operation in this condition is done as part of a test, which is closely monitored. In addition, the provisions of the Notes are only applicable when measures are taken to ensure the loss of decay heat removal potential for boron stratification, and an inadvertent control rod withdrawal event are adequately compensated for or precluded. Since natural circulation provides adequate decay heat removal for the one hour time period allowed by the note, this change does not involve an increase in the probability or consequences of an accident previously evaluated.

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

   The proposed change does not involve any physical alteration of plant systems, structures or components. The natural circulation condition is bounded by the loss of forced reactor coolant flow event described in UFSAR Section 15.3.1 because the event in UFSAR Section 15.3.1 occurs in MODE 1, where decay heat is higher than in MODEs 3, 4, and 5. The period of time that natural circulation is permitted is limited. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created.

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

   There are no margins of safety, related to safety analyses, that are dependent upon the proposed change. The requirements will continue to assure that decay heat is adequately monitored during conduct of tests under no flow conditions. Industry operating experience has shown that boron stratification is not a problem during this short period in the absence of forced flow. In addition, the provisions of the Notes are only applicable when measures are taken to ensure the loss of decay heat removal, potential for boron stratification, and an inadvertent control rod withdrawal event are adequately compensated for or precluded. Therefore, this change does not involve a reduction in a margin of safety.

LESS RESTRICTIVE CHANGES
("L9" Labeled Comments/Discussions)

Carolina Power & Light Company has evaluated the proposed Technical Specification change and has concluded it does not involve a significant hazards consideration. Our conclusion is in accordance with the criteria set forth in 10 CFR 50.92. The bases for the conclusion that the proposed change does not involve a significant hazards consideration are discussed below.

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

   The proposed change does not involve any physical alteration of plant systems, structures or components. The proposed change allows the pressurizer safety valve lift settings to be outside the LCO limits for the purpose of setting the safety valves under ambient (hot) conditions for a limited period of time. The note limits the allowable period of time that this condition exists to a maximum of 54 hours allowed following entry into MODE 3. The conditions of the note also require that the safety valves have had a preliminary cold setting prior to entering MODE 3. Since the pressurizer safety valves are utilized to mitigate the consequences of an accident, and since the cold setting of the safety valves provide reasonable assurance that the safety valves will retain the pressure boundary until the safety valves are set under ambient (i.e., hot) conditions, the probability of an accident is not significantly increased. Similarly, the consequences of an accident are not significantly increased by the safety valve lift settings being outside the requirements of the LCO because the cold setting of the safety valves will limit the degree of setpoint uncertainty in response to an accident. Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

   The proposed change does not involve any physical alteration of plant systems, structures or components. The proposed change does not introduce a new mode of operation or changes in the method of normal plant operation. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created.

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

   The note will allow operation in MODE 3 with pressurizer safety valves potentially outside the required setting. However, the requirements of the note assure that will continue to assure that reactor decay heat is significantly reduced below the assumptions in the applicable safety analyses (i.e., uncontrolled rod withdrawal from full power, loss of reactor coolant flow, loss of external electrical load, loss of normal feedwater, loss of all AC power to station auxiliaries, and a RCP locked rotor accident), and the cold setting gives assurance that the valves will

operate near their design condition. Therefore, this change does not involve a significant reduction in a margin of safety.

LESS RESTRICTIVE CHANGES
("L10" Labeled Comments/Discussions)

Carolina Power & Light Company has evaluated the proposed Technical Specification change and has concluded it does not involve a significant hazards consideration. Our conclusion is in accordance with the criteria set forth in 10 CFR 50.92. The bases for the conclusion that the proposed change does not involve a significant hazards consideration are discussed below.

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

   The proposed change does not involve any physical alteration of plant systems, structures or components, changes in parameters governing normal plant operation, or methods of operation. The proposed change provides additional time to place the unit in cold shutdown as a result of excessive RCS operational leakage. The additional time allowed is reasonable, based on operating experience, to reach cold shutdown from full power operation in an orderly manner, and without challenging plant systems. The proposed change also considers the low probability of further degradation of the Reactor Coolant Pressure Boundary (RCPB) in the incremental time interval. Therefore, this change does not involve an increase in the probability or consequences of an accident previously evaluated.

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

   The proposed change does not involve any physical alteration of plant systems, structures or components, changes in parameters governing normal plant operation, or methods of operation. The proposed change does not introduce a new mode of operation or changes in the method of normal plant operation. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created.

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

   There are no margins of safety, related to safety analyses, that are dependent upon the proposed change. The requirements will continue to assure that the unit is shut down in the event of excessive RCS operational leakage. Therefore, this change does not involve a reduction in a margin of safety.

CTS

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.2 RCS Minimum Temperature for Criticality

LCO 3.4.2 Each RCS loop average temperature (T_{avg}) shall be ≥ [541] 530 °F.
[3.1.3.2]

APPLICABILITY: MODE 1,
[3.1.3.2] MODE 2 with k_{eff} ≥ 1.0.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
[M3] A. T_{avg} in one or more RCS loops not within limit.	A.1 Be in MODE 3 2 with k_{eff} < 1.0	30 minutes

TSTF-26

CTS

[M 3]

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.2.1	Verify RCS T_{avg} in each loop ≥ [541] °F. (530)	-----NOTE------ Only required if [T_{avg} - T_{ref} deviation / low low T_{avg}] alarm not reset and any RCS loop T_{avg} < [547] °F (543) ------------------- 30 minutes thereafter

CTS

1

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.3 RCS Pressure and Temperature (P/T) Limits

[3.1.2.1] LCO 3.4.3 RCS pressure. RCS temperature. and RCS heatup and cooldown rates shall be maintained within the limits specified in the PTLR. Figures 3.4.3-1 and 3.4.3-2 (4)

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
[M4] A. ----------NOTE---------- Required Action A.2 shall be completed whenever this Condition is entered. --------------------- Requirements of LCO not met in MODE 1. 2. 3. or 4.	A.1 Restore parameter(s) to within limits. AND A.2 Determine RCS is acceptable for continued operation.	30 minutes 72 hours
[M4] B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5 with RCS pressure < 500 psig. (400)	6 hours 36 hours

(continued)

CTS

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.5 RCS Loops – MODE 3

[3.1.1.2] [M36] [3.1.1.1.a] LCO 3.4.5 INSERT 3.4.5-1 ~~[Two] RCS loops shall be OPERABLE, and either:~~ (6)

a. ~~[Two] RCS loops shall be in operation when the Rod Control System is capable of rod withdrawal; or~~

b. ~~One RCS loop shall be in operation when the Rod Control System is not capable of rod withdrawal.~~

[L1] [M38]

---NOTE---

All reactor coolant pumps may be de-energized for ≤ 1 hour ~~per~~ in any 8 hour period provided: (5)

a. No operations are permitted that would cause reduction of the RCS boron concentration; ~~and~~

b. Core outlet temperature is maintained at least 10°F below saturation temperature; and

c. 1. Rod Control System is not capable of rod withdrawal,
OR
2. Reactor trip breakers are open,
OR
3. Lift disconnect switches for all control rods not fully withdrawn are open,
OR
4. SDM is within MODE 3 limits for no RCS loop in operation as specified in the COLR. (6)

[3.1.1.1] [3.1.1.2] APPLICABILITY: MODE 3.

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
[L16]	A. One required RCS loop inoperable.	A.1 Restore required RCS loop to OPERABLE status.	72 hours
[L16]	B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 4.	12 hours

(continued)

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
[L17] C. One required RCS loop not in operation, and reactor trip breakers closed and Rod Control System capable of rod withdrawal.	C.1 Restore required RCS loop to operation. OR C.2 De-energize all control rod drive mechanisms (CRDMs).	1 hour 1 hour
[M8] D. Two RCS loops inoperable. OR No RCS loop in operation.	D.1 De-energize all CRDMs. AND D.2 Suspend all operations involving a reduction of RCS boron concentration. AND D.3 Initiate action to restore one RCS loop to OPERABLE status and operation.	Immediately Immediately Immediately

Handwritten annotations: (32) "Requirements of the LCO not met for reasons other than Condition A or D." "Satisfy the requirements of the LCO" (1); "Required" (inserted in D); (33) "Required Action C.1 and associated Completion Time not met. OR"

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
[M8] SR 3.4.5.1 Verify required RCS loops are in operation.	12 hours

(continued)

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CTS

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.6 RCS Loops – MODE 4

[3.1.1.1.c] LCO 3.4.6 Two loops [or trains] consisting of any combination of RCS loops and residual heat removal (RHR) ~~loops~~ [trains] shall be OPERABLE, and one loop [or train] shall be in operation.

[L1]
[M38]

NOTES

1. All reactor coolant pumps (RCPs) and RHR pumps may be de-energized for ≤ 1 hour ~~per~~ [in any] 8 hour period provided: ⑤

   a. No operations are permitted that would cause reduction of the RCS boron concentration; ~~and~~

   b. Core outlet temperature is maintained at least 10°F below saturation temperature; and

   c. Rod Control System is not capable of rod withdrawal. ⑥

[3.1.1.1.d] 2. No RCP shall be started ~~with any RCS cold leg temperature ≤ [275]°F unless~~ [unless there is a steam bubble in the pressurizer or] the secondary side water temperature of each steam generator (SG) is ≤ ~~[50]~~°F above each of the RCS cold leg temperatures. ⑧

APPLICABILITY: MODE 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
[M11] A. One required ~~RCS~~ loop [or train] inoperable. AND ~~Two RHR loops inoperable.~~ [One required RCS loop OPERABLE]	A.1 Initiate action to restore a second loop [or train] to OPERABLE status.	Immediately

⑨

(continued)

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CTS

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.7 RCS Loops - MODE 5, Loops Filled

[3.3.1.4] LCO 3.4.7 One residual heat removal (RHR) loop shall be OPERABLE and in operation, and either:

a. One additional RHR loop shall be OPERABLE; or

b. The secondary side water level of at least [two] steam generators (SGs) shall be ≥ [17]%.

NOTES

[L1] 1. The RHR pump of the loop in operation may be de-energized for ≤ 1 hour per 8 hour period provided:

[M38] a. No operations are permitted that would cause reduction of the RCS boron concentration; and

b. Core outlet temperature is maintained at least 10°F below saturation temperature.

[L5] 2. One required RHR loop may be inoperable for up to 2 hours for surveillance testing provided that the other RHR loop is OPERABLE and in operation.

[3.1.1.1.d] 3. No reactor coolant pump shall be started with one or more RCS cold leg temperatures ≤ [275]°F unless the secondary side water temperature of each SG is ≤ [50]°F above each of the RCS cold leg temperatures.

[M12] 4. All RHR loops may be removed from operation during planned heatup to MODE 4 when at least one RCS loop is in operation.

[3.3.1.4] APPLICABILITY: MODE 5 with RCS loops filled.

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(1)

CTS

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.10 Pressurizer Safety Valves

[3.1.1.3.c.1] LCO 3.4.10 [Three] pressurizer safety valves shall be OPERABLE with lift settings ≥ [2460] psig and ≤ [2510] psig.

2410 2560 (14)

[3.1.1.3.c] APPLICABILITY: MODES 1, 2, and 3,
MODE 4 with all RCS cold leg temperatures > [275]°F. (15)

[L9]

------------------------------NOTE------------------------------
The lift settings are not required to be within the LCO limits during MODES 3 and 4 for the purpose of setting the pressurizer safety valves under ambient (hot) conditions. This exception is allowed for [54] hours following entry into MODE 3 provided a preliminary cold setting was made prior to heatup. (15)

ACTIONS

	CONDITION	REQUIRED ACTION	COMPLETION TIME
[M20]	A. One pressurizer safety valve inoperable.	A.1 Restore valve to OPERABLE status.	15 minutes
[M20]	B. Required Action and associated Completion Time not met. OR Two or more pressurizer safety valves inoperable.	B.1 Be in MODE 3. AND B.2 Be in MODE 4 with any RCS cold leg temperatures ≤ [275]°F. (15)	6 hours 12 hours

(1)

CTS

SURVEILLANCE REQUIREMENTS (continued)

CTS	SURVEILLANCE		FREQUENCY
[4.2.4.1.c]	SR 3.4.11.3	Perform a complete cycle of each solenoid air control valve and check valve on the air [nitrogen] accumulators in PORV control systems.	[18] months
[4.2.4.3]	SR 3.4.11.4	Verify PORVs and block valves are capable of being powered from emergency power sources. [Verify accumulators are capable of operating PORVs through a complete cycle]	[18] months

(17) (18) (19) (20)

Supplement 1

CTS

SURVEILLANCE REQUIREMENTS (continued)

CTS	SURVEILLANCE		FREQUENCY
	[SR 3.4.12.4	Verify RHR suction valve is open for each required RHR suction relief valve.	12 hours] (21)
[3.1.2.1.4]	SR 3.4.12.5 (6)	------NOTE------ Only required to be performed (met) (28) when complying with LCO 3.4.12.b (4.2) (28). ------------ Verify RCS vent ≥ (2.07) (3) square inches open.	12 hours for unlocked open vent valve(s) AND 31 days for locked open vent valve(s)
[4.2.5.1.c]	SR 3.4.12.6 (7)	Verify PORV block valve is open for each required PORV.	72 hours
	[SR 3.4.12.7	Verify associated RHR suction isolation valve is locked open with operator power removed for each required RHR suction relief valve.	31 days] (21)
[4.2.5.1.a] [T4.1-1 (31)]	SR 3.4.12.8	------NOTE------ Not required to be met until 12 hours after decreasing RCS cold leg temperature to ≤ [275]°F. ------------ (29) Perform a COT on each required PORV, excluding actuation.	Once within 31 days prior to entering MODE 4, 5, or 6 when the reactor vessel head is on AND (29) 31 days thereafter (29)

(continued)

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(1)

CTS

SURVEILLANCE REQUIREMENTS

CTS		SURVEILLANCE	FREQUENCY
[T 4.1-3 (9)]	SR 3.4.13.1	~~-----NOTE----- Not required to be performed in MODE 3 or 4 until 12 hours of steady state operation.~~ ~~Perform~~ RCS water inventory balance. Verify RCS ~~O~~operational (11) LEAKAGE (11) is within limits by performance of a (TSTF-61)	~~-----NOTE----- Only required to be performed during steady state operation~~ (22) ~~72 hours~~ Once within 12 hours after reaching steady state operation conditions AND 72 hours thereafter during steady state operation (22)
[A22]	SR 3.4.13.2	Verify steam generator tube integrity is in accordance with the Steam Generator Tube Surveillance Program.	In accordance with the Steam Generator Tube Surveillance Program

①

CTS

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
[T4.1-3(17)] [T3.1-1] SR 3.4.14.1	-------------------NOTES------------------ 1. Not required to be performed in MODES 3 and 4. 2. Not required to be performed on the RCS PIVs located in the RHR flow path when in the shutdown cooling mode of operation. 3. RCS PIVs actuated during the performance of this Surveillance are not required to be tested more than once if a repetitive testing loop cannot be avoided. --- Verify leakage from each RCS PIV is ~~equivalent to ≤ 0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm at an RCS pressure ≥ [2215] psig and ≤ [2255] psig.~~ less than or equal to an equivalent of 5 gpm at an RCS pressure ≥ 2235 psig, and verify the margin between the results of the previous leak rate test and the 5 gpm limit has not been reduced by ≥ 50% for values with leakage rates > 1.0 gpm.	In accordance with the Inservice Testing Program, and [18] months AND (26) Prior to entering MODE 2 whenever the unit has been in MODE 5 for 7 days or more, if leakage testing has not been performed in the previous 9 months AND (continued)

CTS

(1)

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.15 RCS Leakage Detection Instrumentation

[M31] LCO 3.4.15 The following RCS leakage detection instrumentation shall be OPERABLE:

a. One containment sump (level or discharge flow) monitor;

b. One containment atmosphere radioactivity monitor (gaseous or particulate); and

c. One containment air (fan) cooler condensate flow rate monitor.

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

TSTF-60 changes not shown (3)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
[M31] A. Required containment sump monitor inoperable.	------------NOTE------------ LCO 3.0.4 is not applicable. ----------------------------	
	A.1 Perform SR 3.4.13.1.	Once per 24 hours
	AND	
	A.2 Restore required containment sump monitor to OPERABLE status.	30 days

(continued)

1 In the conversion of the HBRSEP current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted which do not result in technical changes (either actual or interpretational). Editorial changes which involve the insertion of plant specific terms or parameters are used to preserve consistency with the CTS and licensing basis.

2 Not used.

3 TSTF-60 revisions are not incorporated in HBRSEP ITS 3.4.15 (NUREG-1431 Specification 3.4.15) since HBRSEP ITS 3.4.15 Required Action F.1 does not allow continued operation when all required RCS leakage detection systems are inoperable (Required Action F.1 requires immediate entry into LCO 3.0.3). As a result, it is inappropriate to allow the requirements of LCO 3.0.4 to not be applicable for Condition F of HBRSEP ITS 3.4.15. Moving the placement of the "LCO 3.0.4 is not applicable" Note to prior to the start of the ACTIONS Table (per TSTF-60), would allow the requirements of LCO 3.0.4 to not be applicable while complying with Required Action F.1 of HBRSEP ITS 3.4.15.

4 ITS Specifications 3.4.3 and 3.4.12 are modified by removing references to the Pressure and Temperature Limits Report (PTLR), and retaining CTS Figures 3.1-1 and 3.1-2, which provide RCS heatup and cooldown limitations, respectively, consistent with current licensing basis. The curves depicted in these figures were updated in 1994 to cover operation up to 24 effective full power years (EFPY).

5 ITS Specifications 3.4.5, 3.4.6, and 3.4.7 contain a Note, permitting RCPs and RHR pumps to be de-energized for ≤ 1 hour per 8 hour period. This Note is modified by changing the phrase, "per 8 hour period," to "in any 8 hour period," to eliminate any interpretation that these pumps can be de-energized for consecutive 1 hour periods in two 8 hour periods.

6 ITS Specifications 3.4.5 and 3.4.6 are modified to reinforce and clarify the requirements for forced RCS circulation when the Rod Control System is capable of rod withdrawal. HBRSEP control rods are withdrawn 5 steps during all normal heatup and cooldown operations to eliminate thermal binding in the dashpots. This requires some modification to these Specifications to recognize this condition, and the potential for an inadvertent rod withdrawal accident. In addition, LCO 3.4.5 is revised

to reflect the allowances of CTS 3.1.1.1.a which were approved in Amendment No. 87 dated November 7, 1984. Commensurate changes have also been made to the Actions and Surveillance Requirements.

7 ITS Specifications 3.4.6, 3.4.7 and 3.4.8 are modified by replacing the term, "loop," with the term, "train," when referring to the RHR System. Plant design basis consists of 2 RHR pumps and heat exchangers (and attendant power, instrumentation and control functions), arranged in parallel in a single piping circuit, thereby not having full redundancy for passive failures, as the term "loop" would imply.

8 ITS Specifications 3.4.6 and 3.4.7 are modified, consistent with current licensing basis, to require a steam bubble in the pressurizer, or SG temperature < 50oF above RCS temperature, prior to starting a reactor coolant pump during all modes of operation.

9 ITS Specification 3.4.6 is modified to clarify the Actions to be taken under specified conditions of applicability regarding those loops or trains which are OPERABLE and operating. This change was proposed because the ISTS does not include a Required Action for the conditions where only one required RCS Loop or one required RHR train is inoperable. This change is generic, has been accepted by the Westinghouse Owners Group, and is currently being reviewed by the Technical Specifications Task Force (TSTF).

10 ITS Specifications 3.4.7 and 3.4.8 are modified in LCO Note 2 to eliminate reference to one RHR train being in operation when the other is inoperable and de-energized for surveillance testing. Plant design basis is such that the active components of the RHR System are redundant, but the piping is not. Surveillance testing can not be performed on one train while the other train is operating.

11 ITS Specification text presentation is modified for clarity, or to correct a typographical or grammatical error.

12 ITS Specification 3.4.9 is modified to require that a water level of ≤ 63.3%, which is the upper end of the normal water level control band (53.3 ± 10%), be maintained in MODE 1. This level requirement is consistent with initial condition assumptions used in the accident analysis for the load rejection accident as described in Updated Final Safety Analysis Report (UFSAR) Section 15.2.2. The results of the accident analyses (i.e., UFSAR Figure 15.2.2-10) show that there is a high probability that the pressurizer would become water solid in the event that the initial conditions of the accident assumed an initial pressurizer level of 92% as included in the ISTS. The Specification is also modified to require that a water level of ≤ 92% be maintained in MODES 2 and 3. A higher water level is necessary in the pressurizer during cooldown to maintain pressurizer cooldown limits. This level

requirement also assures that the reactor does not go solid when criticality is achieved. Subsequent requirements are renumbered as a result of this change.

This change may be generic, depending upon the bandwidth in percent for pressurizer level. At HBRSEP, Unit No. 2, the instrumentation is best characterized as "wide range," effectively covering the entire range of the pressurizer. A generic change to the ISTS was proposed to the Westinghouse Owners Group, and the generic change was rejected.

13 ITS Specification 3.4.9 is modified, consistent with current licensing basis, to reflect that 125 kW of pressurizer heaters are required, and that they are not specifically arranged in two distinct and separate groups. Additionally, the Frequency for verification of heater capacity in SR 3.4.9.2 is changed from 92 days to 18 months. The pressurizer design capacity for the pressurizer heaters is 1300 kw. The heaters are divided into two 450 kw backup banks and one 400 kw control bank. The pressurizer heaters are load shed from the buses during a loss of offsite power, after which 150 kw of heaters are manually loaded from one of the backup banks and 150 kw of heaters are manually loaded from the control bank. This procedure is demonstrated in SR 3.4.9.3. Lack of installed instrumentation mandates the need to use portable instrumentation, which creates a personnel safety hazard during operation. The Frequency of 18 months is considered adequate to detect heater degradation since considerable margin exists within each heater bank from which heaters to be powered from the emergency bus are be selected. Operating experience has shown that that the operational restraints from reduced pressurizer heater capacity would necessitate restoration of heater capacity prior to the requirement for 125 kw of heater capacity being challenged.

14 ITS Specification 3.4.10 is modified to reflect a safety valve OPERABILITY setpoint tolerance of + 3% to allow for drift, in accordance with Section III of the ASME Boiler and Pressure Vessel Code.

15 ITS Specifications 3.4.10 and 3.4.12 are modified to reflect assumptions in the LTOP analysis. These assumptions are as follows:

a. The LTOP arming temperature is 350oF;

b. One charging pump is capable of injecting into the RCS when one SI pump is capable of injecting into the RCS;

c. One SI pump is capable of injecting into the RCS when RCS cold leg temperature is ≥ 175°F;

d. No SI pumps are capable of injecting into the RCS when RCS any cold leg temperature is < 175°F;and

e. A maximum of two RCPs can be operating when one SI pump is capable of injecting into the RCS.

Required Actions B and D are added to ITS 3.4.12 to address the additional requirements of LCO 3.4.12 when the LCO is not met, and SRs 3.4.12.4 and 3.4.12.5 are added to ITS 3.4.12 to verify that the additional LCO requirements are met.

The LTOP analyses are described in detail in Enclosure 5 to CP&L letter dated August 27, 1996, and in CP&L letter dated February 16, 1997.

The analyses for LTOP covers the range of RCS temperatures up to 350°F. LTOP provides overpressure protection for the RHR System in addition to the RCS. This protection is required because the RHR relief valve capacity is sized in accordance with United States of America Standards (USAS) Code, which is insufficient to withstand the postulated overpressure event of an inadvertant actuation of the SI pump.

The remaining assumptions are consistent with an analysis performed for the purposes of converting the Current Technical Specifications (CTS) to the ITS to permit Operability of a single ECCS train in MODE 4, consistent with the ISTS LCO 3.5.3.

16. ITS Specification 3.4.11 is modified with the addition of a NOTE to SR 3.4.11.2, which states that this Surveillance is not required to be performed until 12 hours after entry into MODE 3. Testing of PORVs in MODE 3 is required in order to simulate the temperature and pressure environmental effects on PORVs. In many PORV designs, testing in MODE 4 or MODE 5 is not considered to be a representative test for assessing PORV performance under normal plant operating conditions. This is consistent with CTS Specification 4.2.4.1.b, which allows RCS temperature to exceed 350°F in order to perform the Surveillance Requirement.

17 ITS SR 3.4.11.3 is modified by removing the word "air" as being associated with the term "accumulator," since plant configuration is such that nitrogen is used in the accumulators.

18 ITS Specification is modified in SR 3.4.11.3 by changing "air" accumulators to "nitrogen" accumulators to reflect plant design.

19 ITS Specification 3.4.11 is modified by deleting SR 3.4.11.4, since the PORVs and associated block valves are all permanently powered from vital buses.

20 ITS Specification 3.4.11 is modified by adding a new SR 3.4.11.4 to verify that accumulators are capable of operating the PORVs through a complete cycle, which is consistent with current licensing basis.

21 ITS Specification 3.4.12 is modified by deleting requirements related to RHR System suction relief valves, since such valves are not incorporated in the plant configuration. As a result, subsequent references to "relief valves" in the Actions and Surveillances are revised to explicitly references "PORVs." Subsequent numbering is also modified accordingly.

22 ITS Specification 3.4.13 is modified by the SR 3.4.13.1 NOTE in the Surveillance column related to 12 hours of steady state operation. Plant operating experience has shown that 12 hours of steady state operation is not necessary to perform an accurate water inventory balance. This is also reflected in the modified Frequency of once within 12 hours after reaching steady state operation conditions AND 72 hours thereafter during steady state operation. As a result of these changes, the NOTE in the Frequency column is removed since it is now addressed in the Frequency. This change is also consistent with the ISTS writers Guide which recommends minimizing the use of Notes.

23 ITS Specification 3.4.14 is modified to reflect a change in nomenclature from "RCS Pressure Isolation Valve (PIV) Leakage," to "RCS Pressure Isolation Valves (PIVs)," which more appropriately describes the Specification, since it deals with RHR interlock OPERABILITY as well as PIV leakage.

24 ITS Specification 3.4.14 is modified whereby the Required Actions which involve both PIV leakage and RHR interlock inoperability are made subject to shutdown actions if Completion Times are not met. This is appropriate, since there would be no follow up Action if the Completion Time for inoperable interlock function were not met.

25 ITS Specification 3.4.14 is modified by removing references to the RHR System "autoclosure" function. This "autoclosure" function is not part of the plant design basis. The RHR interlock serves to prevent the RHR valves from opening when the RCS pressure is above the setpoint, but has no automatic closure function.

26 ITS Specification 3.4.14 is modified by incorporating PIV leakage rate acceptance criteria, which is consistent with the ASME Code, plant practice, and the current licensing basis.

27 ITS Specification 3.4.16 is modified to reflect elimination of the requirement to perform SR 3.4.16.2 when RCS gross specific activity is not within limit. SR 3.4.16.2 must be performed in order to verify "restoration" of the specific activity to within limits, and does not need to be otherwise performed. Further, if the Condition is entered and the plant is in MODE 2 in 4 hours or less, the Required Action is in conflict with the NOTE to SR 3.4.16.2, which states that the SR is only required to be performed in MODE 1. Performance of the SR is also an

unnecessary burden, since the plant is required to be in MODE 3 with Tavg < 500°F within 6 hours, thereby exiting the MODE of Applicability.

28 ITS SR 3.4.12.6 requires that an RCS vent ≥ 3 square inches is open. SR 3.4.12.6 is modified by a Note which states that this SR is only required to be "met" when complying with LCO 3.4.12.a.2. LCO 3.4.12 provides two options for complying with LCO 3.4.12.a. As a result, consistent with ITS 1.4, "Frequency," if LCO 3.4.12 is required to be complied with, then LCO 3.4.12.a.1 or LCO 3.4.12.a.2 is required to be met. ITS 1.4 uses the term "performed" to avoid SR 3.0.4 conflicts. In this case, no SR 3.0.4 conflicts exist. Therefore, the term "performed" is not replaced with "met".

29 SR 3.4.12.8 of the ISTS includes a Note that allows the completion of the performance of the Channel Operational Test for each required PORV to be delayed until 12 hours after entering into the applicable MODE in which the PORVs are required to provide Low Temperature Overpressure Protection (LTOP). The purpose of this Note is to provide time to establish the conditions necessary to perform the Surveillance since at some plants the required Channel Operational Test cannot be performed until the plant is in the LTOP MODES. HBRSEP Unit No.2 ITS Specification 3.4.12 is modified to delete this Note. At HBRSEP Unit No. 2, the design of the LTOP System is such that this Surveillance can be performed prior to entering the LTOP MODES. As a result of this change and the incorporation of ITS SR 3.0.4, the Frequency of SR 3.4.12.8 is modified to reflect the current licensing basis approved in Amendment No. 162.

30 LCO 3.4.9.b of the ISTS requires pressurizer heaters to be OPERABLE with a specified capacity (in kW) and be capable of being powered from an emergency power supply. The ISTS ACTIONS of Specification 3.4.9 address inoperable pressurizer heaters but do not address pressurizer heaters not capable of being powered from an emergency power supply. As a result of the definition of OPERABLE-OPERABILITY in ITS 1.1, Definitions, the pressurizer heaters would not be considered inoperable if they were incapable of being powered from an emergency power supply provided they were powered from a normal power supply. Therefore, Condition C is provided for the condition of the required pressurizer heaters not capable of being powered from an emergency power supply. This change is consistent with the current licensing basis approved in Amendment No. 59. HBRSEP Unit No.2 ITS Specification 3.4.9 Condition C requires restoration of the capability to power the required pressurizer heaters from an emergency power supply within 72 hours. The subsequent Condition is renumbered as a result of this change.

31 To meet the LCO requirements for ISTS Specification 3.4.7 (RCS Loops-MODE 5, Loops Filled), ISTS LCO 3.4.7.b provides the allowance to utilize the secondary side water level of the required plant specific

number of steam generators to be greater than or equal to a specified plant specific value. LCO 3.4.7.b of the HBRSEP Unit No.2 ITS is revised to require that the required steam generator also be OPERABLE. The requirement for the steam generator to be OPERABLE is specified in the Bases of ISTS 3.4.7. This change is being done to provide consistency between the requirements in the LCO and the description of these requirements in the associated Bases.

32 ISTS LCO 3.4.5 Condition C, and associated Required Actions, are modified in ITS 3.4.5 Condition C and associated Required Actions to provide a condition, other than LCO 3.0.3, when requirements of the LCO associated with precluding a rod withdrawal accident are not met and that are not covered by Conditions A or D.

33 ISTS LCO 3.4.5 Condition D, is modified in ITS 3.4.5 to add the condition, other than LCO 3.0.3, when the Completion Time of Required Action C.1 is not met. This change is necessary to require actions D.1, D.2, and D.3 to be performed immediately to preclude conditions of the LCO that are not met from continuing to be outside of the applicable safety analyses beyond the allowed one (1) hour of Required Action C.1.

1

BASES

APPLICABILITY (continued)

temperatures to fall below the temperature limit of this LCO.

ACTIONS

A.1

If the parameters that are outside the limit cannot be restored, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to MODE 3 within 30 minutes. Rapid reactor shutdown can be readily and practically achieved within a 30 minute period. The allowed time is reasonable, based on operating experience, to reach MODE 3 in an orderly manner and without challenging plant systems.

2 with Keff < 1.0

TSTF-26

SURVEILLANCE REQUIREMENTS

SR 3.4.2.1

RCS loop average temperature is required to be verified at or above 541°F every 30 minutes when T_{avg} - T_{ref} deviation, low low T_{avg} alarm not reset and any RCS loop T_{avg} < 547°F.

530 / the / is / 543 / 5

The Note modifies the SR. When any RCS loop average temperature is < 547°F and the T_{avg} - T_{ref} deviation, low low T_{avg} alarm is alarming, RCS loop average temperatures could fall below the LCO requirement without additional warning. The SR to verify RCS loop average temperatures every 30 minutes is frequent enough to prevent the inadvertent violation of the LCO.

SR is modified by a Note which states that the Surveillance is only required when

543 / since

REFERENCES

1. FSAR, Section 15.0.3.

U / 4

Supplement 1

BASES

ACTIONS

B.1 and B.2 (continued)

If the required evaluation for continued operation cannot be accomplished within 72 hours or the results are indeterminate or unfavorable, action must proceed to reduce pressure and temperature as specified in Required Action B.1 and Required Action B.2. A favorable evaluation must be completed and documented before returning to operating pressure and temperature conditions.

Pressure and temperature are reduced by bringing the plant to MODE 3 within 6 hours and to MODE 5 with RCS pressure < [500] psig within 36 hours.

The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

C.1 and C.2

Actions must be initiated immediately to correct operation outside of the P/T limits at times other than when in MODE 1, 2, 3, or 4, so that the RCPB is returned to a condition that has been verified by stress analysis.

The immediate Completion Time reflects the urgency of initiating action to restore the parameters to within the analyzed range. Most violations will not be severe, and the activity can be accomplished in this time in a controlled manner.

Besides restoring operation within limits, an evaluation is required to determine if RCS operation can continue. The evaluation must verify that the RCPB integrity remains acceptable and must be completed prior to entry into MODE 4. Several methods may be used, including comparison with pre-analyzed transients in the stress analyses, or inspection of the components.

ASME Code, Section XI, Appendix E (Ref. [8]), may be used to support the evaluation. However, its use is restricted to evaluation of the vessel beltline.

(continued)

Supplement 1

(1)

BASES

ACTIONS

C.1 and C.2 (continued)

the Required Action is either to restore the required RCS loop to operation or to de-energize all CRDMs by opening the RTBs or de-energizing the motor generator (MG) sets. When the RTBs are in the closed position and Rod Control System capable of rod withdrawal, it is postulated that a power excursion could occur in the event of an inadvertent control rod withdrawal. This mandates having the heat transfer capacity of two RCS loops in operation. If only one loop is in operation, the RTBs must be opened. The Completion Times of 1 hour to restore the required RCS loop to operation or de-energize all CRDMs is adequate to perform these operations in an orderly manner without exposing the unit to risk for an undue time period.

(7)

INSERT B 3.4.5-3

D.1, D.2, and D.3

If [two] RCS loops are inoperable or no RCS loop is in operation, except as during conditions permitted by the Note in the LCO section, all CRDMs must be de-energized by opening the RTBs or de-energizing the MG sets. All operations involving a reduction of RCS boron concentration must be suspended, and action to restore one of the RCS loops to OPERABLE status and operation must be initiated. Boron dilution requires forced circulation for proper mixing, and opening the RTBs or de-energizing the MG sets removes the possibility of an inadvertent rod withdrawal. The immediate Completion Time reflects the importance of maintaining operation for heat removal. The action to restore must be continued until one loop is restored to OPERABLE status and operation.

(1) A planned reduction in RCS boron concentration

SURVEILLANCE REQUIREMENTS

SR 3.4.5.1

(10) or

This SR requires verification every 12 hours that the required loops are in operation. Verification includes flow rate, temperature, and pump status monitoring, which help ensure that forced flow is providing heat removal. The Frequency of 12 hours is sufficient considering other indications and alarms available to the operator in the control room to monitor RCS loop performance.

(continued)

Supplement 1

ITS INSERT B 3.4.5-3 (RCS Loops-MODE 3)

C.1

With the requirements of the LCO not met for reasons other than Conditions A or D (i.e., one of the two required RCS loops not in operation and the requirements of LCO 3.4.5 item a, b, c, or d not met), an additional RCS loop must be restored to operation within 1 hour. Should a power excursion occur due to an inadvertent control rod withdrawal transient with one of the two required RCS loops not in operation and the requirements of LCO 3.4.5 item a, b, c, or d not satisfied, the accident analysis limits may be exceeded. Therefore, only a limited time is allowed to restore an additional RCS loop to operation. Alternatively, if the requirements of the LCO 3.4.5 item a, b, c, or d are met, operation with only one RCS loop in operation would satisfy the requirements of the LCO and ensure that the possibility of a power excursion associated with an inadvertent control rod withdrawal transient is precluded. The 1 hour Completion Time is adequate to perform these operations in an orderly manner without exposing the unit to risk for an undue period of time.

D.1, D.2, and D.3

With Required Action C.1 and associated Completion Time not met, two required RCS loops inoperable, or no RCS loops in operation (except during the conditions permitted by the Note in the LCO section),

(1)

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.4.11.1

Block valve cycling verifies that the valve(s) can be closed if needed. The basis for the Frequency of 92 days is the ASME Code, Section XI (Ref. 3). If the block valve is closed to isolate a PORV that is capable of being manually cycled, the OPERABILITY of the block valve is of importance, because opening the block valve is necessary to permit the PORV to be used for manual control of reactor pressure. If the block valve is closed to isolate an otherwise inoperable PORV, the maximum Completion Time to restore the PORV and open the block valve is 72 hours, which is well within the allowable limits (25%) to extend the block valve Frequency of 92 days. Furthermore, these test requirements would be completed by the reopening of a recently closed block valve upon restoration of the PORV to OPERABLE status (i.e., completion of the Required Actions fulfills the SR).

The Note modifies this SR by stating that it is not required to be met with the block valve closed, in accordance with the Required Action of this LCO. (21)

INSERT B 3.4.11-2

SR 3.4.11.2

SR 3.4.11.2 requires a complete cycle of each PORV. Operating a PORV through one complete cycle ensures that the PORV can be manually actuated ~~for mitigation of an SGTR~~. (20) The Frequency of [18] months is based on a typical refueling cycle and industry accepted practice.

prior to entering MODE 2 from MODE 3 if not performed in the previous

(22)

The Note provides guidance to perform this SR within 12 hours of entering MODE 3. This allows adequate time to establish proper plant conditions and ensures the SR is performed in a timely manner.

[SR 3.4.11.3

Operating the solenoid air control valves and check valves on the ~~air~~ nitrogen accumulators ensures the PORV control system actuates properly when called upon. The Frequency of [18] months is based on a typical refueling cycle and the Frequency of the other Surveillances used to demonstrate PORV OPERABILITY.]

[SR 3.4.11.4

~~This Surveillance is not required for plants with permanent 1E power supplies to the valves.~~] (19)

(continued)

Supplement 1

ITS Insert B.3.4.11-2 (Pressurizer PORVs)

Testing the PORVs in MODE 3 is required in order to simulate the temperature and pressure environmental effects on PORVs. In the HBRSEP Unit No. 2 PORV design, testing in MODE 4 or MODE 5 is not considered to be a representative test for assessing PORV performance under normal plant operating conditions.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.4.12.4 (continued)

The RHR suction valve is verified to be opened every 12 hours. The Frequency is considered adequate in view of other administrative controls such as valve status indications available to the operator in the control room that verify the RHR suction valve remains open.

The ASME Code, Section XI (Ref. 8), test per Inservice Testing Program verifies OPERABILITY by proving proper relief valve mechanical motion and by measuring and, if required, adjusting the lift setpoint.

SR 3.4.12.5

The RCS vent of ≥ [2.07] square inches is proven OPERABLE by verifying its open condition either:

a. Once every 12 hours for a valve that cannot be locked.

b. Once every 31 days for a valve that is locked, sealed, or secured in position. A removed pressurizer safety valve fits this category.

The passive vent arrangement must only be open to be OPERABLE. This Surveillance is required to be performed if the vent is being used to satisfy the pressure relief requirements of the LCO 3.4.12b.

SR 3.4.12.6

The PORV block valve must be verified open every 72 hours to provide the flow path for each required PORV to perform its function when actuated. The valve must be remotely verified open in the main control room. [This Surveillance is performed if the PORV satisfies the LCO.]

The block valve is a remotely controlled, motor operated valve. The power to the valve operator is not required removed, and the manual operator is not required locked in the inactive position. Thus, the block valve can be closed in the event the PORV develops excessive leakage or does not close (sticks open) after relieving an overpressure situation.

(continued)

(1)

BASES

APPLICABLE SAFETY ANALYSES (continued)	RCS leakage detection instrumentation satisfies Criterion 1 of the NRC Policy Statement.
LCO	One method of protecting against large RCS leakage derives from the ability of instruments to rapidly detect extremely small leaks. This LCO requires instruments of diverse monitoring principles to be OPERABLE to provide a high degree of confidence that extremely small leaks are detected in time to allow actions to place the plant in a safe condition, when RCS LEAKAGE indicates possible RCPB degradation. The LCO is satisfied when monitors of diverse measurement means are available. Thus, the containment sump monitor, in combination with a gaseous or particulate radioactivity monitor and a containment air cooler condensate flow rate monitor, provides an acceptable minimum.
APPLICABILITY	Because of elevated RCS temperature and pressure in MODES 1, 2, 3, and 4, RCS leakage detection instrumentation is required to be OPERABLE. In MODE 5 or 6, the temperature is to be ≤ 200°F and pressure is maintained low or at atmospheric pressure. Since the temperatures and pressures are far lower than those for MODES 1, 2, 3, and 4, the likelihood of leakage and crack propagation are much smaller. Therefore, the requirements of this LCO are not applicable in MODES 5 and 6.
ACTIONS	A.1 and A.2 With the required containment sump monitor 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 3.4.13.1,

(continued)

Supplement 1

1 In the conversion of the HBRSEP current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted which do not result in technical changes (either actual or interpretational). Editorial changes which involve the insertion of plant specific terms or parameters are used to preserve consistency with the CTS and licensing basis.

2 Bases for ITS 3.4.1 are modified by incorporating plant specific DNBR safety limits and the appropriate Reference document.

3 Bases text presentation is modified to improve clarity, or to correct a typographical or grammatical error.

4 Not used.

5 The Note and the Frequency discussions in the Bases of ITS SR 3.4.2.1 are modified to clarify that entry into the applicable condition without first performing the Surveillance does not result in non-compliance with the LCO and that entry into the applicable condition of the LCO requires the Surveillance to be met. The plant design incorporates monitoring of Tavg and an automatic alarm as Tavg approaches its limit. As a result, the Surveillance is met by the monitoring of the automatic alarm status. The intent of the Frequency specified in SR 3.4.2.1 is to require verification during the time that the monitoring instrumentation would be in alarm.

6 Bases for ITS 3.4.3 and 3.4.12 are modified by removing references to the Pressure and Temperature Limits Report (PTLR), and retaining CTS Figures 3.1-1 and 3.1-2, which provide RCS heatup and cooldown limitations, respectively, consistent with current licensing basis. The curves depicted in these figures were updated in 1994 to cover operation up to 24 effective full power years (EFPY).

7 Bases are modified to incorporate plant specific safety analyses and/or Bases information or to reflect changes made to the Specifications.

8 The Bases for ITS 3.4.5, 3.4.6, and 3.4.7 contain a Note, permitting RCPs and RHR pumps to be de-energized for ≤1 hour per 8 hour period. This Note is modified by changing the phrase, "per 8 hour period," to "in any 8 hour period," to eliminate any interpretation that these pumps can be de-energized for consecutive 1 hour periods in two 8 hour

3.4.12.5 and 3.4.12.6 are added to ITS 3.4.12 to verify that the additional LCO requirements are met.

40 Bases for ITS 3.4.1 are modified to reflect that uncertainties in the precision heat balance are accounted for in procedures.

41 Bases for ITS 3.4.12 are modified to reflect that makeup to the RCS is performed by the CVCS. HBRSEP is not equipped with a "makeup control system," as described in NUREG-1431.

42 Bases for ITS 3.4.12 are modified to reflect a constant pressure setpoint for LTOP.

43 Bases for ITS 3.4.12 are modified to reflect a current method for blocking open the PORVs to establish a vent path without disassembly of valve internals.

44 Bases for ITS 3.4.12 are modified to reflect that HBRSEP has no means of "fixing" a breaker in the open position other than opening the breaker. Opening the breaker prevents the accumulator isolation valve from opening on an SI signal, or being inadvertently opened from the control room.

45 TSTF-60 revisions are not incorporated in the Bases of HBRSEP ITS 3.4.15 (NUREG-1431 Specification 3.4.15) since HBRSEP ITS 3.4.15 Required Action F.1 does not allow continued operation when all required RCS leakage detection systems are inoperable (Required Action F.1 requires immediate entry into LCO 3.0.3). As a result, it is inappropriate to allow the requirements of LCO 3.0.4 to not be applicable for Condition F of HBRSEP ITS 3.4.15. Moving the placement of the "LCO 3.0.4 is not applicable" Note to prior to the start of the ACTIONS Table (per TSTF-60), would allow the requirements of LCO 3.0.4 to be not applicable while complying with Required Action F.1 of HBRSEP ITS 3.4.15.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.2.1	Verify RCS T_{avg} in each loop ≥ 530°F.	-----NOTE----- Only required if low T_{avg} alarm not reset and any RCS loop T_{avg} < 543°F. --------------- 30 minutes thereafter

3.4.3 RCS Pressure and Temperature (P/T) Limits

LCO 3.4.3 RCS pressure, RCS temperature, and RCS heatup and cooldown rates shall be maintained within the limits specified in Figures 3.4.3-1 and 3.4.3-2.

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ---------NOTE--------- Required Action A.2 shall be completed whenever this Condition is entered. --------------------- Requirements of LCO not met in MODE 1, 2, 3, or 4.	A.1 Restore parameter(s) to within limits. AND A.2 Determine RCS is acceptable for continued operation.	30 minutes 72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5 with RCS pressure < 400 psig.	6 hours 36 hours

(continued)

APPLICABILITY: MODE 3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One required RCS loop inoperable.	A.1	Restore required RCS loop to OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1	Be in MODE 4.	12 hours
C. Requirements of the LCO not met for reasons other than Condition A or D.	C.1	Satisfy the conditions of the LCO.	1 hour
D. Required Action C.1 and associated Completion Time not Met. OR Two required RCS loops inoperable. OR No RCS loop in operation.	D.1	De-energize all CRDMs.	Immediately
	AND		
	D.2	Suspend all operations involving a reduction of RCS boron concentration.	Immediately
	AND		
	D.3	Initiate action to restore one RCS loop to OPERABLE status and operation.	Immediately

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.6 RCS Loops – MODE 4

LCO 3.4.6 Two loops or trains consisting of any combination of RCS loops and residual heat removal (RHR) trains shall be OPERABLE, and one loop or train shall be in operation.

-----NOTES-----

1. All reactor coolant pumps (RCPs) and RHR pumps may be de-energized for ≤ 1 hour in any 8 hour period provided:
   a. No operations are permitted that would cause reduction of the RCS boron concentration;
   b. Core outlet temperature is maintained at least 10°F below saturation temperature; and
   c. Rod Control System is not capable of rod withdrawal.
2. No RCP shall be started unless there is a steam bubble in the pressurizer or the secondary side water temperature of each steam generator (SG) is ≤ 50°F above each of the RCS cold leg temperatures.

APPLICABILITY: MODE 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required loop or train inoperable. AND One required RCS loop OPERABLE.	A.1 Initiate action to restore a second loop or train to OPERABLE status.	Immediately

(continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One required loop or train inoperable. AND One required RHR train OPERABLE.	B.1	Be in MODE 5.	24 hours
C. Two required loops or trains inoperable. OR Required loop or train not in operation.	C.1	Suspend all operations involving a reduction of RCS boron concentration.	Immediately
	AND		
	C.2	Initiate action to restore one loop or train to OPERABLE status and operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.6.1	Verify one RHR train or RCS loop is in operation.	12 hours
SR 3.4.6.2	Verify SG secondary side water levels are ≥ 16% for required RCS loops.	12 hours
SR 3.4.6.3	Verify correct breaker alignment and indicated power are available to the required pump that is not in operation.	7 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.11.2	------------------NOTE------------------ Not required to be performed until 12 hours after entry into MODE 3. -- Perform a complete cycle of each PORV.	Prior to entering MODE 2 from MODE 3 if not performed in the previous 18 months
SR 3.4.11.3	Perform a complete cycle of each solenoid air control valve and check valve on the nitrogen accumulators in PORV control systems.	18 months
SR 3.4.11.4	Verify accumulators are capable of operating PORVs through a complete cycle.	18 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.12.6	------------------NOTE------------------ Only required to be met when complying with LCO 3.4.12.a.2. -- Verify RCS vent ≥ 3 square inches open.	12 hours for unlocked open vent valve(s) AND 31 days for locked open vent valve(s)
SR 3.4.12.7	Verify PORV block valve is open for each required PORV.	72 hours
SR 3.4.12.8	Perform a COT on each required PORV, excluding actuation.	Once within 31 days prior to entering MODE 4, 5, or 6, when reactor vessel head is on AND 31 days thereafter
SR 3.4.12.9	Perform CHANNEL CALIBRATION for each required PORV actuation channel.	18 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.13.1	Verify RCS operational LEAKAGE is within limits by performance of RCS water inventory balance.	Once within 12 hours after reaching steady state operation conditions AND 72 hours thereafter during steady state operation
SR 3.4.13.2	Verify steam generator tube integrity is in accordance with the Steam Generator Tube Surveillance Program.	In accordance with the Steam Generator Tube Surveillance Program

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.14.1	------------------NOTES------------------ 1. Not required to be performed in MODES 3 and 4. 2. Not required to be performed on the RCS PIVs located in the RHR flow path when in the shutdown cooling mode of operation. 3. RCS PIVs actuated during the performance of this Surveillance are not required to be tested more than once if a repetitive testing loop cannot be avoided. --	
	Verify leakage from each RCS PIV is less than or equal to an equivalent of 5 gpm at an RCS pressure ≥ 2235 psig, and verify the margin between the results of the previous leak rate test and the 5 gpm limit has not been reduced by ≥ 50% for valves with leakage rates > 1.0 gpm.	In accordance with the Inservice Testing Program and 18 months <u>AND</u> Prior to entering MODE 2 whenever the unit has been in MODE 5 for 7 days or more, if leakage testing has not been performed in the previous 9 months <u>AND</u> (continued)

BASES

APPLICABILITY (continued)	temperatures to fall below the temperature limit of this LCO.
ACTIONS	<u>A.1</u> If the parameters that are outside the limit cannpt be restored, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to MODE 2 with $K_{eff} < 1.0$ within 30 minutes. Rapid reactor shutdown can be readily and practically achieved within a 30 minute period. The allowed time is reasonable, based on operating experience, to reach MODE 2 with $K_{eff} < 1.0$ in an orderly manner and without challenging plant systems.
SURVEILLANCE REQUIREMENTS	<u>SR 3.4.2.1</u> RCS loop average temperature is required to be verified at or above 530°F every 30 minutes when the low T_{avg} alarm is not reset and any RCS loop T_{avg} < 543°F. The SR is modified by a Note which states that the Surveillance is only required when any RCS loop average temperature is < 543°F and the low T_{avg} alarm is alarming, since RCS loop average temperatures could fall below the LCO requirement without additional warning. The SR to verify RCS loop average temperatures every 30 minutes is frequent enough to prevent the inadvertent violation of the LCO.
REFERENCES	1. UFSAR, Section 15.0.4.

BASES

ACTIONS

A.1 and A.2 (continued)

is insufficient because higher than analyzed stresses may have occurred and may have affected the RCPB integrity.

B.1 and B.2

If a Required Action and associated Completion Time of Condition A are not met, the plant must be placed in a lower MODE because either the RCS remained in an unacceptable P/T region for an extended period of increased stress or a sufficiently severe event caused entry into an unacceptable region. Either possibility indicates a need for more careful examination of the event, best accomplished with the RCS at reduced pressure and temperature. In reduced pressure and temperature conditions, the possibility of propagation with undetected flaws is decreased.

If the required restoration activity cannot be accomplished within 30 minutes, Required Action B.1 and Required Action B.2 must be implemented to reduce pressure and temperature.

If the required evaluation for continued operation cannot be accomplished within 72 hours or the results are indeterminate or unfavorable, action must proceed to reduce pressure and temperature as specified in Required Action B.1 and Required Action B.2. A favorable evaluation must be completed and documented before returning to operating pressure and temperature conditions.

Pressure and temperature are reduced by bringing the plant to MODE 3 within 6 hours and to MODE 5 with RCS pressure < 400 psig within 36 hours.

The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

C.1 and C.2

Actions must be initiated immediately to correct operation outside of the P/T limits at times other than when in

(continued)

BASES

ACTIONS (continued)

D.1, D.2, and D.3

With Required Action C.1 and associated Completion Time not met, two required RCS loops inoperable, or no RCS loops in operation (except during the conditions permitted by the Note in the LCO section), all CRDMs must be de-energized by opening the RTBs or de-energizing the MG sets. All operations involving a reduction of RCS boron concentration must be suspended, and action to restore one of the RCS loops to OPERABLE status and operation must be initiated. A planned reduction in RCS boron concentration requires forced circulation for proper mixing, and opening the RTBs or de-energizing the MG sets removes the possibility of an inadvertant rod withdrawal. The immediate Completion Time reflects the importance of maintaining operation for heat removal. The action to restore must be continued until one loop is restored to OPERABLE status and operation.

SURVEILLANCE REQUIREMENTS

SR 3.4.5.1

This SR requires verification every 12 hours that the required loops are in operation. Verification includes flow rate, temperature, or pump status monitoring, which help ensure that forced flow is providing heat removal. The Frequency of 12 hours is sufficient considering other indications and alarms available to the operator in the control room to monitor RCS loop performance.

SR 3.4.5.2

SR 3.4.5.2 requires verification of SG OPERABILITY. SG OPERABILITY is verified by ensuring that the secondary side narrow range water level is ≥ 16% for required RCS loops. If the SG secondary side narrow range water level is < 16%, the tubes may become uncovered and the associated loop may not be capable of providing the heat sink for removal of the decay heat. The 12 hour Frequency is considered adequate in view of other indications available in the control room to alert the operator to a loss of SG level.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.4.11.3

Operating the solenoid air control valves and check valves on the nitrogen accumulators ensures the PORV control system actuates properly when called upon. The Frequency of 18 months is based on a typical refueling cycle and the Frequency of the other Surveillances used to demonstrate PORV OPERABILITY.

SR 3.4.11.4

The Surveillance demonstrates that the accumulators are capable of supplying sufficient nitrogen to operate the PORVs if they are needed for RCS pressure control, and normal nitrogen and the backup instrument air systems are not available. Backup instrument air is supplied when the accumulator reaches its low pressure setpoint. The Frequency of 18 months is based on a typical refueling cycle and industry accepted practice.

REFERENCES

1. UFSAR, Section 15.6.
2. Generic Letter 90-06, "Resolution of Generic Issue 70, 'Power-Operated Relief Valve and Block Valve Reliability,' and Generic Issue 94, 'Additional Low-Temperature Overpressure Protection for Light-Water Reactors,' Pursuant to 10 CFR 50.54(f)," dated June 25, 1990.
3. ASME, Boiler and Pressure Vessel Code, Section XI.

SURVEILLANCE REQUIREMENTS

SR 3.4.12.6 (continued)

The passive vent arrangement must only be open to be OPERABLE. This Surveillance is required to be met if the vent is being used to satisfy the pressure relief requirements of the LCO 3.4.12.a.2.

SR 3.4.12.7

The PORV block valve must be verified open every 72 hours to provide the flow path for each required PORV to perform its function when actuated. The valve must be remotely verified open in the main control room. This Surveillance is performed if the PORV satisfies the LCO.

The block valve is a remotely controlled, motor operated valve. The power to the valve operator is not required removed, and the manual operator is not required locked in the inactive position. Thus, the block valve can be closed in the event the PORV develops excessive leakage or does not close (sticks open) after relieving an overpressure situation.

The 72 hour Frequency is considered adequate in view of other administrative controls available to the operator in the control room, such as valve position indication, that verify that the PORV block valve remains open.

SR 3.4.12.8

Performance of a COT is required within 12 hours after decreasing RCS temperature to ≤ 350°F and every 31 days on each required PORV to verify and, as necessary, adjust its lift setpoint. The COT will verify the setpoint is within the allowed maximum limits in the LTOP analyses. PORV actuation could depressurize the RCS and is not required.

The Frequency of "Once within 31 days prior to entering MODE 4, 5, or 6 when the reactor vessel head is on AND 31 days thereafter" ensures that SR 3.4.12.8 is performed prior to entry into the MODES or specified condition of the Applicability and has been proven to be acceptable based on operating experience.

(continued)

IMPROVED STANDARD TECHNICAL SPECIFICATION (ISTS) CONVERSION

CHAPTER 3.4 - REACTOR COOLANT SYSTEM

PART 10

ISTS GENERIC CHANGES

(TSTFs 26, 61)

TSTF-26

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.2 RCS Minimum Temperature for Criticality

LCO 3.4.2 Each RCS loop average temperature (T_{avg}) shall be ≥ [541]°F.

APPLICABILITY: MODE 1,
MODE 2 with $k_{eff} \geq 1.0$.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. T_{avg} in one or more RCS loops not within limit.	A.1 Be in MODE ~~3~~ 2 with $k_{eff} < 1.0$.	30 minutes

BASES

APPLICABILITY (continued)

temperatures to fall below the temperature limit of this LCO.

ACTIONS

A.1

TSTF-26

If the parameters that are outside the limit cannot be restored, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to MODE 3 2 with $K_{eff} < 1.0$ within 30 minutes. Rapid reactor shutdown can be readily and practically achieved within a 30 minute period. The allowed time is reasonable, based on operating experience, to reach MODE 3 in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.4.2.1

RCS loop average temperature is required to be verified at or above [541]°F every 30 minutes when [T_{avg}-T_{ref} deviation, low low T_{avg}] alarm not reset and any RCS loop T_{avg} < [547]°F.

The Note modifies the SR. When any RCS loop average temperature is < [547]°F and the [T_{avg} - T_{ref} deviation, low low T_{avg}] alarm is alarming, RCS loop average temperatures could fall below the LCO requirement without additional warning. The SR to verify RCS loop average temperatures every 30 minutes is frequent enough to prevent the inadvertent violation of the LCO.

REFERENCES

1. FSAR, Section [15.0.3].

Industry/TSTF Standard Technical Specification Change Traveler

Added statement clarifying the intent of the RCS water inventory balance surveillance

NUREGs Affected: ☒ 1430 ☒ 1431 ☒ 1432 ☐ 1433 ☐ 1434

Description:

The RCS operational leakage surveillance was revised to clarify the intent of the surveillance.

Justification:

Clarification of the intent of the water inventory balance surveillance was added. This change clarifies the intent of the surveillance and makes it consistent with the wording of the other surveillance in the Specification and with other Surveillances in the NUREG.

Affected Technical Specifications

SR 3.4.13.1 RCS Operational Leakage

CEOG Review Information

CEOG-13

Originating Plant: Calvert Cliffs Date Provided to OG: 17-Jan-96 Needed By: 01-Sep-96

Owners Group History:

Owners Group Resolution: Approved Date: 24-Jan-96

TSTF Review Information

TSTF Received Date: 05-Mar-96 Date Distributed to OGs for Review: 07-Mar-96

OG Review Completed: ☒ BWOG ☒ WOG ☒ CEOG ☒ BWROG

TSTF History:

TSTF Resolution: Approved Date: 16-Apr-96 **TSTF- 61**

NRC Review Information

NRC Received Date: NRC Reviewer: Reviewer Phone #:

Reviewer Comments:

Final Resolution: Final Resolution Date:

Revision History

Incorporation Into the NUREGs

File to BBS/LAN Date:

File to TSTF Date:

File Rev Incoporated:

File Rev Incorporated Date

TSTF-61

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.13.1	-------------------NOTE------------------- Not required to be performed in MODE 3 or 4 until 12 hours of steady state operation. -- Perform RCS water inventory balance.	-----NOTE------ Only required to be performed during steady state operation --------------- 72 hours
SR 3.4.13.2	Verify steam generator tube integrity is in accordance with the Steam Generator Tube Surveillance Program.	In accordance with the Steam Generator Tube Surveillance Program

Verify RCS Operational leakage is within limits by performance of

SUPPLEMENT 1
CONVERSION PACKAGE SECTION 3.5
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 13 to Serial: RNP-RA/96-0141.

	Remove Page	Insert Page
a.	Part 1, "Markup of Current Technical Specifications (CTS)"	
	No Changes	
b.	Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
	3 through 6	3 through 6
	-	6a, 6b, 6c
c.	Part 3, "No Significant Hazards Consideration (NSHC), And Basis For Categorical Exclusion From 10 CFR 51.22"	
	No Changes	
d.	Part 4, "Markup of NUREG-1431, Revision 1, `Standard Technical Specifications - Westinghouse Plants,' (ISTS)"	
	No Changes	
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	No Changes	
f.	Part 6, "Markup of ISTS Bases"	
	No Changes	
g.	Part 7, "Justification for Differences (JFDs) to ISTS Bases"	
	No Changes	
h.	Part 8, "Proposed HBRSEP, Unit No. 2 ITS"	
	No Changes	
i.	Part 9, "Proposed Bases to HBRSEP, Unit No. 2 ITS"	
	No Changes	
j.	Part 10, "ISTS Generic Changes"	
	No Changes	

requirements for ECCS in MODES 1, 2, 3 and 4. Therefore, this is an administrative change and is consistent with ISTS.

A14 CTS 3.3.1.2.f permits power to be restored to one accumulator valve specified in 3.3.1.1.g for up to four hours for the purpose of testing or maintenance. This allowance is not explicitly retained in the ITS. Restoring power to a valve renders the associated accumulator inoperable in accordance with the definition of OPERABLE. ITS 3.5.1 Required Action (RA) B.1 permits one accumulator to be inoperable for reasons other than boron concentration out of limits for four hours. Therefore, this is an administrative change and is consistent with ISTS.

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 CTS 3.3.1.1 requires the accumulators be OPERABLE whenever the reactor is critical. ITS 3.5.1 is applicable in MODES 1, 2 and MODE 3 with pressurizer pressure greater 1000 psig. In MODES 1 and 2, and in MODE 3 with RCS pressure > 1000 psig, the accumulator OPERABILITY requirements are based on full power operation. Although cooling requirements decrease as power decreases, the accumulators provide core cooling as long as elevated RCS pressures are greater than 1000 psig and temperatures exist. This change is an additional restriction on plant operation and is consistent with NUREG-1431.

M2 CTS 3.3.1.1.g specifies the requirement that motor operated valves (MOV) 865A, B and C have their power removed with the valves in the specified (open) position but does not require a periodic verification. ITS SR 3.5.1.1 requires a verification of valve position once prior to removing power from the valve. This verification ensures that the accumulators are available for injection. If an isolation valve is not fully open, the rate of injection to the RCS would be reduced. Although a motor operated valve position should not change with power removed, a closed valve could result in not meeting accident analyses assumptions. This Frequency is considered reasonable in view of other administrative controls that ensure a mispositioned isolation valve is unlikely. SR 3.5.1.5 requires verifying that power is removed every 31 days. Verification every 31 days that control power is removed from each accumulator isolation valve operator ensures that an active failure could not result in the undetected closure of an accumulator motor operated isolation valve. If this were to occur, only one accumulator would be available for injection given a single failure coincident with a LOCA. Since power is removed under administrative control, the 31 day Frequency provides adequate assurance that power is removed. These changes are additional restrictions on plant operation and are consistent with NUREG-1431.

M3 CTS 3.3.1.1.b specifies the requirements for a minimum accumulator cover

pressure and contained borated water volume but does not require a periodic verification. ITS SR 3.5.1.2 and SR 3.5.1.3 require a verification of these parameters every 12 hours. This Frequency is sufficient to ensure adequate injection during a LOCA. Because of the static design of the accumulator, a 12 hour Frequency usually allows the operator to identify changes before limits are reached. Operating experience has shown this Frequency to be appropriate for early detection and correction of off normal trends. These changes are an additional restriction on plant operation and are consistent with NUREG-1431.

M4 With one accumulator inoperable for greater than four hours, CTS 3.3.1.2 requires the unit be placed in hot shutdown but does not explicitly specify a time period. ITS 3.5.1 RA C.1 requires the unit be placed in MODE 3 within six hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. This change is an additional restriction on plant operation and is consistent with NUREG-1431.

M5 Although CTS 3.3.1.2 specifies the unit be placed in cold shutdown after achieving hot shutdown, this requirement is not applicable. Once the applicability of specification 3.3.1.1 (reactor critical) is exited, no further action is required. ITS 3.5.1 RA C.2 requires depressurization to ≤ 1000 psig consistent with the increased overall applicability of specification 3.5.1 (see DOC M1). Although cooling requirements decrease as power decreases, the accumulators provide core cooling as long as elevated RCS pressures are greater than 1000 psig and temperatures exist. This change is an additional restriction on plant operation and is consistent with NUREG-1431.

M6 Not used.

M7 With two or more accumulators inoperable, CTS 3.0 requires the plant to be placed in hot shutdown within 8 hours. ITS 3.5.1 RA D.1 requires an immediate entry into LCO 3.0.3. ITS LCO 3.0.3 requires the plant be in MODE 3 within 7 hours. If more than one accumulator is inoperable, the plant is in a condition outside the accident analyses; therefore, LCO 3.0.3 must be entered immediately. This change is an additional restriction on plant operation and is consistent with NUREG-1431.

M8 CTS Table 4.1.2, Item 6 requires a sample of accumulator boron concentration every month. ITS SR 3.5.1.4 requires the surveillance to be performed monthly and once within six hours after a solution volume increase of ≥ 70 gallons that is not from the RWST. Sampling the affected accumulator within 6 hours after a ≥ 70 gallon volume increase will identify whether in leakage has caused a reduction in boron concentration. The 70 gallon volume increase and time limit of 6 hours

is based on preventing a reduction in boron concentration in an accumulator below 1950 ppm with an initial boron concentration of 2000 ppm assuming in-leakage of 70 gallons pure water at a maximum in-leakage rate of 0.2 gpm. This event specific surveillance requirement is an additional restriction on plant operation and is consistent with NUREG-1431.

M9 CTS Table 4.1.2, Item 6 requires sampling of boron concentration. CTS 3.3.1.1.b specifies the lower limit on boron concentration but does not include an upper limit. ITS SR 3.5.1.4 requires verification that boron concentration is above the lower limit and below the upper limit. The maximum boron concentration is important since it is an assumption used in determining the cold leg to hot leg recirculation injection switch over time and minimum sump pH. This change is an additional restriction on plant operation and is consistent with NUREG-1431.

M10 CTS Table 4.1.2, Item 6 permits a maximum time between tests of 45 days. ITS SR 3.5.1.4 has a maximum interval of ≈ 39 days (monthly x 1.25). The 31 day Frequency is adequate to identify changes that could occur from mechanisms such as stratification or in leakage. The slight reduction in maximum surveillance interval does not impose a significant impact upon HBR operation. This change is an additional restriction on plant operation and is consistent with NUREG-1431.

M11 CTS does not include a surveillance comparable to ITS SR 3.5.2.6 (required on MODES 1, 2 and 3). Additionally, ITS SR 3.5.3.1 requires performance of ITS SR 3.5.2.6 in MODE 4. Periodic inspections of the containment sump suction inlet ensure that it is unrestricted and stays in proper operating condition. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage, on the need to have access to the location, and because of the potential for an unplanned transient if the Surveillance were performed with the reactor at power. This Frequency has been found to be sufficient to detect abnormal degradation and is confirmed by operating experience. These changes are additional restrictions on plant operation and are consistent with NUREG-1431.

M12 CTS does not include a surveillance comparable to ITS 3.5.2.7. Verification of proper valve position ensures the proper flow path is established for the LHSI system following operation in RHR mode. The Frequency of 31 days is commensurate with the accessibility and radiation levels involved in performing the surveillance. This change is an additional restriction on plant operation and is consistent with NUREG-1431.

M13 CTS 4.5.1.1 requires performance of the safety injection tests at each reactor refueling interval. CTS does not explicitly limit the refueling interval to a finite time period. ITS SR 3.5.2.4 requires performance

at an 18 month interval. The 18 month Frequency is based on the need to perform these Surveillances under the conditions that apply during a plant outage and the potential for unplanned plant transients if the Surveillances were performed with the reactor at power. The 18 month Frequency is also acceptable based on consideration of the design reliability (and confirming operating experience) of the equipment. This change is an additional restriction on plant operation and is consistent with NUREG-1431.

M14 CTS 4.5.1.2 requires the Safety Injection System tests verify the pump breakers close. ITS SR 3.5.2.5 requires verification the pumps start. Verification of pump starting is important to properly test the train. This change is an additional restriction on plant operation and is consistent with NUREG-1431.

M15 Although CTS 4.5.2.1 does not include MOVs SI-878A and SI-878B in the periodic surveillance requirement, these valves are required to be in the position specified in CTS 3.3.1.1.g with AC control power removed. These valves are included in ITS SR 3.5.2.1, since these valves are similarly required to be de-energized in the specified position for the ECCS trains to be OPERABLE. This change is an additional restriction on plant operation and is consistent with NUREG-1431.

M16 During power operation, CTS 4.5.2.2 requires verification that the specified valves are correctly positioned. ITS SR 3.5.2.2 is required to be performed consistent with the applicability for LCO 3.5.2. LCO 3.5.2 is applicable in MODES 1, 2 and 3. Additionally ITS SR 3.5.3.1 requires performance of SR 3.5.2.2 in MODE 4. Consistent with NUREG-1431 construction, SRs are generally required to be performed whenever the associated equipment is required to be OPERABLE. In MODES 1, 2, and 3, the ECCS OPERABILITY requirements for the limiting Design Basis Accident, a large break LOCA, are based on full power operation. Although reduced power would not require the same level of performance, the accident analysis does not provide for reduced cooling requirements in the lower MODES. The SI pump performance requirements are based on a small break LOCA. These change are additional restrictions on plant operation and are consistent with NUREG-1431.

M17 CTS actions comparable to ITS 3.5.3 RA B.1 and RA C.1 do not exist. With less than one ECCS train OPERABLE, entry into CTS 3.0 is required which requires the unit be placed in Cold Shutdown within 30 hours. With the required ECCS high head subsystem inoperable, ITS 3.5.3 RA B.1 requires restoring one subsystem to OPERABLE status within one hour. With no ECCS high head subsystem OPERABLE, due to the inoperability of the safety injection train or flow path from the RWST, the plant is not prepared to provide high pressure response to Design Basis Events requiring SI. The 1 hour Completion Time to restore at least one ECCS high head subsystem to OPERABLE status ensures that prompt action is

taken to provide the required cooling capacity or to initiate actions to place the plant in MODE 5, where an ECCS train is not required. If the RA and associated completion time of RA B.1 are not met, ITS 3.5.3 RA C.1 requires the unit be placed in MODE 5 within 24 hours. When the Required Actions of Condition B cannot be completed within the required Completion Time, a controlled shutdown must be initiated to place the Unit in a Condition outside the Applicability for the Specification . Twenty-four hours is a reasonable time, based on operating experience, to reach MODE 5 in an orderly manner and without challenging plant systems or operators. These change are an additional restriction on plant operation and are consistent with NUREG-1431.

M18 With the RWST not within limits, CTS required action is specified in 3.0. CTS 3.0 requires achieving hot shutdown within eight hours, followed by cold shutdown within an additional 30 hours. ITS 3.5.4 RA B.1 requires restoring RWST to OPERABLE status within one hour. In this Condition, neither the ECCS nor the Containment Spray System can perform its design function. Therefore, prompt action must be taken to restore the tank to OPERABLE status or to place the plant in a MODE in which the RWST is not required. The short time limit of 1 hour to restore the RWST to OPERABLE status is based on this condition simultaneously affecting redundant trains. With required action and associated completion time not met, ITS RA C.1 and C.2 requires achieving MODE 3 within 6 hours, and MODE 5 within 36 hours. If the RWST cannot be returned to OPERABLE status within the associated Completion Time, the plant must be brought to a MODE in which the LCO does not apply. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. This change is an additional restriction on plant operation and is consistent with NUREG-1431.

M19 A CTS surveillance requirement comparable to ITS SR 3.5.4.1 does not exist nor does CTS include limits on RWST temperature. ITS SR 3.5.4.1 requires periodic verification that the RWST is within specified temperature limits. The RWST borated water temperature is verified every 24 hours to be within the limits assumed in the accident analyses band. This Frequency is sufficient to identify a temperature change that would approach either limit and is acceptable based on operating experience. ITS 3.5.4 Condition A with the associated Required Action and Completion time impose restrictions on operation with the RWST outside the specified limits. With RWST boron concentration or borated water temperature not within limits, they must be returned to within limits within 8 hours. Under these conditions neither the ECCS nor the Containment Spray System can perform its design function. Therefore, prompt action must be taken to restore the tank to OPERABLE condition. The 8 hour limit to restore the RWST temperature or boron concentration to within limits considers the time required to change either the boron

concentration or temperature and the fact that the contents of the tank are still available for injection.

CTS 3.3.1.1.a specifies the requirements for RWST contained borated water volume but does not require a periodic verification. ITS SR 3.5.4.2 requires a verification of this parameter every 7 days. The RWST water volume should be verified every 7 days to be above the required minimum level in order to ensure that a sufficient initial supply is available for injection and to support continued ECCS and Containment Spray System pump operation on recirculation. Since the RWST volume is normally stable and is protected by an alarm, a 7 day Frequency is appropriate and is acceptable based upon operating experience. These changes are additional restrictions on plant operation and are consistent with NUREG-1431.

M20 CTS Table 4.1.2, Item 3 permits a maximum interval between test of 10 days. ITS SR 3.5.4.3 has a maximum interval of ≈ 9 days (7 days x 1.25). The ITS maximum SR interval is not a significant impact on plant operations and reflects a consistent approach to maximum SR intervals. This change is an additional restriction on plant operation and is consistent with NUREG-1431.

M21 CTS does not currently place a requirement on the maximum boron concentration in the RWST. ITS SR 3.5.4.3 imposes an upper limit. The RWST upper limit assures that the resulting sump pH will be maintained in an acceptable range so that boron precipitation in the core will not occur and the effect of chloride and caustic stress corrosion on mechanical systems and components will be minimized. This change is an additional restriction on plant operation and is consistent with NUREG-1431.

M22 CTS 3.3.1.1.g requires that control power be removed from the specified valves at > 1000 psig. CTS 3.3.1.1.h requires that air be removed from the specified valves at > 1000 psig. ITS SR 3.5.2.1 and ITS SR 3.5.2.7 require motive power be removed from the valves in MODES 1, 2 and 3. Although not directly comparable, the CTS specified applicability of > 1000 psig normally occurs significantly above the MODE 3 lower temperature limits. Consistent with NUREG-1431 construction, SRs are generally applicable when the Specification is applicable. In MODES 1, 2, and 3, the ECCS OPERABILITY requirements for the limiting Design Basis Accident, a large break LOCA, are based on full power operation. Although reduced power would not require the same level of performance, the accident analysis does not provide for reduced cooling requirements in the lower MODES. The SI pump performance requirements are based on a small break LOCA. MODE 2 and MODE 3 requirements are bounded by the MODE 1 analysis. These changes are additional restrictions on plant operation and are consistent with NUREG-1431.

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA1 CTS 3.3.1.2.e explicitly excludes the SI hot leg pathways and valves from the requirements of the specification. This detail regarding applicability of the specification is relocated to the ITS bases.

The details associated with the involved Specifications are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains the requirement for OPERABILITY of the ECCS. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and utility resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 During Power Operation CTS 3.3.1.2 permits one accumulator to be isolated or otherwise inoperable for up to four hours. ITS 3.5.1 RA A.1 permits one accumulator to be inoperable for boron concentration out of limits for 72 hours. Therefore, this is a less restrictive change and

SUPPLEMENT 1
CONVERSION PACKAGE SECTION 3.7
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 15 to Serial: RNP-RA/96-0141.

	Remove Page	Insert Page
a.	Part 1, "Markup of Current Technical Specifications (CTS)"	
	4.1-12, 4.1-15, 4.8-1, 4.1-12 4.15-2, 3.8-3, 5.4-1	4.1-12, 4.1-15, 4.8-1, 4.1-12, 4.15-2 3.8-3, 5.4-1
b.	Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
	6 through 21	6 through 30
c.	Part 3, "No Significant Hazards Consideration (NSHC), And Basis For Categorical Exclusion From 10 CFR 51.22"	
	22	22 and 23
d.	Part 4, "Markup of NUREG-1431, Revision 1, `Standard Technical Specifications - Westinghouse Plants,' (ISTS)"	
	3.7-16, 3.7-21, 3.7-22	3.7-16, 3.7-21, 3.7-22
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	3 and 4	3 and 4
f.	Part 6, "Markup of ISTS Bases"	
	B 3.7-34, B 3.7-49, B 3.7-52 B 3.7-58	B 3.7-34, B 3.7-35a, B 3.7-41a, B 3.7-49, B 3.7-52, B 3.7-52a, B 3.7-58
g.	Part 7, "Justification for Differences (JFDs) to ISTS Bases"	
	1	1
h.	Part 8, "Proposed HBRSEP, Unit No. 2 ITS"	
	3.7-14	3.7-14
i.	Part 9, "Proposed Bases to HBRSEP, Unit No. 2 ITS"	
	B 3.7-33, B 3.7-34, 3.7-40, B 3.7-50, B 3.7-53	B 3.7-33, B 3.7-34, 3.7-40, B 3.7-50, B 3.7-53
j.	Part 10, "ISTS Generic Changes"	
	No Changes	

Specification 3.7.1

A1

TABLE 4.1-3

FREQUENCIES FOR EQUIPMENT TESTS

ITS

		Check	Frequency	Maximum Time Between Tests
1.	Control Rods	Rod drop times of all full length rods	Each refueling shutdown	NA*
2.	Control Rod	Partial movement of all full length rods	Every 2 weeks during reactor critical operations	20 days
3.	Pressurizer Safety Valves	Set point	Each refueling shutdown	NA
4.	Main Steam Safety Valves	Verify each required MSSV lift setpoint per Table 4.1-4 in accordance with the Inservice Testing Program. Following testing, lift setting shall be within +/- 1%.	In accordance with the Inservice Testing Program	NA
5.	Containment Isolation Trip	Functioning	Each refueling shutdown	NA
6.	Refueling System Interlocks	Functioning	Prior to each refueling shutdown	NA
7.	Service Water System	Functioning	Each refueling shutdown	NA
8.	DELETED			
9.	Primary System Leakage	Evaluate	Daily when reactor coolant system is above cold shutdown condition	NA
10.	Diesel Fuel Supply	Fuel Inventory	Weekly	10 days
11.	DELETED			
12.	Turbine Steam Stop, Control, Reheat Stop and Interceptor Valves	Closure	Quarterly during power operation and prior to startup	115 days

See 3.1.4

See 3.4.10

[SR 3.7.1.1]

3.7.1-2

Add SR 3.7.1.1 "Note"

A28

See 3.3.2, 3.6.3

See 3.9.1

See 3.7.7

See 3.4.13

See 3.8.3

LA1

Supplement 1

Specification 3.7.1

(A1)

ITS

Table 4.1-4
Main Steam Safety Valve Lift Settings

VALVE NUMBER STEAM GENERATOR A	B	C	LIFT SETTING (psig ± 3%)
SV1-1A	SV1-1B	SV1-1C	1085
SV1-2A	SV1-2B	SV1-2C	1110
SV1-3A	SV1-3B	SV1-3C	1125
SV1-4A	SV1-4B	SV1-4C	1140

[T 3.7.1-2]

Supplement 1

ITS (A1)

4.8 AUXILIARY FEEDWATER SYSTEM

Applicability

Applies to periodic testing requirements of the turbine-driven and motor-driven auxiliary feedwater pumps.

Objective

To verify the operability of the auxiliary feedwater system and its ability to respond properly when required.

Specification

31 days on a STAGGERED TEST BASIS (L6) (L20)

[SR 3.7.4.2] 4.8.1 Each motor driven auxiliary feedwater pump will be started at monthly intervals, run for 15 minutes, and determined that it is operable developed head ≥ req'd head. (M11)

[SR 3.7.4.2] 4.8.2 The steam turbine driven auxiliary feedwater pump by using motor operated steam admission valves will be started at monthly intervals, run for 15 minutes, and determined that it is operable when the reactor coolant system is above the cold shutdown condition. When periods of reactor cold shutdown extend this interval beyond one month, the test shall be performed within 24 hours of achieving stable plant conditions at ≥1000 psig in the steam generator following plant heatup. (L20) (A11)

[SR 3.7.4.2 NOTE]

[SR 3.7.4.3] 4.8.3 The auxiliary feedwater automatic pumps discharge valves that are not locked, sealed, or otherwise secured in position (M12) will be tested by operator action actual or simulated actuation signal (A13) at monthly 18 intervals. (M12) (L7)

4.8.4 These tests shall be considered satisfactory if control board indication and subsequent visual observation of the equipment demonstrate that all components have operated properly. (A12)

Add SR 3.7.4.1
SR 3.7.4.4
SR 3.7.4.5
SR 3.7.4.6
(M13)

Specification 3.7.7 (A1)

ITS

TABLE 4.1-3

FREQUENCIES FOR EQUIPMENT TESTS

		Check	Frequency	Maximum Time Between Tests	
1.	Control Rods	Rod drop times of all full length rods	Each refueling shutdown	NA*	See 3.1.4
2.	Control Rod	Partial movement of all full length rods	Every 2 weeks during reactor critical operations	20 days	
3.	Pressurizer Safety Valves	Set point	Each refueling shutdown	NA	See 3.4.10
4.	Main Steam Safety Valves	Verify each required MSSV lift setpoint per Table 4.1-4 in accordance with the Inservice Testing Program. Following testing, lift setting shall be within +/- 1%.	In accordance with the Inservice Testing Program	NA	See 3.7.1
5.	Containment Isolation Trip	Functioning	Each refueling shutdown	NA	See 3.3.2 3.6.3
6.	Refueling System Interlocks	Functioning	Prior to each refueling shutdown	NA	See 3.9.1
7. [SR 3.7.7.3]	Service Water System	Functioning	~~Each refueling shutdown~~ 18 Months	~~NA~~	
~~8.~~	~~DELETED~~				
9.	Primary System Leakage	Evaluate	Daily when reactor coolant system is above cold shutdown condition	NA	See 3.4.13
10.	Diesel Fuel Supply	Fuel Inventory	Weekly	10 days	See 3.8.3
~~11.~~	~~DELETED~~				
12.	Turbine Steam Stop, Control, Reheat Stop, and Interceptor Valves	Closure	Quarterly during power operation and prior to startup	115 days	See 3.7.1

Specification 3.7.10

A1

ITS

2. Verifying, within 31 days of removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, by showing a methyl iodide penetration of less than 1% when tested at a temperature of 30 degree C and at a relative humidity of 70% in accordance with ASTM D3803.

See 5.5.11

e. After every 720 hours of carbon adsorber operation, by verifying with 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, by showing a methyl iodide penetration of less than 1% when tested at a temperature of 30 degrees C and at a relative humidity of 70% in accordance with ASTM D3803.

[SR 3.7.10.1] f. At least once per 18 months by:

1. Verifying the following for the air cleaning unit:

   a. The overall different pressure is less than or equal to 3.4 inches water gauge,

   b. Air flow through the unit is greater than or equal to 3300 ACFM and less than or equal to 4150 ACFM and

See 5.5

[SR 3.7.10.1] 2. Verifying the following for the air handling unit:

   ~~a. Air flow through the unit is greater than or equal to 5200 ACFM and less than or equal to 5800 ACFM.~~

3. Verifying that, on either a safety injection test signal or a high radiation test signal, the system automatically switches into the emergency pressurization operating mode with flow through the HEPA filters and carbon adsorber bank;

See 3.7.9

4. Verifying that the system maintains the Control Room at a positive pressure relative to the outside atmosphere at less than or equal to a pressurization rate of 400 ACFM during the emergency pressurization operating mode;

Each CREATC WCCU train has the capability to remove the assumed heat load

M32

 Amendment No. ~~78~~, 134

Supplement 1

ITS

(A1)

j. If any of the specified limiting conditions for refueling are not met, refueling of the reactor shall cease; work shall be initiated to correct the conditions so that the specified limits are met; and no operations which may increase the reactivity of the core shall be made.

k. The reactor shall be subcritical as required by 3.10.8.3.

See 3.9.1, 3.9.2, 3.9.3, 3.9.4, 3.9.6

3.8.2 The Spent Fuel Building Filter system and the Containment Purge filter system shall satisfy the following conditions:

a. The results of the in-place cold DOP and halogenated hydrocarbon tests at greater than 20 percent design flows on HEPA filters and charcoal absorber banks shall show ≥ 99 percent DOP removal and ≥ 99 percent halogenated hydrocarbon removal.

b. Verification by way of laboratory carbon sample analysis from the Spent Fuel Building filter system carbon and the Containment Purge filter system carbon to show ≥ 90 percent radioactive methyl iodide removal in accordance with test 5.b of Table 5-1 of ANSI/ASME N509-1976 except that ≥ 70 percent relative humidity air is required.

See 5.5.11

c. 1. The Spent Fuel Building refueling filter fan shall be shown to operate within ± 10% of the design flow.

2. At least one Containment purge filter fan shall be shown to operate within ± 10% of the design flow and must be operable during core alterations or movement of irradiated fuel assemblies, or at least one automatic containment isolation valve in each line penetrating the containment which provides a direct path from the containment atmosphere to the outside atmosphere shall be securely closed.

See 3.9.3

d. During fuel handling operations, the relative humidity (R.H.) of the air processed by the refueling filter systems shall be ≤ 70 percent.

See 5.5.11

[ACTION A] e. From and after the date that the Spent Fuel Building filter system is made or found to be inoperable for any reason, fuel handling operations in the Spent Fuel Building shall be terminated immediately.

(L19) movement of irradiated fuel assemblies

Add SR 3.7.11.1
SR 3.7.11.2
SR 3.7.11.3 (M33)

Add Specification 3.7.12 (M34)

ITS

Specification 3.7.14

A1

5.4 FUEL STORAGE

5.4.1 SPENT FUEL PIT

The new and spent fuel pit structures are designed to withstand the anticipated earthquake loadings as Class I structures. The spent fuel pit has a stainless steel liner to ensure against loss of water.[1]

5.4.2 CRITICALITY

5.4.2.1 NEW FUEL STORAGE RACKS

See 4.3.1

Due to the new fuel storage rack design, a nominal 21-inch center-to-center distance is maintained between fuel assemblies. To permit storage of fuel with a maximum assembly axial plane enrichment of 4.95 + 0.05 (nominal 4.95) weight percent U-235, additional separation is maintained by use of the storage rack secured location restrictions below[2] in order to establish a geometry which ensures that k_{eff} is less than 0.95 assuming that new fuel storage racks are flooded with unborated water and which assures that k_{eff} is less than 0.98 in an optimum moderation event.

[T 3.7.14-1]

The secured location restrictions provide fuel storage locations which are secured to prevent fuel storage in those locations.

Secured Location Restrictions:

C4,5,6,7,8,9 / D4,5,8,9 / E4,5,8,9 / F1,4,5,8,9 / G1,4,5,8,9 H1,4,5,6,7,8,9 / J1 / K1

LA6

Add LCO 3.7.14
Applicability
Action A
SR 3.7.14.1

M37

Amendment No. 81,112,125,156

Supplement 1

A26 CTS Specification 3.8.1.i requires that the Spent Fuel Building ventilation system be operating when handling irradiated fuel in the area. The CTS also requires that prior to moving irradiated fuel assemblies in the spent fuel pool, the ventilation system exhaust shall be aligned to discharge through High Efficiency Particulate Air (HEPA) and impregnated charcoal filters. This requirement is retained in ITS Specification 3.7.11 to require that the Fuel Building Air Cleanup System be OPERABLE and operating. The requirement that the ventilation system exhaust be aligned to discharge through HEPA and impregnated charcoal filters as stated in CTS is encompassed by the ITS definition of OPERABLE-OPERABILITY and is not separately detailed in ITS. Since this change neither adds nor removes requirements, it is administrative and has no adverse impact on safety.

A27 CTS Specification 5.4.3 requires that the spent fuel storage pit be filled with borated water at a concentration ≥ 1500 ppm during refueling operations or new fuel movement in the spent fuel storage pit. The applicability of this requirement is retained in ITS Specification 3.7.13 as during new and spent fuel movement activities in the fuel storage pool. Since the change from "refueling operations" to "spent fuel movement" neither adds nor removes requirements, it is administrative and has no adverse impact on safety.

A28 CTS Table 4.1-3, Item 4, MSSV surveillance, is revised to permit entry into and operation in MODE 3 prior to performing the ITS SR 3.7.1.1 MSSV lift setpoint verification. When Code safety valves are tested in situ at hot conditions, they are tested at no flow conditions, which is readily accomplished in MODE 3. The HBRSEP, Unit No. 2 Inservice Surveillance Testing program implementing procedures currently allow verification of MSSV lift setpoints in conditions equivalent to ITS MODES 1, 2 and 3. As a result, the Note to ITS SR 3.7.1.1 is consistent with plant practice. Since the CTS is silent with regard to in situ testing, this change provides clarification, and is therefore administrative and has no adverse impact on safety.

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 CTS Specification 3.4.3 has Applicability for Required Actions during "power operations" in lieu of the CTS Specification 3.4.1 Applicability of "reactor coolant temperature greater than 350°F." ITS Specifications 3.7.1 and 3.7.2 have Applicability of MODES 1, 2, and 3, which covers a broader operational band. MSSVs are needed for SG overpressure protection in MODES 1, 2 and 3. In MODES 4 and 5, there are no credible transients requiring the MSSVs. The steam generators are not normally used for heat removal in MODES 5 and 6, and thus cannot be overpressurized; there is no requirement for the MSSVs to be OPERABLE in these MODES. This change is more restrictive, and has no adverse impact on safety.

M2 CTS Specification 3.4.3 requires that, if the Specification cannot be met within 24 hours, the operator initiate procedures to place the unit in the hot shutdown condition, and if the Specification cannot be met in an additional 48 hours, the reactor be cooled to below 350°F. ITS Specification 3.7.1 requires that, if the Specification cannot be met in 4 hours, the unit be placed in MODE 3 in 6 hours, and in MODE 4 in 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. This change is more restrictive, and has no adverse impact on safety.

M3 CTS Specification 3.4.3 is revised to adopt the ISTS 3.7.1 Condition B, where in the event one or more SGs have less than 2 MSSVs OPERABLE, the unit must be placed in MODE 3 in 6 hours and in MODE 4 in 12 hours. If the MSSVs cannot be restored to OPERABLE status within the associated Completion Time, or if one or more steam generators have less than two MSSVs OPERABLE, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M4 CTS Specification 3.4.3 requires that the LCO be met for all MODES within 24 hours, or the plant be put in the hot shutdown condition, and that if the LCO cannot be met in an additional 48 hours, the reactor be cooled to below 350°F. ITS Specification 3.7.2 Action A requires that for one MSIV inoperable in MODE 1 the LCO must be satisfied within 24 hours or Action B requires the plant must be placed in MODE 2 in 6 hours. If the MSIV cannot be restored to OPERABLE status within 24 hours, the unit must be placed in a MODE in which the LCO does not

apply. To achieve this status, the unit must be placed in MODE 2 within 6 hours and Condition C would be entered. The Completion Times are reasonable, based on operating experience, to reach MODE 2 and to close the MSIVs in an orderly manner and without challenging unit systems. For MODES 2 or 3, ITS Specification 3.7.2 Action C requires for one or more MSIVs inoperable, the MSIVs must be closed (LCO satisfied) within 8 hours and verified closed once per 7 days. Since the MSIVs are required to be OPERABLE in MODES 2 and 3, the inoperable MSIVs may either be restored to OPERABLE status or closed. When closed, the MSIVs are already in the position required by the assumptions in the safety analysis. The 8 hour Completion Time is reasonable, considering the low probability of an accident occurring during this time period that would require a closure of the MSIVs. A Note is added to ITS 3.7.2 Condition C ("Separate Condition entry is allowed for each MSIV") and provides explicit instructions for proper application of ACTIONS for ITS compliance. This Note is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable MSIV. Complying with the Required Actions may allow for continued operation in the Applicability, and subsequent inoperable MSIVs are governed by subsequent Condition entry and application of associated Required Actions. Action D further states that if Action C cannot be met (LCO not satisfied), the plant must be placed in MODE 3 in 6 hours, and MODE 4 in 12 hours. If the MSIVs cannot be restored to OPERABLE status or are not closed within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed at least in MODE 3 within 6 hours, and in MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from MODE 2 conditions in an orderly manner and without challenging unit systems. This change imposes more restrictive requirements and has no adverse impact on safety.

M5 The CTS is revised to adopt ITS Specification 3.7.3. This Specification imposes Limiting Conditions for Operation and Surveillance Requirements for Main Feedwater System valves, which currently do not exist. The design basis of the MFIVs and MFRVs is established by the analyses for the large SLB. It is also influenced by the accident analysis for the large FWLB. Closure of the MFIVs or MFRVs, and bypass valves, is relied on to terminate an SLB for core response analysis and excess feedwater event upon the receipt of a safety injection signal.

Failure of an MFIV, MFRV, or bypass valve to close following an SLB or FWLB can result in additional mass and energy being delivered to the steam generators, contributing to cooldown. This failure also results in additional mass and energy releases following an SLB or FWLB event. This change imposes new requirements, which is more restrictive and has no adverse impact on safety.

M6 CTS Specification 3.4.1 requires that the reactor coolant not be heated above 350°F unless the AFW pumps are operable. ITS Specification 3.7.4 has Applicability of MODES 1, 2, and 3, and MODE 4 when SGs are being used for heat removal. Additionally, an LCO Note is adopted which requires only one AFW flow path and pump to be operable in MODE 4. In MODE 4 the AFW System may need to be used for heat removal via the steam generators. The SGs must be OPERABLE to use the AFW pumps for heat removal. Since this change adds the requirement for one pump and flow path to be OPERABLE in MODE 4 when SGs are being used for heat removal, it is more restrictive and has no adverse impact on safety.

M7 CTS Specification 3.4.4 requires that an inoperable AFW pump be restored to OPERABLE status within 7 days. CTS Specification 3.4.5 requires that at least one of two inoperable AFW pumps be restored to OPERABLE status within 24 hours. ITS Specification 3.7.4 Conditions A and B add a second Completion Time of 8 days from discovery of failure to meet the LCO to the allowed outage times. 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 8 day Completion Time provides a limitation time allowed in this specified Condition after discovery of failure to meet the LCO. This limit is considered reasonable for situations in which Conditions A and B are entered concurrently. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M8 CTS Specification 3.4.4.b requires that, with one AFW pump inoperable, all three AFW pumps to be returned to OPERABLE status within the allowed outage time, or the reactor be placed in hot shutdown within 6 hours. ITS Specification 3.7.4 Required Actions C.1 and C.2 require that, if the inoperable components are not returned to OPERABLE status within the allowed outage time, the reactor be placed in MODE 3 in 6 hours and in MODE 4 in 18 hours. When Required Action A.1 or B.1 cannot be completed within the required Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4 within 18 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. This change imposes more restrictive requirements and has no adverse impact on safety.

M9 CTS Specification 3.4.5 requires that, with two AFW pumps inoperable, at least one AFW pump be returned to OPERABLE status within the allowed outage time, or the reactor be placed in hot shutdown within 6 hours. ITS Specification 3.7.4 Required Actions C.1 and C.2 require that, if the inoperable components are not returned to OPERABLE status within the

allowed outage time, the reactor be placed in MODE 3 in 6 hours and in MODE 4 in 18 hours. When Required Action A.1 or B.1 cannot be completed within the required Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4 within 18 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. This change imposes more restrictive requirements and has no adverse impact on safety.

M10 CTS Specification 3.4.5 is revised in ITS 3.7.4 Required Action B to add the condition, "... OR three motor driven AFW flow paths inoperable in MODE 1, 2, or 3." With two motor driven AFW pumps inoperable or three motor driven AFW flow paths inoperable, a diverse and redundant means of supplying AFW to the three steam generators is lost. The steam driven AFW pump and flow path remains in service to provide injection capability to all three steam generators. Action must be taken to restore one inoperable motor driven AFW pump or flow path to OPERABLE status within 24 hours. The 24 hour Completion Time is reasonable, based on the remaining capabilities afforded by the AFW System, time needed for repairs, and the low probability of a DBA occurring during this time period. The CTS is also revised to adopt new Required Actions D an F, which require actions be taken when portions of the steam driven AFW subsystem are inoperable concurrent with portions of the motor driven subsystem, and when the required motor driven AFW pump and flow path are inoperable in MODE 4, respectively. With the steam driven AFW pump or flow path and one motor driven pump or flow path inoperable, a diverse and redundant means of supplying AFW to the steam generators is lost. One motor driven AFW pump and at least one flow path remains in service to provide injection capability to at least one steam generator; however, redundant capability to feed at least two steam generators is not assured. Action must be taken to place the unit in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4 within 18 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. In MODE 4, either the reactor coolant pumps or the RHR loops can be used to provide forced circulation. This is addressed in LCO 3.4.6, "RCS Loops - MODE 4." With one required AFW train inoperable, action must be taken to immediately restore the inoperable train to OPERABLE status. The immediate Completion Time is consistent with LCO 3.4.6. This change imposes more restrictive requirements and has no adverse impact on safety.

M11 CTS Specifications 4.8.1 and 4.8.2 require that the AFW pumps be run for 15 minutes to determine that the pumps are OPERABLE. ITS SR 3.7.4.2 requires that the AFW pumps be run to determine that the developed head is greater than or equal to the required developed head. Verifying that each AFW pump's developed head at the flow test point is greater than or equal to the required developed head ensures that AFW pump performance has not degraded during the cycle. Flow and differential head are normal tests of centrifugal pump performance required by Section XI of the ASME Code. This test confirms one point on the pump design curve and is indicative of overall performance. Such inservice tests confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. This change imposes more restrictive requirements, and has no adverse impact on safety.

M12 CTS Specification 4.8.3 requires that AFW pump discharge valves be tested. ITS SR 3.7.4.3 requires that all automatic valves (that are not locked, sealed, or otherwise secured in position) be tested. This SR verifies that AFW can be delivered to the appropriate steam generator in the event of any accident or transient that generates an AFW actuation signal, by demonstrating that each automatic valve in the flow path actuates to its correct position on an actual or simulated actuation signal. This change imposes more restrictive requirements, and has no adverse impact on safety.

M13 The CTS is revised to adopt ITS SR 3.7.4.1, SR 3.7.4.4 and SR 3.7.4.5 to provide assurance that AFW valves are in the correct position, that AFW pumps start automatically when required, and that required flow paths are properly aligned. Also, ITS SR 3.7.4.6 is added to ensure OPERABILITY of the “swing” motor driven AFW flow path. SR 3.7.4.1 requires verifying the correct alignment for manual, power operated, and automatic valves in the AFW System water and steam supply flow paths. This provides assurance that the proper flow paths will exist for AFW operation. SR 3.7.4.4 verifies that the AFW pumps will start in the event of any accident or transient that generates an AFW actuation signal by demonstrating that each AFW pump starts automatically on an actual or simulated actuation signal in MODES 1, 2, and 3. In MODE 4, the autostart function is not required. SR 3.7.4.5 verifies proper AFW System alignment and flow path OPERABILITY from the CST to each SG following extended outages to determine that no misalignment of valves has occurred. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M14 CTS Specification 3.4.1 requires that the reactor coolant not be heated above 350°F unless the CST is OPERABLE. ITS Specification 3.7.5 has Applicability in MODES 1, 2, 3, and 4; and when SGs are being used for heat removal. In MODE 4 the AFW System may need to be used for heat removal via the steam generators. The CST is necessary for OPERABILTY

of the AFW system. Since this change expands the MODES of Applicability to require the CST to be OPERABLE in MODE 4 when SGs are being used for heat removal, it is more restrictive and has no adverse impact on safety.

M15 CTS Specification 3.4.3 has Applicability for Required Actions "during power operations" in lieu of the CTS 3.4.2 LCO Applicability of "reactor coolant temperature greater than 350°F." ITS Specification 3.7.5 has Applicability of MODES 1, 2, and 3 and MODE 4 when a steam generator is being used for heat removal, which covers a broader operational band. In MODE 4 the AFW System may need to be used for heat removal via the steam generators. The CST is necessary for OPERABILTY of the AFW system. This change is more restrictive, and has no adverse impact on safety.

M16 CTS Specification 3.4.3 requires that, if the LCO cannot be met within the specified time, the plant be placed in the hot shutdown condition, and if the LCO cannot be met after an additional 48 hours, the reactor be cooled below 350°F. ITS Specification 3.7.5 requires that, if the LCO cannot be met within the specified time, the reactor be placed in MODE 3 in 6 hours, and MODE 4 in 18 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. This change imposes more restrictive requirements, and has no adverse impact on safety.

M17 The CTS is revised to adopt ITS Specification 3.7.5 Required Action A.1 and SR 3.7.5.1; and to add ITS 3.7.5 Required Actions C.1 and C.2 and SR 3.7.5.2 to require that either sufficient water be available in the CST, or a backup water supply be verified as OPERABLE. Required Action A.1 specifies that if the CST level is not within limits, the OPERABILITY of the backup supply should be verified by administrative means within 4 hours and once every 12 hours thereafter. OPERABILITY of the backup feedwater supply must include verification that the flow paths from the backup water supply to the AFW pumps are OPERABLE, and that the backup supply has the required volume of water available. The CST must be restored to OPERABLE status within 24 hours, because the backup supply may be performing this function in addition to its normal functions. The 4 hour Completion Time is reasonable, based on operating experience, to verify the OPERABILITY of the backup water supply. The 24 hours Completion Time is reasonable, based on an OPERABLE backup water supply being available, and the low probability of an event occurring during this time period requiring the CST. Required Actions C.1 and C.2 specify that if the service water supply to the AFW System is inoperable, the plant is not assured of a safety related cold shutdown capability. Therefore, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be

placed in at least MODE 3 within 6 hours, and in MODE 4, without reliance on a steam generator for heat removal, within 18 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. SR 3.7.5.1 verifies that the CST contains the required volume of cooling water. The 12 hour Frequency is based on operating experience and the need for operator awareness of unit evolutions that may affect the CST inventory between checks. Also, the 12 hour Frequency is considered adequate in view of other indications in the control room, including alarms, to alert the operator to abnormal deviations in the CST level. SR 3.7.5.2 verifies by administrative means that the backup water supply to the AFW System from the SWS is OPERABLE. In this situation, verification by administrative means is necessary because it is not prudent to cycle the valves and risk introduction of non-feedwater grade water into the SGs. The 31 day Frequency is based on engineering judgement, and is consistent with the procedural controls that ensure that a water supply is OPERABLE. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M18 CTS Specifications 3.3.3.2 and 3.3.4.2 require that, if inoperable equipment is not restored to OPERABLE status within the specified time limit, the reactor be placed in hot shutdown, and if OPERABILITY cannot be restored in an additional 48 hours, the reactor be placed in cold shutdown. ITS Specifications 3.7.6 and 3.7.7 require that, if OPERABILITY is not restored within the specified time period, the reactor be placed in MODE 3 in 6 hours and MODE 5 in 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. This change imposes more restrictive requirements, and has no adverse impact on safety.

M19 The CTS is revised to adopt ITS Specification 3.7.6 Action A "Note," SR 3.7.6.1 (and "Note") and SR 3.7.6.2, which require surveillances be performed to assure Reactor Coolant System (RCS) loop OPERABILITY, and component cooling water (CCW) pump OPERABILITY. The Note to Required Action A.1 indicates that the applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," be entered if an inoperable CCW train results in an inoperable RHR loop. This is an exception to LCO 3.0.6 and ensures the proper actions are taken for these components. The Note to SR 3.7.6.1 indicates that the isolation of the CCW flow to individual components may render those components inoperable but does not affect the OPERABILITY of the CCW System. SR 3.7.6.1 verifies the correct alignment for manual, power operated, and automatic valves in the required CCW flow path provides assurance that the proper flow paths exist for CCW operation. The 31 day Frequency is based on engineering

judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions. SR 3.7.6.2 verifies proper automatic operation of the required CCW pumps on an actual or simulated ESFAS actuation signal. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when tested at the 18 month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M20 CTS Specifications 3.3.3.3 and 3.3.4.3 require that, if equipment OPERABILITY requirements are not met within the specified time limits, the plant be placed in the cold shutdown condition utilizing normal operating procedures. ITS Specifications 3.7.6 and 3.7.7 require that, under the same conditions, the reactor be placed in MODE 5 in 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. Since this change imposes specific Completion Times, it is more restrictive, and has no adverse impact on safety.

M21 The CTS is revised to adopt ITS Specification 3.7.7 Action A "Note" and Actions B and C. The Action A Note indicates that the applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources - Operating," should be entered if an inoperable SWS train results in an inoperable emergency diesel generator. This is an exception to LCO 3.0.6 and ensures the proper actions are taken for these components. Required Actions B.1 and C.1 limit inoperability of the turbine building loop SWS isolation valves. Action B requires if one SWS Turbine Building loop isolation valve is inoperable, the valve must be closed and deactivated within 72 hours. In the closed and deactivated condition, the remaining OPERABLE loop isolation valves can perform the required isolation function and withstand a single failure. It should be noted, however, that in the event the inoperable valve is the common loop isolation valve (V6-16C), connected to both emergency power sources through an automatic bus transfer switch, placing this valve in a closed and deactivated condition isolates all service water from the Turbine Building, and will ultimately result in a unit shutdown. The 72 hour Completion Time is based on the redundant capabilities afforded by the OPERABLE loop isolation valve(s), and the low probability of a DBA occurring during this time period. In the event the inoperable loop isolation valve is closed and deactivated, it must be verified to be in that condition on a periodic basis. This periodic verification is necessary to assure that the inoperable valve is fulfilling its

isolation function. The Completion Time of 31 days is appropriate because of the low probability of misalignment of the valve during this time period. Required Action C.1 requires that if two SWS Turbine Building loop isolation valves are inoperable, one of the inoperable valves must be closed and deactivated within 2 hours. In the closed and deactivated condition, the remaining OPERABLE loop isolation valve can perform the required isolation function. It should be noted, however, that placing the common loop isolation valve, V6-16C, which is connected to both emergency power sources through an automatic bus transfer switch, in the closed and deactivated condition isolates all service water from the Turbine Building, and will ultimately result in a unit shutdown. Therefore, V6-16A or V6-16B is the preferred valve to close when inoperable. The 2 hour Completion Time is reasonable to either restore at least one valve to OPERABLE status, or place it in the closed and deactivated condition, based on the time usually required to accomplish these tasks, and consequently restore the SWS Turbine Building loop isolation function. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M22 The CTS is revised to adopt ITS SR 3.7.7.1 and SR 3.7.7.2 to require that Service Water System (SWS) valves are verified in the correct position, and that the turbine building loop isolation valves actuate as required. SR 3.7.7.1 is modified by a Note indicating that the isolation of the SWS components or systems may render those components inoperable, but does not affect the OPERABILITY of the SWS. This SR verifies the correct alignment for manual, power operated, and automatic valves in the SWS flow path and provides assurance that the proper flow paths exist for SWS operation. The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions. SR 3.7.7.2 verifies proper automatic operation of the SWS valves on an actual or simulated actuation signal. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M23 The CTS is revised to adopt ITS SR 3.7.7.4. This SR verifies that the automatic bus transfer switch associated with turbine building service water isolation valve V6-16C, will function properly to automatically transfer the power source from the aligned emergency power source to the other emergency power source upon loss of power to the aligned emergency

power source. Periodic testing of the switch is necessary to demonstrate OPERABILITY. Operating experience has shown that this component usually passes the Surveillance when performed at the 18 month Frequency. This change imposes new requirements, which is more restrictive and has no adverse impact on safety.

M24 CTS Specification 3.4.1 states that the "reactor coolant shall not be heated above 350°F." ITS Specification 3.7.8 has Applicability in MODES 1, 2, 3, and 4. In MODES 1, 2, 3, and 4, the UHS is required to support the OPERABILITY of the equipment serviced by the UHS and required to be OPERABLE in these MODES. This change imposes more restrictive requirements, and has no adverse impact on safety.

M25 CTS Specification 3.4.3 has Applicability during "power operations." ITS Specification 3.7.8 has Applicability in MODES 1, 2, 3, and 4, which covers a broader operational band. In MODES 1, 2, 3, and 4, the UHS is required to support the OPERABILITY of the equipment serviced by the UHS and required to be OPERABLE in these MODES. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. This change is more restrictive, and has no adverse impact on safety.

M26 CTS Specification 3.4.3 requires that, if an LCO cannot be met within the specified time, the plant be placed in the hot shutdown condition, and if the LCO cannot be met after an additional 48 hours, the reactor be cooled below 350°F. ITS Specification 3.7.8 requires that, if the LCO cannot be met within the specified time, the reactor be placed in MODE 3 in 6 hours, and MODE 5 in 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. This change imposes more restrictive requirements, and has no adverse impact on safety.

M27 The CTS is revised to adopt ITS SR 3.7.8.1 and SR 3.7.8.2 to require that the ultimate heat sink be verified available for cooling water supply. SR 3.7.8.1 verifies that adequate long term (30 day) cooling can be maintained. The specified level also ensures that sufficient NPSH is available to operate the SWS pumps. The 24 hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES. SR 3.7.8.2 verifies that the SWS is available to cool the CCW System to at least its maximum design temperature with the maximum accident or normal design heat loads for 30 days following a Design Basis Accident. The 24 hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES. This change imposes new

requirements, which is more restrictive and has no adverse impact on safety.

M28 CTS Specification 3.15.1.a requires that, with one Water Cooled Condensing Unit inoperable, and unable to be restored to OPERABLE status within the time period specified, the reactor be placed in hot shutdown within the next 8 hours and cold shutdown within the following 30 hours. ITS Specifications 3.7.9 and 3.7.10 require that, under the same circumstances, that the reactor be placed in MODE 3 in 6 hours, and in MODE 5 in 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. This change imposes more restrictive requirements, and has no adverse impact on safety.

M29 CTS Specification 3.15.1.b requires that, in the event that both Water Cooled Condensing trains are inoperable, and one train cannot be restored to OPERABLE status within the time period specified, the reactor be placed in hot shutdown within the next 8 hours and cold shutdown within the following 30 hours. ITS Specifications 3.7.9 and 3.7.10 require that, under the same circumstances, that the reactor be placed in MODE 3 in 6 hours, and in MODE 5 in 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. This change imposes more restrictive requirements, and has no adverse impact on safety.

M30 CTS Specification 3.15.2.b requires that, under certain conditions, all operations involving core alterations be suspended. ITS Specifications 3.7.9 and 3.7.10 require in addition, that all movement of irradiated fuel assemblies be suspended. Suspending movement of irradiated fuel assemblies is necessary to stop activities that could result in a release of radioactivity that might require isolation of the control room. This change imposes more restrictive requirements, and has no adverse impact on safety.

M31 CTS Specification 4.15.f.4 requires verification that the control room filtration system maintains a positive pressure relative to the outside atmosphere. ITS SR 3.7.9.4 requires that a specific positive pressure of $\geq$ 1/8 inch of water be maintained relative to the outside atmosphere and a positive pressure relative to adjacent building areas. This SR verifies the integrity of the control room envelope, and the assumed inleakage rates of potentially contaminated air. The control room positive pressure, with respect to potentially contaminated adjacent areas, is periodically tested to verify proper functioning of the CREFS. During the emergency pressurization mode of operation, the CREFS is designed to pressurize the control room $\geq$ 0.125 inches water gauge

positive pressure with respect to the outside atmosphere and maintain a positive pressure with respect to adjacent building areas in order to prevent unfiltered inleakage. This change imposes more restrictive requirements, and has no adverse impact on safety.

M32 The CTS Specification 4.15.f.2 is revised to adopt ISTS SR 3.7.10.1. This SR verifies that the heat removal capability of the system is sufficient to remove the heat load assumed in the control room. Since this change imposes new requirements for the heat removal capability of the WCCUs, it is more restrictive and has no adverse impact on safety.

M33 The CTS is revised to adopt ITS SR 3.7.11.1, SR 3.7.11.2, and SR 3.7.11.3 to require that the Fuel Building Air Cleanup System be verified OPERABLE. SR 3.7.11.1 requires the FBACS to be checked periodically to ensure that it functions properly. As the environmental and normal operating conditions on this system are not severe, testing once every month provides an adequate check on this system. Monthly heater operation dries out any moisture accumulated in the charcoal from humidity in the ambient air. The 31 day Frequency is based on the known reliability of the equipment. SR 3.7.11.2 verifies that the required FBACS testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). SR 3.7.11.3 verifies the integrity of the fuel building enclosure. The ability of the fuel building to maintain negative pressure with respect to potentially uncontaminated adjacent areas is periodically tested to verify proper function of the FBACS. The Frequency of 18 months is consistent with the guidance provided in NUREG-0800, Section 6.5.1. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M34 The CTS is revised to adopt ITS Specification 3.7.12 to require that the spent fuel storage pool water level be maintained at ≥ 21 feet over the top of irradiated fuel assemblies seated in the storage racks such that it meets the assumptions for iodine decontamination factors in the fuel handling accident analysis, and bounds the sensible heat sink assumptions used in time-to-boil calculations. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M35 The CTS is revised to adopt ISTS Specification 3.7.13, Action A, to require that fuel movement be suspended in the event spent fuel storage pool boron concentration is not within limits. When the concentration of boron in the fuel storage pool is less than required, immediate action must be taken to preclude the occurrence of an accident or to

mitigate the consequences of an accident in progress. This is most efficiently achieved by immediately suspending the movement of fuel assemblies. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M36 CTS Table 4.1-2, Item 7, requires spent fuel pit boron concentration to be analyzed prior to refueling or new fuel movement in the spent fuel pit. ITS SR 3.7.13.1 requires boron concentration be analyzed at a Frequency of 7 days. This SR verifies that the concentration of boron in the fuel storage pool is within the required limit. As long as this SR is met, the analyzed accidents are fully addressed. The 7 day Frequency is appropriate because no major replenishment of pool water is expected to take place over such a short period of time. This change imposes more restrictive requirements, and has no adverse impact on safety.

M37 The CTS is revised to adopt the ITS LCO 3.7.14, Applicability, Required Action A.1 and SR 3.7.14.1, to require that new and spent fuel be stored in accordance with the restrictions imposed upon them. The hypothetical criticality accidents can only occur as a result of storage of a new or spent fuel assembly in a prohibited location or fuel assembly configuration. By controlling the movement of each fuel assembly, and by checking the location of each fuel assembly after movement, the potential for an inadvertent criticality becomes very small. The restrictions on the placement of fuel assemblies within the new and spent fuel storage racks ensures the k_{eff} of the stored fuel will always remain < 0.95, assuming the racks to be flooded with unborated water. This LCO applies whenever any fuel assembly is stored in the new or spent fuel storage racks. When the configuration of fuel assemblies stored in the new and spent fuel storage racks is not in accordance with UFSAR Table 9.1.2-2, the immediate action is to initiate action to make the necessary fuel assembly movement(s) to bring the configuration into compliance with UFSAR Table 9.1.2-2. SR 3.7.14.1 verifies by administrative means that fuel assembly storage is in accordance with UFSAR Table 9.1.2-2. This change imposes more restrictive requirements, and has no adverse impact on safety.

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA1 CTS Table 4.1-3 (Item 12) requires performance of a closure check on the turbine steam stop, control reheat stop, and interceptor valves. This detail is not retained in the ITS and is relocated to licensee controlled documents.

The details associated with the involved Specification are not required to be in the ITS to provide adequate protection of the public health and safety because the valves are in the secondary plant Steam and Power Conversion System, and do not have a direct impact on the safe operation of the plant. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA2 CTS Specification 3.13.1 requires that all safety related shock suppressors (snubbers) be capable of performing their intended function in the required manner (OPERABLE) during all MODES of operation except cold shutdown and refueling. This specification is not retained in the ITS and is relocated to licensee controlled documents.

This Specification is not required to be in the ITS to provide adequate protection of the public health and safety because the ISI Program controls are adequate to ensure that required inspection and testing to demonstrate OPERABILITY is performed. With the removal of OPERABILITY requirements from the Technical Specifications (TS), snubber OPERABILITY will be determined in accordance with TS system OPERABILITY requirements. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA3 CTS 4.15.a requires verification the Control Room air temperature is less than or equal to 85 degrees F at least once per 12 hours. This detail of measuring room temperature is not retained in the ITS and is relocated to licensee controlled documents.

This Specification is not required to be in the ITS to provide adequate protection of the public health and safety because the control room safety-related electrical equipment can operate with ambient

temperatures of up to 120 degrees F for short periods of time. Operators in the control room, which is continuously manned, are immediately aware of temperatures approaching this range and would take the necessary procedural actions to reduce the temperature. Having two redundant Control Room air conditioners powered from separate emergency diesels ensures this action can be accomplished. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA4 CTS 5.4.3 includes detail regarding the applicable safety analysis and associated references. This type of detail is not retained in the ITS and is relocated to the bases as appropriate.

This information is not required to be in the ITS to provide adequate protection of the public health and safety because it does not provide necessary information to enhance the specification. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA5 CTS 3.12 requires that after the strong motion recorder indicates the operating basis earthquake has been exceeded, the reactor be shutdown and remain shutdown until after completion of specified inspections and repairs. The requirements associated with this specification are not retained in the ITS and are relocated to licensee controlled documents.

The requirements associated with the involved Specifications are not required to be in the ITS to provide adequate protection of the public health and safety, because the ITS still retains appropriate requirements for OPERABILITY of the required plant systems structure and components. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these requirements is acceptable.

LA6 CTS Specification 5.4.2.1 describes the secured location restrictions for fuel storage in the new fuel storage racks. This test requirement is not retained in the ITS and is relocated to the Updated Final Safety Analysis Report (UFSAR).

The test specification is not required to be in the ITS to provide adequate protection of the public health and safety, since the new fuel storage rack design requirements to support the applicable safety analyses (i.e., subcriticality calculations) are specified in ITS Section 4.3.1.2, and Surveillance Requirement 3.7.14.1 is added to verify that fuel is stored in approved locations. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these surveillance requirements is acceptable.

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CTS Specification 3.4.1.a requires that 12 main steam safety valves (MSSVs) be OPERABLE. ITS Specification 3.7.1 requires MSSVs to be OPERABLE as specified in Tables 3.7.1-1 and 3.7.1-2. Table 3.7.1-1 permits fewer MSSVs to be OPERABLE at reduced power levels. This is a relaxation of requirements, which is less restrictive. This change is acceptable, however, because Section III of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code permits operation with fewer than 12 MSSVs OPERABLE as long as THERMAL POWER is proportionally limited to the relief capacity of the MSSVs remaining OPERABLE. This is accomplished by restricting THERMAL POWER so that the energy transfer to the most limiting steam generator is not greater than the available relief capacity in that steam generator. These limitations are specified in Table 3.7.1-1. This change is consistent with NUREG-1431.

L2 CTS Specification 3.4.1 requires the plant to be shutdown if the requirements for OPERABILITY of the MSSVs are not met within 24 hours. A Note to ITS Actions 3.7.1 is added that allows separate condition entry for each MSSV. Since the CTS has no provision to increase the allowed outage time when one MSSV becomes inoperable after another, this change is less restrictive. This change is acceptable because the ITS Required Actions, after a short allowed outage time of four (4) hours, will ensure that THERMAL POWER reductions maintain the steam generator stored energy below the available relief capacity. Separate condition entry for each inoperable MSSV is necessary to allow the orderly adjustment of THERMAL POWER in response to the Required Actions. This change is consistent with NUREG-1431.

L3 CTS Specification 3.4.1 has Applicability such that the "... reactor coolant shall not be heated above 350°F." ITS Specification 3.7.2 has Applicability of MODE 1, and MODES 2 and 3 except when all Main Steam Isolation Valves (MSIVs) are closed. This change eliminates OPERABILITY requirements for MSIVs when they are closed. This is a relaxation of requirements, which is less restrictive. This change is acceptable, however, because when the MSIVs are closed, they are already performing their safety function. This change is consistent with NUREG-1431.

L4 CTS Specification 4.7.1 requires that main steam stop valves be tested at a Frequency of each refueling interval or 15 ± 3 months, whichever occurs first. ITS Specification 3.7.2 requires that the valves be tested at a Frequency in accordance with the Inservice Testing (IST) Program. This is a relaxation of requirements, which is less restrictive. This change is acceptable, however, because the IST Program currently requires testing at an 18 month Frequency, based on the refueling cycle, and which is an acceptable Frequency for this

Surveillance in the CTS. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency, which is acceptable from a reliability standpoint. This change is consistent with NUREG-1431.

L5 The CTS is revised to adopt ITS Specification 3.7.4 Required Action E.1 and Note. The Required Action and Note add requirements for three inoperable AFW pumps or four inoperable AFW flow paths. The CTS has no specific required action to address the inoperability of all three AFW pumps and essential features. Hence, this condition will result in entry into CTS Specification 3.0 and the required action is to place the plant in hot shutdown in 8 hours and cold shutdown within an additional 30 hours. Because the addition of Required Action E.1 allows continued operation until at least one pump and flow path of AFW is restored to OPERABLE status, this change is less restrictive. This change is acceptable, however, because it is appropriate to restore at least one pump and flow path of AFW to OPERABLE before bringing the plant into a condition where AFW would be required. This change is consistent with NUREG-1431.

L6 CTS Specifications 4.8.1 and 4.8.2 require that Surveillances be performed at monthly intervals. ITS SR 3.7.4.2 requires that the Surveillance be performed every 31 days on a STAGGERED TEST BASIS, which results in 93 days between tests on the same AFW pump. This is a relaxation of requirements, which is less restrictive. This change is acceptable, however, because these tests, which confirm OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance, are required to be performed by Section XI of the ASME Boiler and Pressure Vessel Code, which specifies a 3 month interval for each pump. This change is consistent with NUREG-1431.

L7 CTS Specification 4.8.3 requires that the AFW pump discharge valves be tested at monthly intervals. ITS SR 3.7.4.3 requires that these valves be tested at 18 month intervals. This is a relaxation of requirements, which is less restrictive. This change is acceptable, however, because the valves are also tested along with the SR 3.7.4.2 AFW pump tests, at a 31 day Frequency on a STAGGERED TEST BASIS. This testing would detect significant failures of the AFW pump discharge valves that could lead to the failure of the AFW System to perform its design function. Therefore, the impact of this change, if any, on system availability is minimal. A review of operating experience associated with the preformance of CTS 4.8.3 was performed to validate the above conclusion. This historical review of operating experience demonstrates that there are no failures that would invalidate the conclusion that the impact of this change, if any, on system availability is minimal. The 18 month test is a system functional test, and is consistent with NUREG-1431.

L8 CTS Specifications 3.3.3.2, 3.3.3.3, 3.3.4.2, and 3.3.4.3 permit one pump or component to be out of service. ITS Specifications 3.7.6 and 3.7.7 permit one train to be inoperable. The incorporation of individual components into trains is less restrictive because more than one component in the same train may be inoperable. The incorporation of components into trains is acceptable because the remaining OPERABLE train is adequate to perform the heat removal function. This change is consistent with NUREG-1431.

L9 CTS Specifications 3.3.3.2 and 3.3.4.2 permit one pump or component to be out of service for 24 hours during power operation. ITS Specifications 3.7.6 and 3.7.7 permit one train to be inoperable for 72 hours. The 72 hour Completion Time is reasonable, based on the redundant capabilities afforded by the OPERABLE train, and the low probability of a design basis accident occurring during this period. This change is consistent with NUREG-1431.

L10 CTS Specification 3.15.1 has Applicability in "all MODES of operation, except cold shutdown." ITS Specifications 3.7.9 and 3.7.10 have Applicability in MODES 1, 2, 3, and 4, and during movement of irradiated fuel and during CORE ALTERATIONS. This is a relaxation of requirements, which is less restrictive. This change is acceptable, however, because these Specifications address Required Actions to meet OPERABILITY requirements in MODES 1, 2, 3, and 4, during movement of irradiated fuel, and during CORE ALTERATIONS, to place the reactor in a MODE which minimizes accident risk; and Required Actions to meet OPERABILITY requirements for MODES 5 and 6 are also addressed in this Specification. This change is consistent with NUREG-1431.

L11 CTS Specification 3.15.2.a requires that, under certain conditions, the OPERABLE Control Room Air Conditioning System train be placed in operation in the emergency pressurization mode. ITS Specifications 3.7.9 and 3.7.10 alternatively require suspension of any CORE ALTERATIONS and movement of fuel assemblies. This is a relaxation of requirements, which is less restrictive. This change is acceptable, however, because the alternative action suspends activities that could result in a release of radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk. This change is consistent with NUREG-1431.

L12 The CTS Specification 3.15.2.b requirement to suspend any operation which would reduce shutdown margin to less than that required for cold shutdown or refueling when both Control Room Air Conditioning trains are inoperable (during cold shutdown and refueling when containment integrity is required) is not included in the ITS 3.7.9 and 3.7.10. This requirement was put in place to ensure the core is maintained subcritical. The deletion of this requirement is a relaxation of requirements, which is less restrictive. In this Condition, ITS 3.7.9 ACTION D and ITS 3.7.10 ACTION D require all CORE ALTERATIONS and movement of fuel assemblies to be immediately suspended. This change is acceptable because some of the operations that could decrease SHUTDOWN MARGIN are already included in the definition of CORE ALTERATION. Other activities that may reduce SHUTDOWN MARGIN are controlled by the requirements of ITS LCO 3.1.1, SHUTDOWN MARGIN (SDM) and ITS LCO 3.9.1, Boron Concentration. The ITS 3.7.9 and ITS 3.7.10 requirements to suspend CORE ALTERATIONS, the requirements of ITS LCO 3.1.1, and the requirements of ITS 3.9.1 are adequate to ensure the core is maintained subcritical. Therefore, the requirements of CTS 3.15.2.b are not necessary to ensure the core is maintained subcritical and activities are suspended that could result in a release of radioactivity that might enter the control room. This change is consistent with NUREG-1431.

L13 CTS Specification 4.15.b requires verification that the Control Room Air Conditioning System operates for at least an hour. ITS SR 3.7.9.1 requires verification for ≥ 15 minutes. This is a relaxation of requirements, which is less restrictive. This change is acceptable, however, because operation of the filter train for ≥ 15 minutes is adequate to demonstrate functionality of the system at a 31 day Frequency. This change is consistent with NUREG-1431.

L14 CTS Specification 4.15.c, which requires verification that the Control Room Air Conditioning System maintains a positive pressure in the control room when operating in the emergency pressurization mode on a 31 day STAGGERED TEST BASIS, is not retained in the ITS. This is a relaxation of requirements, which is less restrictive. This change is acceptable, however, since OPERABILITY of the system is verified through performance of SR 3.7.9.1, which requires operating each CREFS train for ≥15 minutes at a 31 day Frequency. ITS SR 3.7.9.4 requires verification of positive pressure in the control room under measured conditions at an 18 month Frequency on a STAGGERED TEST BASIS. ITS SR 3.0.1 states that SRs shall be met during the MODES or other specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR. ITS SR 3.0.1 also states that failure to meet a Surveillance even if experienced between performances of the Surveillance, shall be failure to meet the LCO. If during the 31 day performance of ITS SR 3.7.9.1, control room positive pressure was discovered to be not maintained, this would constitute a failure to meet ITS SR 3.7.9.4. Therefore, the

impact of this change, if any, on system availability is minimal. A review of operating experience associated with the performance of CTS 4.15.c was performed to validate the above conclusion. This historical review of operating experience demonstrates that there are no failures that would invalidate the conclusion that the impact of this change, if any, on system availability is minimal. Therefore, the requirement to verify positive pressure in the control room in ITS SR 3.7.9.4 is adequate to ensure the CREFS is capable of maintaining control room positive pressure. This change is consistent with NUREG-0800 and NUREG-1431.

L15 CTS Specification 4.15.f.4 requires verification of positive pressure at a Frequency of 18 months. ITS SR 3.7.9.4 requires this verification at a Frequency of 18 months on a STAGGERED TEST BASIS. This is a relaxation of requirements because each train is tested at the new Frequency of 36 months. This change is acceptable because changes in air flow leakage out of the control room habitability envelope can be verified with either train. Performance of SR 3.7.9.4 for each train at a Frequency of 18 months on a STAGGERED TEST BASIS assures that positive pressure is verified every 18 months. This change is consistent with NUREG-0800 and NUREG-1431.

L16 CTS Specifications 3.15.1.a and 3.15.2.a. require restoring the inoperable train of the Control Room Air Conditioning System to operable status within 7 days. ITS Specification 3.7.10 requires restoring the inoperable train to OPERABLE status within 30 days. This is a relaxation of requirements, which is less restrictive. This change is acceptable, however, because in this condition, the remaining OPERABLE train is adequate to maintain the control room temperature within limits. However, the overall reliability is reduced because a single failure in the OPERABLE train could result in a loss of function. The 30 day Completion Time is based on the low probability of an event requiring control room isolation and operation of the remaining control room air conditioning train during the time one control room air conditioning train is inoperable and the consideration that the remaining train can provide the required function. This change is consistent with NUREG-1431.

L17 CTS Specification 3.4.2 provides secondary coolant specific activity requirements and has Applicability "under all MODES of operation from cold shutdown through power operation." ITS Specification 3.7.15 has Applicability of MODES 1, 2, 3, and 4. This is a relaxation of requirements, which is less restrictive. This change is acceptable, however, because the limits have Applicability in the MODES which have the potential for secondary steam releases to the atmosphere. In MODE 5, the SGs are not being used for heat removal. Both the RCS and SGs are depressurized, and primary to secondary LEAKAGE is minimal.

Therefore, monitoring of secondary specific activity is not required. This change is consistent with NUREG-1431.

L18 CTS Table 4.1-2, Item 8, requires analysis for secondary specific activity at Frequencies of: 1) minimum 1 per 72 hours with 3 days maximum time between tests; 2) 1 per 31 days whenever the gross activity determination indicates iodine concentrations are greater than 10% of the allowable limit; and 3) 1 per 6 months whenever the gross activity determination indicates iodine concentrations are less than 10% of the allowable limit. ITS SR 3.7.15.1 requires the analysis be performed at a Frequency of 31 days. Because the first CTS Frequency condition of "minimum 1 per 72 hours" is more limiting than the remaining Frequency conditions of "1 per 31 days" and "1 per 6 months," without regard to the results of the analyses, the ITS Frequency of 31 days is a relaxation of requirements from the CTS Frequency requirements, which is less restrictive. This change is acceptable, however, because a Frequency of 31 days is based on the detection of increasing trends of the level of DOSE EQUIVALENT I-131, and allows for appropriate action to be taken to maintain levels below the LCO limit. This change is consistent with NUREG-1431.

L19 CTS Specification 3.8.2 requires "fuel handling operations" be terminated if the Spent Fuel Building filter system is inoperable. ITS Specification 3.7.11 Action A requires "movement of irradiated fuel assemblies be suspended" under the same conditions. Since "fuel handling operations" involves more than just "movement of irradiated fuel assemblies" this is a relaxation of requirements, which is less restrictive. The bounding design basis fuel handling accident assumes a drop and subsequent damage of an irradiated fuel assembly. Once the irradiated fuel movement has been suspended a fuel handling accident as described in the UFSAR cannot occur. This change is considered to be acceptable since the change maintains the assumptions of the bounding design basis fuel handling accident. In addition, the movement of other loads in the Spent Fuel Building is administratively controlled based on appropriate load handling procedures and use of safe load paths. This change is consistent with NUREG-1431.

L20 CTS 4.8.1 and 4.8.2 require the AFW pumps to be run for 15 minutes to determine their OPERABILITY. ITS SR 3.7.4.2 requires verification that the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head (refer to DOC M11 for the discussion and justification associated with adding the test acceptance criteria). Implicit in this requirement is that the test duration be sufficient to obtain valid data. Therefore, the explicit requirement to run the AFW pump test for 15 minutes is unnecessary and is deleted. In addition, control of pump testing requirements to ensure surveillance test data are valid are addressed by plant procedures. The requirement

to ensure surveillance test data are valid is adequately addressed by the requirements of 10 CFR 50 Appendix B, Section XI (Test Control): A test program shall be established to assure all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written procedures which incorporate the requirements and acceptance limits contained in applicable design documents. Compliance with 10 CFR 50 Appendix B is required by the HBRSEP, Unit No. 2 Operating License. Therefore, the explicit requirement associated with the duration of the AFW pump tests is removed from the Technical Specifications. This change is consistent with NUREG-1431.

RELOCATED SPECIFICATIONS

None.

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

   The proposed change does not involve any physical alteration of plant systems, structures or components or changes in parameters governing normal plant operation. OPERABILITY of the Spent Fuel Building filter system does not affect any new or different kind of accident from any accident previously evaluated. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created.

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

   The proposed change involves reducing the requirements if the Spent Fuel Building filter system when it is inoperable, from terminating fuel handling operations to suspending movement of irradiated fuel assemblies. Since the Spent Fuel Building filter system is only required to be OPERABLE during movement of irradiated fuel in the fuel building, where possibility of an accident exists that would require the Spent Fuel Building filter system, the consequences of such an accident remain unchanged. Therefore, the proposed change does not involve a reduction in a margin of safety.

LESS RESTRICTIVE SPECIFIC CHANGES
("L20" Labeled Comments/Discussions)

Carolina Power & Light Company has evaluated the proposed Technical Specification change and has concluded that it does not involve a significant hazards consideration. Our conclusion is in accordance with the criteria set forth in 10 CFR 50.92. The bases for the conclusion that the proposed change does not involve a significant hazards consideration are discussed below.

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

   The proposed change does not involve any physical alteration of plant systems, structures or components or changes in parameters governing normal plant operation. The proposed change deletes the explicit 15 minute test duration for the AFW pumps. The AFW System is not assumed to be an initiator of any accident previously evaluated. The probability of occurrence of an accident is independent of the OPERABILITY of the AFW System. The accident analyses assume an AFW System is OPERABLE to mitigate the consequences of an accident. ITS SR 3.7.4.2 requires verification that the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head. Implicit in this requirement is that the test duration be sufficient to obtain valid data. Control of pump testing requirements to ensure surveillance test data are valid are addressed by plant procedures. The requirement to ensure surveillance test data are valid is adequately addressed by the requirements of 10 CFR 50 Appendix B, Section XI (Test Control): A test program shall be established to assure all testing required to demonstrate

that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written procedures which incorporate the requirements and acceptance limits contained in applicable design documents. Compliance with 10 CFR 50 Appendix B is required by the HBRSEP Operating License. Therefore, the explicit requirement associated with the duration of the AFW pump tests are not necessary to ensure the AFW pumps are maintained OPERABLE. As a result, accident consequences are unaffected by the proposed change. Therefore, the proposed change does not involve an increase in the probability or consequences of an accident previously evaluated.

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

   The proposed change does not involve any physical alteration of plant systems, structures or components or changes in parameters governing normal plant operation. The deletion of the explicit requirement associated with the duration of the AFW pump tests does not affect any new or different kind of accident from any accident previously evaluated since the requirements of ITS SR 3.7.4.2 are adequate to ensure the AFW pump tests of sufficent duration are performed. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created.

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

   The proposed deletion of the explicit requirement to run the AFW pumps for 15 minutes does not impact any margin of safety. ITS SR 3.7.4.2 requires verification that the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head. Implicit in this requirement is that the test duration be sufficient to obtain valid data. Therefore, the explicit 15 minute test duration requirement for the AFW pump tests is unnecessary. In addition, control of pump testing requirements to ensure surveillance test data are valid are addressed by plant procedures. The requirement to ensure surveillance test data are valid is adequately addressed by the requirements of 10 CFR 50 Appendix B. Compliance with 10 CFR 50 Appendix B is required by the HBRSEP Operating License. As a result, the explicit requirement associated with the duration of the AFW pump tests are not necessary to ensure the AFW pumps are tested for a sufficient duration to demonstrate their OPERABILITY. Therefore, this change does not involve a significant reduction in a margin of safety.

CST 3.7.5 (1)

CTS

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
[M17]	SR 3.7.5.1 Verify the CST level is ≥ 35,000 gal.	12 hours
[M17]	SR 3.7.5.2 Verify by administrative means OPERABILITY of backup SWS supply to the AFW System.	31 days

(12)

CTS

3.7 PLANT SYSTEMS

3.7.9 Ultimate Heat Sink (UHS)

[3.4.1.c] LCO 3.7.9 The UHS shall be OPERABLE.

[3.4.1] APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
[A. One or more cooling towers with one cooling tower fan inoperable.	A.1 Restore cooling tower fan(s) to OPERABLE status.	7 days]
[B. Required Action and associated Completion Time of Condition A not met. OR] [3.4.3] UHS inoperable [for reasons other than Condition A].	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
[M27] [SR 3.7.9.1 Verify water level of UHS is ≥ [562] ft [mean sea level].	[24] hours]

(continued)

Supplement 1

CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY
[M27]	[SR 3.7.9.2] (8)	Verify average water temperature of UHS is ≤ [90]°F. Service 95	24 hours
	[SR 3.7.9.3	Operate each cooling tower fan for ≥ [15] minutes.	31 days] (20)
	[SR 3.7.9.4	Verify each cooling tower fan starts automatically on an actual or simulated actuation signal.	[18] months] (20)

18 ITS 3.7.9 and ITS 3.7.10 are modified to reflect a 48 hour allowed outage time for the inoperability of two CREFS trains, and two WCCU trains, respectively, and the associated shutdown actions if one train of the respective systems is not restored within the 48 allowed outage time. These changes are being made for consistency with the current licensing basis.

19 ITS SR 3.7.9.4 is modified to reflect verification of ability to pressurize the control room habitability envelope to a "positive" pressure relative to adjacent building areas, consistent with applicable safety analyses and current licensing basis.

20 The plant design basis for the Ultimate Heat Sink (UHS) is the Lake Robinson impoundment. The Actions and Surveillance Requirements of ITS 3.7.8 are modified accordingly to reflect the plant design basis and eliminate reference to cooling towers.

21 ISTS 3.7.12 is not adopted in the ITS. The ECCS Pump Room Exhaust Air Cleanup System provides no safety function, and therefore no Technical Specifications are required.

22 ITS 3.7.11 is modified to reflect that the Fuel Building Air Cleanup System (FBACS) is a manually actuated, single train system that is required to be operating during movement of irradiated fuel assemblies in the building. The FBACS has no safety function in the mitigation of the consequences of reactor accidents. The FBACS safety function is to mitigate the consequences of a fuel handling accident in the Fuel Building.

23 ITS SR 3.7.11.3 is modified to reflect the FBACS safety function as maintaining the atmospheric pressure in the Fuel Building "negative" with respect to the outside atmosphere to assure that any airborne radioactivity resulting from a fuel handling accident is passed through the FBACS prior to release to the atmosphere. The offsite total dose consequences were analyzed assuming a total release of activity from the fuel handling accident. Therefore, the consequences of a fuel handling accident are unrelated to the system flow rate as long as the building pressure remains negative with respect to the outside atmosphere. Consequently, there is no design requirement for the FBACS to maintain a specific negative pressure at any specific flow rate.

24 ISTS 3.7.14 is not adopted in the ITS. Plant design basis does not include a Penetration Room Exhaust Air Cleanup System, and therefore no Technical Specifications are required.

25 ITS 3.7.12 is modified to reflect that the fuel storage pool minimum level of 21 feet meets the assumptions for iodine decontamination factors used in the fuel handling accident analysis, and bounds the sensible heat sink assumptions used in time-to-boil calculations.

26 ITS 3.7.13 Applicability is modified to require boron concentration to meet requirements during new and spent fuel movement activities in the fuel storage pool, consistent with current licensing basis. This ensures that K_{eff} remains within the analyses when fuel movement activity is taking place and takes credit for the dual verification that occurs during movement of new or spent fuel in the fuel storage pool. The Required Action when the LCO is not met is to suspend movement of fuel assemblies in the fuel storage pool, which places the Specification in a mode in which it is no longer Applicable, and therefore Required Action A.2.1 is unnecessary. The provision in the ISTS to limit Applicability of the LCO to only those times when verification has not been performed following the last movement of fuel assemblies does not apply, nor does Required Action A.2.2.

27 ITS Specification 3.7.14 is modified to reflect the current new and spent fuel storage requirements. Since specific design requirements are applied to the storage of new fuel to prevent maximum new fuel packing that would result in new fuel storage outside the assumptions of the new fuel storage criticality analysis, ISTS 3.7.14 was modified to include new fuel storage in addition to spent fuel storage in order to provide a Required Action and a Surveillance Requirement to the storage of new fuel. Additionally, since the spent fuel storage criticality analysis is not dependent on fuel burnup, the ISTS format for the LCO and referenced figure is not adopted in ITS. The only limitations on spent fuel storage are fuel assembly configuration restrictions provided in Updated Final Safety Analysis Report (UFSAR) Table 9.1.2-2, that apply to locations in either the high or low density spent fuel storage racks. The details of fuel assembly configurations and locations are appropriately controlled as currently included in the UFSAR. Therefore, the resulting ITS LCO 3.7.14 is written to provide an LCO requirement to store new and spent fuel in approved locations, and provide the necessary required action and surveillance requirement.

28 ITS SR 3.7.4.5 is modified by a Note that allows entry into and operation in MODE 3 and MODE 2 prior to performing the SR for the steam driven AFW pump. This is necessary because sufficient decay heat is not available following an extended outage. The unit must be at a point of adding minimum core heat in order to provide sufficient steam to operate the steam driven AFW pump to verify water flow.

(1)

BASES

LCO (continued)

The OPERABILITY of the CST is determined by maintaining the tank level at or above the minimum required level.

INSERT B 3.7.5-2 (28)

APPLICABILITY

In MODES 1, 2, and 3, and in MODE 4, when (a) steam generator is being ~~relied upon~~ used for heat removal, the CST is required to be OPERABLE.

In MODE 5 or 6, the CST is not required because the AFW System is not required.

ACTIONS

A.1 and A.2

If the CST level is not within limits, the OPERABILITY of the backup supply should be verified by administrative means within 4 hours and once every 12 hours thereafter. OPERABILITY of the backup feedwater supply must include verification that the flow paths from the backup water supply to the AFW pumps are OPERABLE, and that the backup supply has the required volume of water available. The CST must be restored to OPERABLE status within ~~7 days~~ 24 hours because the backup supply may be performing this function in addition to its normal functions. The 4 hour Completion Time is reasonable, based on operating experience, to verify the OPERABILITY of the backup water supply. The ~~7 day~~ 24 hour Completion Time is reasonable, based on an OPERABLE backup water supply being available, and the low probability of an event occurring during this time period requiring the CST. (29)

(3) If the backup SWS supply to the AFW System is being used to satisfy Required Action A.1, verification of OPERABILITY of the backup feedwater supply requires a visual inspection of the water supply connection between the SWS and the AFW System to verify that the valves are in place and locked closed, the tell-tale drain valve is open, and the piping is intact and free from leakage.

B.1 and B.2

If the CST cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4, without reliance on the steam generator for heat removal, within (18) hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

INSERT B 3.7.5-3 (30)

(continued)

ITS INSERT B 3.7.5-4 (Condensate Storage Tank (CST))

SR 3.7.5.2

This SR verifies by administrative means that the backup water supply to the AFW System from the SWS is OPERABLE. In this situation, verification by administrative means is necessary because it is not prudent to cycle the valves and risk introduction of non-feedwater grade water into the SGs. An administrative verification of OPERABILITY is simply a visual inspection of the water supply connection between the SWS and the AFW System to verify that the valves are in place and locked closed, the tell-tale drain valve is open, and the piping is intact and free from leakage.

The 31 day Frequency is based on engineering judgement, and is consistent with the procedural controls that ensure that a water supply is OPERABLE. Also, the 31 day Frequency is considered adequate in view of the infrequent need to operate valves in the flow paths due to testing or operational requirements.

ITS INSERT B 3.7.7-1 (Service Water System (SWS))

The SWS is an open loop system, consisting of four 8000 gpm capacity wet pit pumps, two redundant 30" diameter headers, and two full capacity booster pumps which supply service water to the four containment fan coolers. Two or three of the four service water pumps normally operate, depending on system demand, and discharge into the two headers, which are cross-connected at the pump discharge. Only one booster pump normally operates. Following a simultaneous Loss of Coolant Accident (LOCA) and loss of offsite power, the cooling water requirements for all four fan coolers and the other essential loads can be supplied by any two of the four SWS pumps. The SWS pumps and booster pumps are automatically started upon receipt of a Safety Injection (SI) signal, and all essential valves are aligned to their post accident positions. Service water to at least one component cooling water heat exchanger is assured with a single failure of any component. The SWS also provides a backup water supply for the Auxiliary Feedwater (AFW) System and the Isolation Valve Seal Water (IVSW) injection tank.

To prevent degradation of the SWS pressure to vital components, service water supply to the turbine building loop is isolated on actuation of low service water header pressure for one minute coincident with a Turbine Trip signal. Two isolation valves powered from emergency power sources isolate each of the two loop headers from the Turbine Building. To provide single failure capability, a third isolation valve is provided that receives power from an automatic bus transfer switch that can be powered from either emergency power source. This valve isolates both SWS headers from the Turbine Building.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.9.1 (continued)

applicable MODES. This SR verifies that the UHS water level is ≥ [568] ft [mean sea level]. 218 MSL

SR 3.7.9.2 8

This SR verifies that the SWS is available to cool the CCW System to at least its maximum design temperature with the maximum accident or normal design heat loads for 30 days following a Design Basis Accident. The 24 hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES. This SR verifies that the average water temperature of the UHS is ≤ [90]°F. service 95

SR 3.7.9.3

Operating each cooling tower fan for ≥ [15] minutes ensures that all fans are OPERABLE and that all associated controls are functioning properly. It also ensures that fan or motor failure, or excessive vibration, can be detected for corrective action. The 31 day Frequency is based on operating experience, the known reliability of the fan units, the redundancy available, and the low probability of significant degradation of the UHS cooling tower fans occurring between surveillances.

SR 3.7.9.4

This SR verifies that each cooling tower fan starts and operates on an actual or simulated actuation signal. The [18] month Frequency is consistent with the typical refueling cycle. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

REFERENCES

1. FSAR, Section [9.2.5]. 9.2.4
2. Regulatory Guide 1.27. ← INSERT 3.7.8-3 ← 43

BASES

APPLICABLE SAFETY ANALYSES (continued)

loss of coolant accident, fission product release presented in the FSAR, Chapter [15] (Ref. 2).

The analysis of toxic gas releases demonstrates that the toxicity limits are not exceeded in the control room following a toxic chemical release, as presented in Reference 1.

The worst case single active failure of a component of the CREFS, assuming a loss of offsite power, does not impair the ability of the system to perform its design function.

The CREFS satisfies Criterion 3 of the NRC Policy Statement.

LCO

Two independent and redundant CREFS trains are required to be OPERABLE to ensure that at least one is available assuming a single failure disables the other train. Total system failure could result in exceeding a dose of 5 rem to the control room operator in the event of a large radioactive release.

The CREFS is considered OPERABLE when the individual components necessary to limit operator exposure are OPERABLE in both trains. A CREFS train is OPERABLE when the associated:

a. Fan is OPERABLE;

b. HEPA filters and charcoal adsorbers are not excessively restricting flow, and are capable of performing their filtration functions; and

c. Heater, demister, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

In addition, the control room boundary must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors.

APPLICABILITY

In MODES 1, 2, 3, 4, [5, and 6,] and during movement of irradiated fuel assemblies [and during CORE ALTERATIONS].

(continued)

ITS INSERT B 3.7.9-3 (Control Room Emergency Filtration System (CREFS))

A CREFS train is OPERABLE when the air cleaning unit fan, air recirculation fan, air intake damper and associated ductwork. and air exhaust damper and associated ductwork, are operable for the given train. The common air filtration unit is OPERABLE to support either train in accordance with the Ventilation Filter Testing Program. In addition, non-redundant ductwork and gravity dampers are OPERABLE to support either train. Implicit in the OPERABILITY of either train is that the integrity of the control room envelope is such that it can be pressurized to ≥0.125" water gauge relative to the outside atmosphere and to a positive pressure relative to adjacent areas at a make-up rate of ≤400 cfm in the emergency pressurization mode.

BASES (continued)

LCO

Two independent and redundant trains of the CREATCS are required to be OPERABLE to ensure that at least one is available, assuming a single failure disabling the other train. Total system failure could result in the equipment operating temperature exceeding limits in the event of an accident.

The CREATCS is considered to be OPERABLE when the individual components necessary to maintain the control room temperature are OPERABLE in both trains. These components include the heating and cooling coils and associated temperature control instrumentation. In addition, the CREATCS must be operable to the extent that air circulation can be maintained.

INSERT B 3.7.10-2

APPLICABILITY

In MODES 1, 2, 3, 4, [5, and 6,] and during movement of irradiated fuel assemblies [and during CORE ALTERATIONS], the CREATCS must be OPERABLE to ensure that the control room temperature will not exceed equipment operational requirements following isolation of the control room.

[In MODE 5 or 6,] CREATCS may not be required for those facilities that do not require automatic control room isolation.

ACTIONS

A.1

With one CREATCS train inoperable, action must be taken to restore OPERABLE status within 30 days. In this Condition, the remaining OPERABLE CREATCS train is adequate to maintain the control room temperature within limits. However, the overall reliability is reduced because a single failure in the OPERABLE CREATCS train could result in loss of CREATCS function. The 30 day Completion Time is based on the low probability of an event requiring control room isolation, the consideration that the remaining train can provide the required protection, and that alternate safety or nonsafety related cooling means are available.

(continued)

Supplement 1

1 In the conversion of the HBRSEP current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted which do not result in technical changes (either actual or interpretational). Editorial changes which involve the insertion of plant specific terms or parameters are used to preserve consistency with the CTS and licensing basis.

2 Bases 3.7.1 are modified to reflect each of the 3 steam generators is equipped with 4 main steam safety valves (MSSVs). Four MSSVs are assumed in the safety analysis. The applicable power, as a percent of RTP, is adjusted accordingly.

3 Bases text is modified for clarity, consistency, or to correct a typographical or grammatical error.

4 Bases 3.7.1 are modified to reflect that the limiting anticipated operational occurrence (AOO) is the loss of external electrical load event; and that no MSSV failures are assumed in the accident analysis.

5 Bases 3.7.1 are modified to reflect that the approved third ten year inservice inspection program references ANSI/ASME OM-1-1981, and that the MSSVs are not equipped with balancing devices.

6 Bases 3.7.1 reference to ASME Boiler and Pressure Vessel Code is modified to reflect the codes in effect when the components were designed.

7 Bases 3.7.2 are modified to reflect that the MSIVs are designed as air operated stop check valves, with an air operator to maintain the check valves open against normal steam flow. The design basis failure is to fail as is. A downstream check valve prevents reverse flow in the event of an AOO or accident. The MSIV bypass valves do not receive an auto close signal, and are normally closed.

8 Bases 3.7.2 are modified to reflect plant specific safety analyses.

9 Bases 3.7.3 are modified to reflect plant specific Main Feedwater System configuration. The valve arrangement consists of a main feedwater isolation valve (MFIV) and a main feedwater regulating valve (MFRV) in

ACTIONS (Continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. SWS supply to AFW system inoperable.	C.1	Be in MODE 3.	6 hours
	AND		
	C.2	Be in MODE 4, without reliance on steam generator for heat removal.	18 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.5.1	Verify the CST level is ≥ 35,000 gal.	12 hours
SR 3.7.5.2	Verify by administrative means OPERABILITY of backup SWS supply to the AFW System.	31 days

BASES

ACTIONS

A.1 and A.2 (continued)

OPERABILITY of the backup feedwater supply must include verification that the flow paths from the backup water supply to the AFW pumps are OPERABLE, and that the backup supply has the required volume of water available. If the backup SWS supply to the AFW System is being used to satisfy Required Action A.1, verification of OPERABILITY of the backup feedwater supply requires a visual inspection of the water supply connection between the SWS and the AFW System to verify that the valves are in place and locked closed, the tell-tale drain valve is open, and the piping is intact and free from leakage. The CST must be restored to OPERABLE status within 24 hours, because the backup supply may be performing this function in addition to its normal functions. The 4 hour Completion Time is reasonable, based on operating experience, to verify the OPERABILITY of the backup water supply. The 24 hours Completion Time is reasonable, based on an OPERABLE backup water supply being available, and the low probability of an event occurring during this time period requiring the CST.

B.1 and B.2

If the CST cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4, without reliance on the steam generator for heat removal, within 18 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

C.1 and C.2

If the service water supply to the AFW System is inoperable, the plant is not assured of a safety related cold shutdown capability. Therefore, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4, without reliance on a steam generator for heat removal, within 18 hours. The allowed Completion Times are

(continued)

BASES

ACTIONS

C.1 and C.2 (continued)

reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.5.1

This SR verifies that the CST contains the required volume of cooling water. The 12 hour Frequency is based on operating experience and the need for operator awareness of unit evolutions that may affect the CST inventory between checks. Also, the 12 hour Frequency is considered adequate in view of other indications in the control room, including alarms, to alert the operator to abnormal deviations in the CST level.

SR 3.7.5.2

This SR verifies by administrative means that the backup water supply to the AFW System from the SWS is OPERABLE. In this situation, verification by administrative means is necessary because it is not prudent to cycle the valves and risk introduction of non-feedwater grade water into the SGs. An administrative verification of OPERABILITY is simply a visual inspection of the water supply connection between the SWS and the AFW System to verify that the valves are in place and locked closed, the tell-tale drain valve is open, and the piping is intact and free from leakage.

The 31 day Frequency is based on engineering judgement, and is consistent with the procedural controls that ensure that a water supply is OPERABLE. Also, the 31 day Frequency is considered adequate in view of the infrequent need to operate valves in the flow paths due to testing or operational requirements.

REFERENCES

1. UFSAR, Section 9.2.5.
2. UFSAR, Chapter 6.
3. UFSAR, Chapter 15.

B 3.7 PLANT SYSTEMS

B 3.7.7 Service Water System (SWS)

BASES

BACKGROUND

The SWS provides a heat sink for the removal of process and operating heat from safety related components during a Design Basis Accident (DBA) or transient. During normal operation, and a normal shutdown, the SWS also provides this function for various safety related and nonsafety related components. The safety related function is covered by this LCO.

The SWS is an open loop system, consisting of four 8000 gpm capacity wet pit pumps, two redundant 30" diameter headers, and two full capacity booster pumps which supply service water to the four containment fan coolers. Two or three of the four service water pumps normally operate, depending on system demand, and discharge into the two headers, which are cross-connected at the pump discharge. Only one booster pump normally operates. Following a simultaneous Loss of Coolant Accident (LOCA) and loss of offsite power, the cooling water requirements for all four fan coolers and the other essential loads can be supplied by any two of the four SWS pumps. Service water to at least one component cooling water heat exchanger is assured with a single failure of any component. The SWS pumps and booster pumps are automatically started upon receipt of a Safety Injection (SI) signal, and all essential valves are aligned to their post accident positions. The SWS also provides a backup water supply for the Auxiliary Feedwater (AFW) System and the Isolation Valve Seal Water (IVSW) injection tank.

To prevent degradation of the SWS pressure to vital components, service water supply to the turbine building loop is isolated on actuation of low service water header pressure for one minute coincident with a Turbine Trip signal. Two isolation valves powered from emergency power sources isolate each of the two loop headers from the Turbine Building. To provide single failure capability, a third isolation valve is provided that receives power from an automatic bus transfer switch that can be powered from either emergency power source. This valve isolates both SWS headers from the Turbine Building.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.8.2

This SR verifies that the SWS is available to cool the CCW System to at least its maximum design temperature with the maximum accident or normal design heat loads for 30 days following a Design Basis Accident. The 24 hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES. This SR verifies that the service water temperature is ≤ 95°F.

REFERENCES

1. UFSAR, Section 9.2.4.
2. UFSAR Section 2.4.6.1.
3. UFSAR Section 2.1.1.2.
4. NUREG-75/024, "Final Environmental Statement Related to the Operation of H. B. Robinson Nuclear Steam-Electric Plant Unit 2," U. S. Nuclear Regulatory Commission, Washington DC 20555, April 1975, page 3-7.
5. USGS Historical Daily Values for Station Number 02130900, Black Creek Near McBee, South Carolina, Years 1960-1993.

BASES

APPLICABLE SAFETY ANALYSES (continued)

product release presented in the UFSAR, Chapter 15 (Ref. 3).

The worst case single active failure of a component of the CREFS, assuming a loss of offsite power, does not impair the ability of the system to perform its design function.

The CREFS satisfies Criterion 3 of the NRC Policy Statement.

LCO

Two redundant CREFS trains are required to be OPERABLE to ensure that at least one is available assuming a single active failure disables the other train. Total system failure could result in exceeding a dose of 5 rem whole body or its equivalent to any part of the body to the control room operator in the event of a large radioactive release.

The CREFS is considered OPERABLE when the individual components necessary to limit operator exposure are OPERABLE in both trains. A CREFS train is OPERABLE when the air cleaning unit fan, air recirculation fan, air intake damper and associated ductwork, and air exhaust damper and associated ductwork, are operable for the given train. The common air filtration unit is OPERABLE to support either train in accordance with the Ventilation Filter Testing Program. In addition, non-redundant ductwork and gravity dampers are OPERABLE to support either train. Implicit in the OPERABILITY of either train is that the integrity of the control room envelope is such that it can be pressurized to ≥0.125" water gauge relative to the outside atmosphere and to a positive pressure relative to adjacent areas at a make-up rate of ≤400 cfm in the emergency pressurization mode.

APPLICABILITY

In MODES 1, 2, 3, 4, during movement of irradiated fuel assemblies and during CORE ALTERATIONS, CREFS must be OPERABLE to control operator exposure during and following a DBA.

During movement of irradiated fuel assemblies and CORE ALTERATIONS, the CREFS must be OPERABLE to cope with the release from a fuel handling accident.

(continued)

SUPPLEMENT 1
CONVERSION PACKAGE SECTION 3.8
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 16 to Serial: RNP-RA/96-0141.

	Remove Page	Insert Page
a.	Part 1, "Markup of Current Technical Specifications (CTS)"	
	4.6-1, 4.6-2, 4.1-12, 4.6-2 4.6-3, 4.6-4, 4.6-2	4.6-1, 4.6-2, 4.1-12, 4.6-2, 4.6-3, 4.6-4, 4.6-2
b.	Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
	1 through 11	1 through 10, 10a through 10h and 11
c.	Part 3, "No Significant Hazards Consideration (NSHC), And Basis For Categorical Exclusion From 10 CFR 51.22"	
	No Changes	
d.	Part 4, "Markup of NUREG-1431, Revision 1, `Standard Technical Specifications - Westinghouse Plants,' (ISTS)"	
	3.8-10, 3.8-11, 3.8-13, 3.8-15 - 3.8-26, 3.8-27	3.8-10, 3.8-11, 3.8-13, 3.8-15 3.8-16a 3.8-26, 3.8-27
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	No Changes	
f.	Part 6, "Markup of ISTS Bases"	
	B 3.8-25, B 3.8-26, B 3.8-28 B 3.8-30, B 3.8-32, Insert B 3.8.1-9 (No Page Number) B 3.8-57, B 3.8-58	B 3.8-25, B 3.8-26, B 3.8-28 B 3.8-30, B 3.8-32, B 3.8-32a B 3.8-57, B 3.8-58
g.	Part 7, "Justification for Differences (JFDs) to ISTS Bases"	
	No Changes	
h.	Part 8, "Proposed HBRSEP, Unit No. 2 ITS"	
	3.8-7 through 3.8-12 3.8-19 through 8.8-21	3.8-7 through 3.8-12 3.8-19 through 8.8-21
i.	Part 9, "Proposed Bases to HBRSEP, Unit No. 2 ITS"	
	B 3.8-16 through B 3.8-21 B 3.8-41, B 3.8-42	B 3.8-16 through B 3.8-21 B 3.8-41, B 3.8-42

SUPPLEMENT 1
CONVERSION PACKAGE SECTION 3.8
PAGE INSERTION INSTRUCTIONS
(Continued)

Remove and insert the following pages into Enclosure 16 to Serial: RNP-RA/96-0141.

	Remove Page	Insert Page
j.	Part 10, "ISTS Generic Changes"	
	Cover Page	Cover Page
	-	TSTF-8 (28 Pages)

ITS

Specification 3.8.1 (A1)

4.6 EMERGENCY POWER SYSTEM PERIODIC TESTS

Applicability

Applies to periodic testing and surveillance requirements of the emergency power system.

Objective

To verify that the emergency power system will respond promptly and properly when required.

Specification (M25)

The following tests and surveillance shall be performed as stated:

4.6.1 Diesel Generators

from standby conditions and achieves steady state voltage ≥ 467V and ≤ 493V and frequency ≥ 58.8Hz and ≤ 61.2Hz

Verify

4.6.1.1 On a monthly basis, each diesel generator shall be tested by manually-initiated start, followed by manual synchronization with other power sources, and verification that each diesel generator is loaded and operates for ≥ 60 minutes at a load ≥ 2350 kW and ≤ 2500 kW [SR 3.8.1.2] [SR 3.8.1.3]

an actual or (A7)

4.6.1.2 Automatic start of each diesel generator, load shedding and restoration to operation of particular vital equipment, initiated by a simulated loss of all normal A-C station service power supplies together with a simulated safety injection signal. This test will be conducted at each refueling interval, to assure that the diesel generator will start and assume required load within 50 seconds after the initial starting signal. [SR 3.8.1.14]

18 Months (M5) Insert 3.8.1-1

4.6.1.3 Each diesel generator shall be inspected at each refueling. The diesel protective bypasses listed in Specification 3.7.1.c shall be demonstrated to be operable by simulating a trip signal to each of the trip devices that is bypassed and observing that the diesel does not receive a trip signal. [SR 3.8.1.10]

Verify (LA4) (LA1) (LA3) automatic trips are (d) except engine overspeed (M19)

4.6.1.4 The following diesel generator load limits shall be observed:

a. The continuous load rating for the diesel generator is 2500 kW. Continuous operation above this limit shall not be permitted, except as defined within Technical Specification 4.6.1.4.b.

b. The short-term overload rating of the diesel generator is 2750 kW. Operation at this load shall not exceed 2 hours in any 24 hour period. Operation above the short-term overload rating shall not be permitted.

(LA5)

Add SR 3.8.1.1
SR 3.8.1.4
SR 3.8.1.5
SR 3.8.1.6
SR 3.8.1.7
SR 3.8.1.8
SR 3.8.1.9
SR 3.8.1.12
SR 3.8.1.13

Add SR 3.8.1.2, Notes 1, 2
SR 3.8.1.3, Notes 1, 2, 3, 4
SR 3.8.1.4, Notes 1, 2
(A8)

Add SR 3.8.1.15
SR 3.8.1.16
(M6)

Specification 3.8.1

ITS

(A1)

18 Months

4.6.1.5 At each refueling interval, each diesel generator shall be tested by manually initiated start, followed by manual synchronization with other power sources, and verification that each diesel generator is loaded and operates for ≥ 24 hours. During the hours of this test, the load shall be maintained between 2650 kW and 2750 kW*. During the remaining 22 hours of this test, the load shall be maintained between 2400 kW and 2500 kW*. The power factor shall be maintained between 0.8 and 0.9 during the entire test.

[SR 3.8.1.11] LA5 ≥1.75 L8 A20

4.6.2 Diesel Fuel Tanks

A minimum fuel oil inventory sufficient to ensure 19,000 gallons available to the diesel generators shall be maintained at all times in the Unit 2 diesel generator fuel oil storage tank and an additional 15,000 gallons available to the diesel generators shall be maintained at all times in either the Unit 1 I-C turbine fuel oil storage tanks or a combination of the Unit 1 I-C turbine fuel oil storage tanks and the Unit 2 diesel generator fuel oil storage tank.

See 3.8.3

4.6.3 Station Batteries

4.6.3.1 The voltage and temperature of a pilot cell in each battery shall be measured and recorded daily, 5 days/week.

4.6.3.2 The specific gravity and voltage to the nearest 0.01 volt, the temperature reading of every fifth cell, the height of electrolyte and the amount of water added to each cell shall be measured and recorded monthly.

See 3.8.6

4.6.3.3 Each battery shall be subjected to an equalizing charge annually. The requirements in 4.6.3.2 above shall be performed after each equalizing charge.

See 3.8.6

4.6.3.4 At each time data is recorded, new data shall be compared with old to detect signs of abuse or deterioration.

See 3.8.6

M24

[SR 3.8.1.11 NOTE 1]

* The minimum and maximum kW values are included as guidance to avoid overloading of the engine. Loads in excess of this range for special testing under direct monitoring of the manufacturer or momentary variations due to changing bus loads shall not invalidate this test.

transients

Outside the load and power factor limits ← A20

Add SR 3.8.1.11, Note 2 ← A8

PAGE 4.6-2a HAS BEEN DELETED

Supplement 1

Specification 3.8.3 (A1) 1

TABLE 4.1-3

FREQUENCIES FOR EQUIPMENT TESTS

– ITS

		Check	Frequency	Maximum Time Between Tests	
1.	Control Rods	Rod drop times of all full length rods	Each refueling shutdown	NA*	See 3.1.4
2.	Control Rod	Partial movement of all full length rods	Every 2 weeks during reactor critical operations	20 days	
3.	Pressurizer Safety Valves	Set point	Each refueling shutdown	NA	See 3.4.10
4.	Main Steam Safety Valves	Verify each required MSSV lift setpoint per Table 4.1-4 in accordance with the Inservice Testing Program. Following testing, lift setting shall be within +/- 1%.	In accordance with the Inservice Testing Program	NA	See 3.7.1
5.	Containment Isolation Trip	Functioning	Each refueling shutdown	NA	See 3.3.2 3.6.3
6.	Refueling System Interlocks	Functioning	Prior to each refueling shutdown	NA	See 3.9.1
7.	Service Water System	Functioning	Each refueling shutdown	NA	See 3.7.7
8.	DELETED				
9.	Primary System Leakage	Evaluate	Daily when reactor coolant system is above cold shutdown condition	NA	See 3.4.13
[SR 3.8.3 1] 10.	Diesel Fuel Supply	~~Fuel Inventory~~	~~Weekly~~ 31 days	~~10 days~~ L10	
11.	DELETED				
12.	Turbine Steam Stop, Control, Reheat Stop, and Interceptor Valves	Closure	Quarterly during power operation and prior to startup	115 days	See 3.7.1

Verify a minimum supply of 19,000 gallons of diesel fuel oil available to the DGs from the Unit 2 fuel oil storage tank AND a total of 34,000 gallons available to the DGs from the combination of the Unit 1 I-C Turbine fuel oil storage tanks and the Unit 2 DG fuel oil storage tank

Supplement 1

Specification 3.8.3

ITS

A1

4.6.1.5 At each refueling interval, each diesel generator shall be tested by manually initiated start, followed by manual synchronization with other power sources, and verification that each diesel generator is loaded and operates for ≥ 24 hours. During two hours of this test, the load shall be maintained between 2650 kW and 2750 kW* During the remaining 22 hours of this test, the load shall be maintained between 2400 kW and 2500 kW*. The power factor shall be maintained between 0.8 and 0.9 during the entire test.

See 3.9.1

4.6.2 Diesel Fuel Tanks

A minimum fuel oil inventory sufficient to ensure 19,000 gallons available to the diesel generators shall be maintained at all times in the Unit 2 diesel generator fuel oil storage tank and an additional 15,000 gallons available to the diesel generators shall be maintained at all times in either the Unit 1 I-C turbine fuel oil storage tanks or a combination of the Unit 1 I-C turbine fuel oil storage tanks and the Unit 2 diesel generator fuel oil storage tank.

A12

4.6.3 Station Batteries

See 3.8.6

4.6.3.1 The voltage and temperature of a pilot cell in each battery shall be measured and recorded daily, 5 days/week

4.6.3.2 The specific gravity and voltage to the nearest 0.01 volt, the temperature reading of every fifth cell, the height of electrolyte and the amount of water added to each cell shall be measured and recorded monthly

4.6.3.3 Each battery shall be subjected to an equalizing charge annually The requirements in 4.6.3.2 above shall be performed after each equalizing charge.

4.6.3.4 At each time data is recorded, new data shall be compared with old to detect signs of abuse or deterioration

See 3.9.1

* The minimum and maximum kW values are included as guidance to avoid overloading of the engine. Loads in excess of this range for special testing under direct monitoring of the manufacturer or momentary variations due to changing bus loads shall not invalidate this test.

Add SR 3.8.3.3
SR 3.8.3.4

M9

PAGE 4.6-2a HAS BEEN DELETED

Supplement 1

Verify battery capacity is ≥ 80% for the A battery and ≥ 90% for the B battery when M11 A1

A21

[SR 3.8.4.6] 4.6.3.5 The batteries shall be subjected to a performance test once every five years. when CTS insert 4.6.3.5A discharge

A15

[SR 3.8.4.5 and Note 2] 4.6.3.6 The batteries shall be subjected to a service test at least once per 18 months, during a shutdown, to verify that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle. Surveillance 4.6.3.5 may be performed at five year intervals in lieu of this test. required

[SR 3.8.4.5 Note 1]

4.6.4 Pressurizer Heaters' Emergency Power Supply

The emergency power supply for the pressurizer heaters shall be demonstrated operable each refueling shutdown by transferring power from normal to the emergency power supply and energizing the heaters. See 3.4.9

4.6.5 Battery Chargers

[SR 3.8.4.1] Demonstrate the in-service battery charger is operable by monitoring the output voltage daily five days per week, and during normal equalizing charges. Verify terminal is 130.2V M12 7 days L4

Basis

The tests specified are designed to demonstrate that the diesel generators will provide power for operation of equipment. They also assure that the emergency generator system controls and the control systems for the safety features equipment will function automatically in the event of a loss of all normal 480 V AC station service power.[1] A6

The test to ensure proper operation of engineered safety features upon loss of AC power is initiated by tripping the breakers supplying normal power to the 480 volt buses and initiating a safety injection signal. This test demonstrates the proper tripping of motor feeder breakers, main supply and tie breakers on the affected bus, operation of the diesel generators, and sequential starting of essential equipment.

Add SR 3.8.4.2
SR 3.8.4.3
SR 3.8.4.4 M13

Add SR 3.8.4.6 Note A16

ITS

Specification 3.2.4

(A1)

Each unit as a backup to the normal standby AC power supply is capable of sequentially starting and supplying the power requirement of one complete set of safety features equipment. It can accept full load within 35 seconds after the initial starting signal.[1] and will sequentially start and supply the power requirements of one complete set of safety features equipment in 50 seconds.[2]

The 24 hour full-load test demonstrates the ability of the diesel generators to provide the necessary power to the emergency buses under accident loading conditions. The 2 hour portion of the testing at 110 percent of full-load encompasses the maximum expected analyzed load.

The testing shall be performed for a duration of not less than 24 hours which includes 2 hours at or up to 110 percent of the continuous duty rating of the generator in a 24 hour period. The remainder of the test shall be performed at a load equivalent to 100 percent of the continuous duty rating of the generator. The generator load shall be maintained at a power factor of 0.8 to 0.9 to ensure the diesel generator is tested under load conditions as close to design conditions as possible.

A supply of 19,000 gallons of fuel will ensure the operation of both diesels carrying rated design capacity for at least 48 hours or one diesel for at least 96 hours. An additional 15,000 gallons will be available to assure an adequate fuel supply for at least seven days of operation of a single diesel generator at its rated design capacity. Rated design capacity for this specification is defined as operation at 2500 kW for 22 hours and at 2750 kW for two hours in any 24-hour period.

Station batteries will deteriorate with time, but precipitous failure is extremely unlikely. The surveillance specified is that which has been demonstrated over the years to provide an indication of a cell becoming unserviceable long before it fails.

The equalizing charge, as recommended by the manufacturer, is vital to maintaining the ampere-hour capability of the battery. As a check upon the effectiveness of the equalizing charge, the battery should be loaded rather heavily and the voltage monitored as a function of time. Experience has shown that this test should be repeated at intervals to detect deterioration of cells.[3][4] If a cell has deteriorated or if a connection is loose, the voltage under load will drop excessively indicating replacement or maintenance.

A6

References

(1) FSAR Section 8.2
(2) FSAR Table 8.2-4
(3) AEC Information Letter ROE: 67-1, January 31, 1967
(4) FSAR Section 8.3.2

Specification 3.8.6 (A1)

ITS

4.6.1.5 At each refueling interval, each diesel generator shall be tested by manually-initiated start, followed by manual synchronization with other power sources, and verification that each diesel generator is loaded and operates for ≥ 24 hours. During two hours of this test, the load shall be maintained between 2650 kW and 2750 kW* During the remaining 22 hours of this test, the load shall be maintained between 2400 kW and 2500 kW* The power factor shall be maintained between 0.8 and 0.9 during the entire test. (See 3.8.1)

4.6.2 Diesel Fuel Tanks

A minimum fuel oil inventory sufficient to ensure 19,000 gallons available to the diesel generators shall be maintained at all times in the Unit 2 diesel generator fuel oil storage tank and an additional 15,000 gallons available to the diesel generators shall be maintained at all times in either the Unit 1 I-C turbine fuel oil storage tanks or a combination of the Unit 1 I-C turbine fuel oil storage tanks and the Unit 2 diesel generator fuel oil storage tank. (See 3.8.3)

4.6.3 Station Batteries (Verify battery cell parameters meet table 3.8.6-1 Category A Limits — M26)

[SR 3.8.6.1] 4.6.3.1 The voltage and temperature of a pilot cell in each battery shall be measured and recorded daily (5 days/week). (7 days — L6)

[SR 3.8.6.1] 4.6.3.2 The specific gravity and voltage (to the nearest 0.01 volt), the temperature reading of every fifth cell, the height of electrolyte and the amount of water added to each cell shall be measured and recorded monthly. (LA7) (7 days — M25)

4.6.3.3 Each battery shall be subjected to an equalizing charge annually. The requirements in 4.6.3.2 above shall be performed after each equalizing charge. (L7)

4.6.3.4 At each time data is recorded, new data shall be compared with old to detect signs of abuse or deterioration. (LA7)

* The minimum and maximum kW values are included as guidance to avoid overloading of the engine. Loads in excess of this range for special testing under direct monitoring of the manufacturer or momentary variations due to changing bus loads shall not invalidate this test. (See 3.8.1)

Add LCO
Applicability
SR 3.8.6.2
SR 3.8.6.3 (M15)

Add RA A.1, A.2, A.3 (L3)

PAGE 4.6-2a HAS BEEN DELETED

Add RA B.1 (A22)

ADMINISTRATIVE CHANGES

A1 In the conversion of the H.B. Robinson Steam Electric Plant (HBRSEP), Unit No.2 Current Technical Specification (CTS) to the proposed plant specific Improved Technical Specifications (ITS) certain wording preferences or conventions are adopted which do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make ITS consistent with the conventions in the - Standard Technical Specifications, Westinghouse Plants NUREG-1431, Rev 1 (i.e., Improved Standard Technical Specifications (ISTS)).

A2 Not Used.

A3 CTS 3.7.1.d requires two diesel generators be OPERABLE. ITS includes the additional phrase ". . . capable of supplying the onsite power distribution system. The requirements of the additional phrase are consistent with the definition of OPERABLE. Therefore, this is an administrative change and is consistent with ISTS.

A4 CTS 3.7.2.d, Note 1 permits diesel engine pre-lube followed by a warmup period. The prepositional phrase at the beginning of the note is not explicitly retained. This phrase serves to limit the allowance to DG operability testing. ITS SR 3.8.1.2 includes the specified allowance for pre-lube and warmup. Since performance of this SR is operability testing, specific retention of the involved phrase is unnecessary.

The last two sentences to this note are not explicitly retained. The sentence serves to define the required testing. DG loading is not required while attainment of steady-state voltage and frequency is required. SR 3.8.1.2 is the comparable ITS requirement. This SR does not require DG loading and explicitly requires achieving a steady state voltage and frequency.

CTS 4.6.1.1 requires monthly testing of the DG. Although this specification does not explicitly require achievement of steady state voltage and frequency, the requirements are contained within CTS 3.7.2.e, Note 1. SR 3.8.1.2 is the comparable ITS requirement. This SR explicitly requires achieving a steady state voltage and frequency. Therefore, these are administrative changes and are consistent with ISTS.

A5 Not used.

A6 The CTS bases are not retained in the ITS, but are replaced in their entirety. The ITS includes significantly expanded and improved bases.

The bases do not define or impose any specific requirements but serve to explain, clarify and document the reasons (i.e., bases) for the associated specification. The bases are not part of the Technical Specifications required by 10 CFR 50.36. Therefore, this is an administrative change and is consistent with ISTS.

A7 CTS 4.6.1.2 specifies DG testing initiated by a simulated loss of all station AC power supplies together with a simulated SI signal. ITS SR 3.8.1.15 permits an actual event and therefore an actual signals to satisfy the SR requirements. The results of the testing are not affected by the nature of the initiating signal since the system cannot discriminate whether the signals are actual or simulated. Therefore, this is an administrative change and is consistent with ISTS.

A8 CTS notes comparable to SR 3.8.1.2, Note 1 and 3; SR 3.8.1.3, Notes 1 through 4; SR 3.8.1.11 Note 2 and SR 3.8.1.15, Notes 1 and 2 do not exist.

SR 3.8.1.2, Note 1 specifies that performance of SR 3.8.1.7 satisfies the requirements of SR 3.8.1.2. The performance of any SR which satisfies the requirements of another SR is always acceptable. SR 3.8.1.2, Note 3 permits use of modified start procedures recommended by the DG manufacturer for this surveillance. CTS 4.6.1.1 which is the comparable CTS requirement does not preclude the use of modified start procedures.

SR 3.8.1.3, Note 1 permits gradual loading of a DG as recommended by the DG manufacturer. CTS 4.6.1.1 which is the comparable CTS requirement does not preclude the use of gradual loading procedures. SR 3.8.1.3, Note 2 states that momentary transients outside the load range do not invalidate the test. CTS 4.6.1.1 which is the comparable CTS requirement is silent regarding momentary transients, but it a reasonable conclusion that such momentary transients outside the load range are not indicative of a DG operability concern and are within the realm of engineering judgement with respect to the impact on test results. SR 3.8.1.3, Note 3 specifies that the SR be performed on one DG at a time. Performance of this SR results in inoperability of the DG being tested. Consequently, concurrent performance of this SR on both DGs is not permitted by the CTS since this is not an allowable condition. SR 3.8.1.3, Note 4 requires that this SR be preceded by and immediately follow without shutdown a successful performance of SR 3.8.1.1 or SR 3.8.1.7. Although a CTS requirement comparable to SR 3.8.1.7 does not exist, the interrelationship between SR 3.8.1.2 and SR 3.8.1.3 is consistent with comparable CTS requirements specified in 4.6.1.1.

SR 3.8.1.11, Note 2 specifies that the test shall not be performed in MODES 1 or 2. CTS 4.6.1.5 which is the comparable CTS requirement requires the test be performed at refueling intervals, while the performance of the test itself precludes performance during operation with the reactor critical due to its impact on equipment required to be OPERABLE. The CTS does not preclude taking credit for an actual event which satisfies the test requirements. This allowance is maintained in the Bases of ITS SR 3.0.1.

SR 3.8.1.14, Note 1 specifies that the DG start may be preceded by a pre-lube. CTS 4.6.1.2 which is the comparable CTS requirement does not preclude a pre-lube. SR 3.8.1.14, Note 2 specifies that the test shall not be performed in MODES 1, 2, 3 or 4. CTS 4.6.1.2 which is the comparable CTS requirement requires the test be performed at refueling intervals, while the performance of the test itself precludes performance during conditions other than cold shutdown due to its impact on associated equipment otherwise required to be OPERABLE. The CTS does not preclude taking credit for an actual event which satisfies the test requirements. This allowance is maintained in the Bases of ITS SR 3.0.1.

Therefore, these are administrative changes and are consistent with ISTS.

A9 Some CTS specifications provide a greater level of detail than that consistent with the format and content of the ITS. A portion of these items involve including parametric values in LCO type specifications in the CTS. For these items the parametric values are retained in ITS SRs. Other items include listings of components, features, attributes, etc. associated with OPERABILITY of CTS equipment. The ITS does not retain the specific listings since they are generically encompassed within the definition of OPERABLE specified in ITS Section 1.1, Definitions. Therefore, this is an administrative change and is consistent with ISTS.

A10 CTS does not contain a note comparable to ITS 3.8.3, Actions Note. This note permits separate condition entry for each DG. The CTS requirements for DG fuel oil involve the fuel oil storage tanks common to both DGs. Therefore application of the requirements involves both DGs. Therefore, this is an administrative change and is consistent with ISTS.

A11 If the DG fuel oil is not within limits or if the DG air subsystem is inoperable, the CTS does not provide specific actions. Consistent with the definition of OPERABLE, the associated DGs are required to be declared inoperable. There are no other CTS requirements for these conditions. In these conditions, ITS 3.8.3 Required Action (RA) E.1 requires declaring the associated DGs inoperable. Therefore, these are administrative changes and are consistent with ISTS.

A12 CTS 4.6.2 provides requirements for stored DG fuel oil. Since these requirements duplicate the requirement specified in CTS 3.7.1.d, they are not separately retained in the ITS. The parameters specified are contained in ITS SR 3.8.3.1. Therefore, this is an administrative change and is consistent with ISTS.

A13 CTS 3.7.2.f, g and h collectively provide required actions and completion times for one inoperable battery and one or more associated battery chargers. These are the components which make up the DC electrical power subsystem. ITS 3.8.3 RA A.1, B.1 and B.2 provide Required Actions with associated Completion Times for one inoperable DC Power subsystem. Therefore, these are administrative changes and are consistent with ISTS.

A14 Not used.

A15 CTS 4.6.3.5 permits the battery load test performed at the 5 year frequency to be substituted for the 18 month service test. The explicit provision for substitution at the 5 year interval is not retained in the ITS. The CTS does not preclude substitution at other times. The requirements for the battery load test are more severe and generally bound the requirement for the service test. Hence successful performance of the battery load test satisfies the requirements for the battery service test. Therefore, this is an administrative change and is consistent with ISTS.

A16 A note comparable to the Note for ITS SR 3.8.4.6 does not exist. This note precludes performance of the SR in MODES 1, 2, 3 and 4. CTS does not permit performing the test in a condition other that cold shutdown, since the test and the subsequent recharging time requires the battery to be inoperable for a time greater than permitted by CTS 3.7.2.f. CTS does not preclude taking credit for such events. This allowance is maintained in the Bases of ITS SR 3.0.1. Therefore, this is an administrative change and is consistent with ISTS.

A17 Explicit requirements in the CTS for the AC instrument power distribution system do not exist, however its operability is implicitly required by the definition of OPERABLE and CTS requirements for systems and components powered from this distribution system. ITS LCO 3.8.9 requires the Train A and Train B AC instrument power distribution subsystems be OPERABLE. Therefore, these are administrative changes and are consistent with ISTS.

A18 With one or both of the thermal or magnetic trip elements inoperable for both of the molded case circuit breakers associated with either the AFW Header Discharge to S/G "A" valve, V12-16A or the Service Water Turbine Building Supply Valve (emergency supply), V6-16C, CTS does not provide any specific actions. In this condition the actions are specified by 3.0. CTS 3.0 requires the unit be placed in hot shutdown within 8 hours and cold shutdown within an additional 30 hours. ITS 3.8.9 RA D.1 and E.1 permit up to two hours to open the associated circuit breakers with the inoperable trip elements. With Required Actions and associated Completion Times not met, ITS 3.8.9 RA F.1 and F.2 requires the unit be placed in MODE 3 within 6 hours and MODE 5 within 36 hours. With one or both of the thermal or magnetic trip elements inoperable for both of the molded case circuit breakers associated with either the AFW Header Discharge to S/G "A" valve, V12-16A or the Service Water Turbine Building Supply Valve (emergency supply), V6-16C, both CTS and ITS require achieving hot shutdown within eight hours and cold shutdown within 38 hours. Therefore, this change is administrative changes and is consistent with ISTS.

A19 Explicit CTS requirements comparable to ITS 3.8.9 RA G.1 do not exist. With two trains of the AC, DC or AC instrumentation power electrical inoperable which result in a loss of safety function, the CTS actions are governed by 3.0. For this condition, ITS 3.8.9 RA G.1 requires immediate entry into LCO 3.0.3. CTS 3.0 and ITS 3.0.3 are comparable specification, although ITS 3.0.3 is more restrictive. The difference between CTS 3.0 and ITS LCO 3.0.3 is evaluated elsewhere. Therefore, this change is an administrative change and is consistent with ISTS.

A20 CTS 4.6.1.5 requires the DG load be maintained between 2400 kW and 2500 kW for 22 hours and between 2650 kW and 2750 kW for 1.75 hours. Additionally, CTS 4.6.1.5 states the power factor shall remain between 0.8 and 0.9 during the entire test. A CTS footnote to the surveillance states that momentary variations due to changing bus loads do not invalidate the test. ITS SR 3.8.1.11 requires similar testing of the DGs. Note 1 to SR 3.8.1.11 states that momentary transients outside the load and power factor ranges do not invalidate the test. Therefore, this change is administrative changes and is consistent with ISTS.

A21 CTS 4.6.3.5 requires performance of a load test on the batteries. ITS SR 3.8.4.6 requires performance of a performance discharge test on the batteries. Since a performance discharge test is a "load test" of the battery, this change is considered administrative and is consistent with ISTS.

A22 CTS does not provide any allowable time for battery parameters indicating an inoperable Battery. In this situation, CTS requires declaring the associated battery inoperable. ITS RA B requires

immediately declaring the associated battery inoperable. Therefore, this change is considered administrative and is consistent with ISTS.

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 CTS 3.7.1 and 3.7.2 requires AC power sources to be OPERABLE with the reactor critical and during power operation. These CTS conditions encompass ITS MODES 1 and 2. ITS 3.8.1 requires OPERABILITY of AC power sources in MODES 1, 2, 3 and 4. The AC sources are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients; and

b. Adequate core cooling is provided and containment OPERABILITY and other vital functions are maintained in the event of a postulated DBA.

CTS 3.7.1.d requires DG fuel oil requirements to be met when the reactor is critical. This CTS applicability is comparable to ITS MODES 1 and 2. ITS 3.8.3 requires applicability of the DG fuel oil requirements in MODES 1, 2, 3 and 4. The AC sources (LCO 3.8.1 and LCO 3.8.2) are required to ensure the availability of the required power to shut down the reactor and maintain it in a safe shutdown condition after an AOO or a postulated DBA. Since stored diesel fuel oil supports LCO 3.8.1 and LCO 3.8.2, stored diesel fuel oil is required to be within limits when the associated DG is required to be OPERABLE. CTS does not contain explicit requirements for the DG air subsystem. ITS 3.8.3 imposes explicit requirements for the DG air subsystem. Since DG starting air supports LCO 3.8.1 and LCO 3.8.2, starting air is required to be within limits when the associated DG is required to be OPERABLE. CTS 3.7.1.e requires station batteries, battery chargers and associated DC distribution system to be operable when the reactor is critical. This CTS applicability is comparable to ITS MODES 1 and 2. ITS 3.8.4 requires applicability of the DC sources requirements in MODES 1, 2, 3 and 4. The DC electrical power sources are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure safe unit operation and to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients; and

b. Adequate core cooling is provided, and containment integrity and other instrument functions are maintained in the event of a

postulated DBA. Therefore, these are more restrictive requirements upon unit operation and are consistent with ISTS.

M2 CTS 3.7.2.a permits the offsite circuit to be inoperable for no more than 24 hours without reporting to the NRC provided both diesel generators (DG) are OPERABLE. The specific phrasing requiring the OPERABILITY of both DGs is not retained in the ITS. With one inoperable DG, CTS 3.7.2.c permits the offsite source to be inoperable for up to 24 hours provided the reporting requirements specified in CTS 6.6.1 and CTS 6.6.2 are followed. This provision for two AC sources to be inoperable for up to 24 hours is not retained in ITS. ITS 3.8.1 RA D.1 requires immediate entry in LCO 3.0.3 if two or more AC sources are inoperable. This Condition corresponds to a level of degradation in which all redundancy in the AC electrical power supplies has been lost. At this severely degraded level, any further losses in the AC electrical power system will cause a loss of function. Therefore, no additional time is justified for continued operation. The unit is required by LCO 3.0.3 to commence a controlled shutdown. Therefore this aspect of this change is a more restrictive requirement upon plant operation and is consistent with ISTS.

The specific provisions in CTS 3.7.2 regarding reporting to the NRC in accordance with CTS 6.6.1 and CTS 6.6.2 are not retained in ITS. These reporting requirements invoke the requirements of 10 CFR 50.72 and 50.73. These reporting requirements remain independently applicable. Therefore, this aspect of this change is an administrative change and is consistent with ISTS.

M3 CTS 3.7.2 permits the offsite circuit to be inoperable for up to 24 hours. CTS 3.7.2.d permits one DG to be inoperable for up to 7 days. ITS 3.8.1 RA A.1 and RA B.1 include similar restrictions. Additionally ITS 3.8.1 RA A.1 and RA B.1 require that inoperability of the offsite circuit or DG be limited to 8 days from discovery to meet the LCO. The 8 day Completion Time provides a limit on time allowed in a specified condition after discovery of failure to meet the LCO. This limit is considered reasonable for situations in which Conditions A and B are entered concurrently. These are more restrictive requirements upon unit operation and are consistent with ISTS.

M4 With required actions and completion times not satisfied, CTS actions are specified by 3.0. CTS 3.0 requires the unit be placed in hot shutdown within 8 hours and cold shutdown within an additional 30 hours. For this condition ITS 3.8.1 RA C.1 and C.2 require the unit be placed in MODE 3 within 6 hours and MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach

the required unit conditions from full power conditions, in an orderly manner and without challenging plant systems. Therefore these are more restrictive requirements upon unit operation and are consistent with ISTS.

M5 CTS 4.6.1.2 requires that the test verify the DG starts and assumes required loads within 50 seconds. ITS SR 3.8.1.14 requires the diesel to start and energize load through the load sequencer. The load sequencer completes its sequential loading of the Emergency Bus within 50 seconds. Verification of the timing of the last individual load block is comparable to confirming the overall DG start timing requirements. ITS SR 3.8.1.14 specifies additional test requirements which are not included in the CTS test scope. This Surveillance is necessary to demonstrate the DG operation during a loss of offsite power actuation test signal in conjunction with an ESF actuation signal. Therefore this is a more restrictive requirement upon unit operation and is consistent with ISTS.

M6 CTS requirements comparable to ITS SR 3.8.1.1, SR 3.8.1.4 through SR 3.8.1.9, SR 3.8.1.12, SR 3.8.1.13, SR 3.8.1.15 and SR 3.8.1.16 do not exist. SR 3.8.1.1 ensures proper circuit continuity for the offsite AC electrical power supply to the onsite distribution network and availability of offsite AC electrical power. The breaker alignment verifies that each breaker is in its correct position to ensure that distribution buses and loads are connected to their preferred power source. The 7 day Frequency is adequate since breaker position is not likely to change without the operator being aware of it and because its status is displayed in the control room. SR 3.8.1.4 provides verification that the level of fuel oil in the day tank is at or above the level at which fuel oil is automatically added. The level specified is 140 gallons, which is approximately equal to 1/2 full, and is selected to ensure adequate fuel oil for a minimum of 35 minutes of DG operation at full load plus 10%. The 31 day Frequency is adequate to assure that a sufficient supply of fuel oil is available, since low level alarms are provided and facility operators would be aware of any large uses of fuel oil during this period. SR 3.8.1.5 requires Removal of water from the fuel oil day tanks once every 31 days. Microbiological fouling is a major cause of fuel oil degradation. There are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the fuel oil day tanks once every 31 days eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during DG operation. The Surveillance Frequencies are established by Regulatory Guide 1.137. SR 3.8.1.6 demonstrates that each required fuel oil transfer pump operates and transfers fuel oil from the storage tank to its associated day tank.

This is required to support continuous operation of standby power sources. This Surveillance provides assurance that the fuel oil transfer pump is OPERABLE, the fuel oil piping system is intact, the fuel delivery piping is not obstructed, and the controls and control systems for automatic fuel transfer systems are OPERABLE. The frequency of 31 days is based on the design of fuel transfer system. The pumps operate automatically in order to maintain an adequate volume of fuel oil in the day tanks during or following DG testing. SR 3.8.1.7 helps to ensure the availability of the standby electrical power supply to mitigate DBAs and transients and to maintain the unit in a safe shutdown condition. SR 3.8.1.8 demonstrates the as designed operation of the standby power sources during loss of the offsite source. This test verifies all actions encountered from the loss of offsite power, including shedding of the nonessential loads and energization of the emergency buses and respective loads from the DG. It further demonstrates the capability of the DG to automatically achieve the required voltage and frequency within the specified time. SR 3.8.1.9 demonstrates that the DG automatically starts and achieves the required voltage and frequency within the specified time (10 seconds) from the design basis actuation signal (LOCA signal) and operates for ≥ 5 minutes. The 5 minute period provides sufficient time to demonstrate stability. SR 3.8.1.12 demonstrates that the diesel engine can restart from a hot condition, such as subsequent to shutdown from normal Surveillances, and achieve the required voltage and frequency within 10 seconds. The 18 month Frequency is based on engineering judgement and is intended to be consistent with expected fuel cycle lengths. SR 3.8.1.13 requires verifying the interval between each sequenced load block. Under accident and loss of offsite power conditions, loads are sequentially connected to the bus by the automatic load sequencer. The sequencing logic controls the permissive starting signals to motor breakers to prevent overloading of the DGs due to high motor starting currents. The Frequency of 18 months takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. SR 3.8.1.15 requires verifying the load transfer from the Unit auxiliary transformer to the start up transformer. Transfer of the 4.160 kV bus 2 power supply from the auxiliary transformer to the start up transformer demonstrates the OPERABILITY of the offsite circuit network to power the shutdown loads. Therefore these are more restrictive requirements upon unit operation and are consistent with ISTS.

M7 A CTS specification comparable to ITS Specification 3.8.2 does not exist. Specification 3.8.2 provides requirements for the AC sources in MODES 5 and 6 and during movement of irradiated fuel assemblies. The AC sources required to be OPERABLE in MODES 5 and 6 and any time during movement of irradiated fuel assemblies provide assurance that:

a. Systems to provide adequate coolant inventory makeup are available for the irradiated fuel assemblies in the core;

b. Systems needed to mitigate a fuel handling accident are available;

c. Systems necessary to mitigate the effects of events that can lead to core damage during shutdown are available; and

d. Instrumentation and control capability is available for monitoring and maintaining the unit in a cold shutdown condition or refueling condition.

Therefore this is a more restrictive requirement upon unit operation and is consistent with ISTS.

M8 The CTS does not contain explicit requirements for the DG air subsystem. However conditions which resulted in degraded conditions on the DG air subsystem are encompassed within the definition of OPERABLE for the associated DG. Provided the DG is capable of one start, a reasonable interpretation of the CTS would permit unrestricted operation, since under these conditions, the DG still remains OPERABLE. ITS 3.8.3 RA C.1 imposes a requirement that the air start receivers be pressurized to 210 psig (sufficient air for eight DG starts without refilling). If the quantity of air is less than 210 psig but greater than 100 psig (sufficient for one start), ITS 3.8.3 RA C.1 permits up to 48 hours to restore the air receiver pressure. With starting air receiver pressure < 210 psig, sufficient capacity for eight successive DG start attempts does not exist. However, as long as the receiver pressure is > 100 psig, there is adequate capacity for at least one start attempt, and the DG can be considered OPERABLE while the air receiver pressure is restored to the required limit. A period of 48 hours is considered sufficient to complete restoration to the required pressure prior to declaring the DG inoperable. Therefore this is a more restrictive requirement upon unit operation and is consistent with ISTS.

M9 CTS requirements comparable to ITS SR 3.8.3.3 and SR 3.8.3.4 do not exist. SR 3.8.3.3 ensures that, without the aid of the refill compressor, sufficient air start capacity for each DG is available. The system design requirements provide for a minimum of eight engine start cycles without recharging. The pressure specified in this SR is intended to reflect the lowest value at which the eight starts can be accomplished. The 31 day Frequency takes into account the capacity, capability, redundancy, and diversity of the AC sources and other indications available in the control room, including alarms, to alert the operator to below normal air start pressure. SR 3.8.3.4 requires removal of water from the Unit 2 DG fuel storage tank once every 31 days Microbiological fouling is a major cause of fuel oil degradation. There

are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the Unit 2 DG fuel storage tank once every 31 days eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during DG operation. Therefore these are more restrictive requirements upon unit operation and are consistent with ISTS.

M10 With one inoperable battery CTS 3.7.2.f permits two hours to restore the battery to OPERABLE status or be in hot shutdown within 8 hours and cold shutdown within the next 30 hours. With both battery chargers for a battery inoperable CTS 3.7.2.h permits two hours to restore the battery to OPERABLE status or be in hot shutdown within 8 hours and cold shutdown within the next 30 hours. ITS 3.8.4 RA A.1 permits a DC power subsystem to be inoperable for up to 2 hours, after which ITS RA B.1 and B.2 require the unit to be placed MODE 3 within 6 hours and MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems. Therefore these are more restrictive requirements upon unit operation and are consistent with ISTS.

M11 CTS 4.6.3.5 requires performance of a battery load test every 5 years, but does not prescribe definitive performance criteria. ITS SR 3.8.4.6 specifies definitive performance criteria for each battery. The acceptance criteria for this Surveillance are consistent with IEEE-450 . CTS surveillance requirements comparable to ITS SR 3.8.4.6 expanded testing requirements do not exist. If the battery shows degradation, or if the battery has reached 85% for Battery "A" or 95% for Battery "B" of its expected life, the Surveillance Frequency is reduced to 18 months. Degradation is indicated, according to IEEE-450 , when the battery capacity drops by more than 10% relative to its capacity on the previous performance test or when it is ≥ 10% below the manufacturer's rating. These Frequencies are generally consistent with the recommendations in IEEE-450 with an extra allowance for an 18 month test frequency for batteries which have shown degradation or have reached 85% for battery "A" and 95% for battery "B" of expected life. Therefore these are more restrictive requirements upon unit operation and are consistent with ISTS.

M12 CTS 4.6.5 requires verifying in-service charger voltage but does not prescribe definitive performance criteria. Since the chargers are normally connected to the batteries maintaining the float voltage, this test is also testing battery float voltage. ITS SR 3.8.4.1 specifies a definitive performance criteria for a battery on float charge. Verifying battery terminal voltage while on float charge for the

batteries helps to ensure the effectiveness of the charging system and the ability of the batteries to perform their intended function. Therefore this is a more restrictive requirement upon unit operation and is consistent with ISTS.

M13 CTS requirements comparable to ITS SR 3.8.4.2, SR 3.8.4.3 and SR 3.8.4.4 do not exist. SR 3.8.4.2 requires a visual inspection of the battery cells, cell plates, and battery racks which provides an indication of physical damage or abnormal deterioration that could potentially degrade battery performance. The 18 month frequency is based on engineering judgement and operational experience and is sufficient to detect battery and rack degradation on a long term basis. SR 3.8.4.3 requires a visual inspection of intercell, intertier, and terminal connections which provide an indication of physical damage or abnormal deterioration that could indicate degraded battery condition. The 18 month frequency is based on engineering judgement taking into consideration the likelihood of a change in component or system status. SR 3.8.4.4 requires that each battery charger be capable of supplying ≥ 300 amps at ≥ 125 V for ≥ 1 hour. These current and voltage requirements are based on the design capacity of the chargers. The battery charger supply is based on normal DC loads and the charging capacity to restore the battery from the design minimum charge state to the fully charged state. The minimum required amperes and duration ensures that these requirements can be satisfied. The Surveillance Frequency is acceptable, given the other administrative controls existing to ensure adequate charger performance during these 18 month intervals. Therefore this is a more restrictive requirement upon unit operation and is consistent with ISTS.

M14 CTS requirements comparable to ITS Specification 3.8.5 do not exist. Specification 3.8.5 provides requirements for DC sources in MODES 5, 6 and when moving irradiated fuel assemblies. The DC electrical power sources required to be OPERABLE in MODES 5 and 6, and any time during movement of irradiated fuel assemblies, provide assurance that:

a. Required features to provide adequate coolant inventory makeup are available for the irradiated fuel assemblies in the core;

b. Required features needed to mitigate a fuel handling accident are available;

c. Required features necessary to mitigate the effects of events that can lead to core damage during shutdown are available; and

d. Instrumentation and control capability is available for monitoring and maintaining the unit in a cold shutdown condition or refueling condition.

This is a more restrictive requirement upon unit operation and is consistent with ISTS.

M15 CTS requirements comparable to ITS LCO 3.8.6, SR 3.8.6.2 and SR 3.8.6.3 do not exist. The addition of these requirements is therefore a more restrictive requirement upon unit operation and is consistent with ISTS. CTS does not impose any requirements for the Batteries except when the reactor is critical. The applicability for ITS LCO 3.8.6 is when associated DC electrical power subsystems are required to be OPERABLE. ITS 3.8.5 imposes requirements for DC electrical power systems in MODES 5 and 6. The OPERABILITY of the DC subsystems is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the unit. This includes maintaining at least one train of DC sources OPERABLE during accident conditions, in the event of:

a. An assumed loss of all offsite AC power or all onsite AC power; or

b. An assumed loss of offsite power and a worst case single active failure.

SR 3.8.6.2 requires a quarterly inspection of specific gravity and voltage which is consistent with IEEE-450 (Ref. 3). In addition, within 24 hours of a battery discharge < 110 V or a battery overcharge > 150 V, the battery must be demonstrated to meet Category B limits. Transients, which may momentarily cause battery voltage to drop to ≤ 110 V, do not constitute a battery discharge provided the battery terminal voltage and float current return to pre-transient values. This inspection is also consistent with IEEE-450 (Ref. 3), which recommends special inspections following a severe discharge or overcharge, to ensure that no significant degradation of the battery occurs as a consequence of such discharge or overcharge. SR 3.8.6.3 requires verification that the average temperature of representative cells is ≥ 55°F for the "A" battery and ≥ 67°F for the "B" battery, is consistent with a recommendation of IEEE-450 (Ref. 3), that states that the temperature of electrolytes in representative cells should be determined on a quarterly basis. This SR ensures that the operating temperatures remain within an acceptable operating range. This limit is based on manufacturer recommendations. The additional applicability for battery cell parameters in MODES 5 and 6 is an additional restriction upon unit operation and is consistent with ISTS. Battery cell parameters are required when the DC power source is required to be OPERABLE.

M16 CTS requirements comparable to ITS Specification 3.8.7 do not exist. The initial conditions of Design Basis Accident (DBA) and transient analyses in the UFSAR assume Engineered Safety Feature systems are OPERABLE. The AC Instrument Bus Sources are designed to provide the

required capacity, capability, redundancy, and reliability to ensure the availability of necessary power to portions of the RPS and ESFAS instrumentation and controls so that the fuel, Reactor Coolant System, and containment design limits are not exceeded. The OPERABILITY of the AC Instrument Bus Sources is consistent with the initial assumptions of the accident analyses and is based on meeting the design basis of the unit. This includes maintaining required AC instrument buses OPERABLE during accident conditions in the event of:

a. An assumed loss of all offsite AC electrical power or all onsite AC electrical power; or

b. An assumed loss of offsite power and a worst case single active failure.

Therefore this is a more restrictive requirement upon unit operation and is consistent with ISTS.

M17 CTS requirements comparable to ITS Specification 3.8.8 do not exist. The initial conditions of Design Basis Accident (DBA) and transient analyses in the UFSAR assume Engineered Safety Feature systems are OPERABLE. The AC Instrument Bus Sources are designed to provide the required capacity, capability, redundancy, and reliability to ensure the availability of necessary power to the Reactor Protective System and Engineered Safety Features Actuation System instrumentation and controls so that the fuel, Reactor Coolant System, and containment design limits are not exceeded. The OPERABILITY of the AC Instrument Bus Sources is consistent with the initial assumptions of the accident analyses and the requirements for the supported systems' OPERABILITY. The OPERABILITY of the minimum AC Instrument Bus Sources to each AC instrument bus during MODES 5 and 6 ensures that:

a. The unit can be maintained in the shutdown or refueling condition for extended periods;

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status; and

c. Adequate power is available to mitigate events postulated during shutdown, such as a fuel handling accident.

Therefore this is a more restrictive requirement upon unit operation and is consistent with ISTS.

M18 With the exception of the LCO for DC distribution systems and certain surveillance requirement associated with circuit protection features, CTS requirements comparable to ITS 3.8.9 do not exist. The initial

conditions of Design Basis Accident (DBA) and transient analyses in the UFSAR assume ESF systems are OPERABLE. The AC, DC, and AC instrument bus electrical power distribution systems are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that the fuel, Reactor Coolant System, and containment design limits are not exceeded.

The OPERABILITY of the AC, DC, and AC instrument bus electrical power distribution systems is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the unit. This includes maintaining power distribution systems OPERABLE during accident conditions in the event of:

a. An assumed loss of all offsite power or all onsite AC electrical power; or

b. An assumed loss of offsite power and worst case single active failure.

CTS 3.7.2.e requires the DC distribution system to be OPERABLE with the reactor critical. This CTS applicability is comparable to ITS MODES 1 and 2. ITS LCO 3.8.9 imposes requirements on the DC distribution requirements applicable in MODES 1, 2, 3 and 4. The electrical power distribution subsystems are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients; and

b. Adequate core cooling is provided, and containment OPERABILITY and other instrument functions are maintained in the event of a postulated DBA.

Therefore these are more restrictive requirements upon unit operation and are consistent with ISTS.

M19 CTS 4.6.1.3 requires the specified diesel protective bypasses be demonstrated to be OPERABLE, but does not specify a surveillance frequency. ITS SR 3.8.1.10 requires verification every 18 months that the automatic trips except engine overspeed are bypassed. Engine overspeed is the only automatic DG trip which is not bypassed. The 18 month Frequency is based on engineering judgment, taking into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency. Therefore, the

Frequency was concluded to be acceptable from a reliability standpoint. The addition of the 18 month SR frequency is a more restrictive requirement upon unit operation and is consistent with ISTS.

M20 With an inoperable DC or AC instrument bus power electrical distribution subsystem, CTS does not provide any specific actions. In this condition the actions are specified by 3.0. CTS 3.0 requires the unit be placed in hot shutdown within 8 hours and cold shutdown within an additional 30 hours. ITS 3.8.9 RA B.1 and C.1 permits up to two hours to restore the DC and AC instrument bus power electrical distribution subsystem to OPERABLE status. With Required Actions and associated Completion Times not met, ITS 3.8.9 RA F.1 and F.2 requires the unit be placed in MODE 3 within 6 hours and MODE 5 within 36 hours. With an inoperable DC or AC instrument bus power electrical distribution subsystem, both CTS and ITS require achieving hot shutdown within eight hours and cold shutdown within 38 hours. Therefore, these aspects of this change are administrative changes and are consistent with ISTS. In addition to the above requirements ITS 3.8.9 RA B.1 and C.1 limits the overall time to be in the associated Conditions to no more than 16 hours from discovery of failure to meet the LCO. The second Completion Time establishes a limit on the maximum time allowed for any combination of required distribution subsystems to be inoperable during any single contiguous occurrence of failing to meet the LCO. Therefore this aspect of this change is a more restrictive requirement upon unit operation and is consistent with ISTS.

M21 CTS 3.7.1. requires the startup transformer to be in service and the 4160 V buses 2 and 3 energized. The startup transformer and the 4160 V bus 2 and 3 comprise most, but not all, of the offsite circuit. ITS LCO 3.8.1 requires the qualified circuit between the offsite transmission network and the onsite electrical power distribution system to be OPERABLE. The inclusion of the remainder of the offsite circuit (from the 4160 V buses 2 and 3 to the 480 V buses E1 and E2 as well as the requirement the offsite circuit to be OPERABLE in lieu of energized is a more restrictive requirement upon unit operation and is consistent with ISTS. Inclusion of the remainder of the offsite circuit and the requirement for the offsite circuit to be energized as well as OPERABLE is necessary to ensure the offsite circuit is OPERABLE and energized when necessary.

M22 A CTS requirement comparable to ITS SR 3.8.9.1 does not exist. SR 3.8.9.1 verifies that the required AC, DC, and AC instrument bus electrical power distribution systems are functioning properly, with the correct circuit breaker alignment. The correct breaker alignment ensures the appropriate separation and independence of the electrical divisions is maintained, and the appropriate voltage is available to each required bus. The 7 day Frequency takes into account the redundant

capability of the AC, DC, and AC instrument bus electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions. Therefore this is a more restrictive requirements upon unit operation and is consistent with ISTS.

M23 CTS requirements comparable to ITS Specification 3.8.10 do not exist. The OPERABILITY of the minimum AC, DC, and AC instrument bus electrical power distribution subsystems during MODES 5 and 6, and any time during movement of irradiated fuel assemblies ensures that:

a. The unit can be maintained in the shutdown or refueling condition for extended periods;

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status; and

c. Adequate power is provided to mitigate events postulated during shutdown, such as a fuel handling accident.

Therefore this is a more restrictive requirement upon unit operation and is consistent with ISTS.

M24 The footnote (*) to CTS 4.6.1.5 permits loads in excess of the specified limits for special testing under direct monitoring of the manufacturer. For consistency with the NUREG, this provision is not retained in the ITS. HBR does not anticipate a need for this special testing provision. Elimination of this provision, is a more restrictive requirement upon unit operation and is consistent with ISTS.

M25 CTS 4.6.1.1 requires the DG be manually started, synchronized, loaded and run for ≥ 60 minutes within a specified load range. ITS SR 3.8.1.2 includes additional requirements regarding achieving steady state voltage and frequency within specified limits. The minimum voltage and frequency stated in the SR are those necessary to ensure the DG can accept DBA loading while maintaining acceptable voltage and frequency levels. Stable operation at the nominal voltage and frequency values is also essential to establishing DG OPERABILITY. These are additional restrictions upon unit operation and are consistent with ISTS.

M26 CTS 4.6.3.1 and 4.6.3.2 require measurement and recording of specified battery parameters but does not specify performance limitations. ITS SR 3.8.6.1 requires verification that battery parameters meet Table 3.8.6-1 limits. SR 3.8.6.1 verifies that Category A battery cell parameters are consistent with IEEE-450, which recommends regular battery inspections (at least one per month) including voltage, specific gravity, and electrolyte temperature of pilot cells. Category A defines

the normal parameter limit for each designated pilot cell in each battery. The cells selected as pilot cells are those whose temperature, voltage, and electrolyte specific gravity approximate the state of charge of the entire battery. The addition of the more prescriptive requirements encompassed within ITS SR 3.8.6.1 is an additional restriction on plant operation and is consistent with ISTS.

M27 CTS 3.7.1.b requires the 480 V buses E1 and E2 to be energized. ITS LCO 3.8.9 requires the Train A and Train B AC distribution subsystems to be OPERABLE. Requiring these trains to be OPERABLE is necessary to assure their capability to perform their specified safety function Requiring Train A and Train B distribution subsystems to be OPERABLE in lieu of energized is a more restrictive requirement upon unit operation and is consistent with the ISTS.

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA1 CTS 3.7.1.d requires that listed protective trips be bypassed. This detail is not retained in the ITS but is relocated to appropriate plant controlled documents. CTS 3.7.2.e permits, but does not require, removing the bypass of these DG protective trips after a DG has properly assumed the load on its bus. The trips are also those listed in CTS specification 3.7.1.

The details associated with the involved Specifications are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains the requirement for OPERABILITY of the AC power sources. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and utility resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA2 CTS 3.7.3 restricts the operating conditions when energizing the emergency buses through the main and unit auxiliary transformer. This restriction is not retained in ITS but is relocated to appropriate plant controlled documents.

The restriction associated with the involved Specifications is not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains the requirement for OPERABILITY of the AC power sources. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility

operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and utility resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA3 CTS 4.6.1.3 specifies the test methodology for testing the bypass of the DG protective trips. The detail regarding this test methodology are not retained in the ITS, but are relocated to appropriate plant controlled documents.

The details associated with the involved Specifications are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains the requirement for OPERABILITY of the AC power sources. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and utility resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

CTS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.11 (8)	------------------NOTES------------------ 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ TSTF-8, Rev. 2 --- Verify on an actual or simulated loss of offsite power signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ [10] seconds, 2. energizes auto-connected shutdown loads through [automatic load sequencer], 3. maintains steady state voltage ≥ [3740] (467) V and ≤ [4580] (493) V, 4. maintains steady state frequency ≥ [58.8] Hz and ≤ [61.2] Hz, and 5. supplies permanently connected [and auto-connected] shutdown loads for ≥ 5 minutes.	Insert 3.8.1-5 (11) [18 months]

[3.7.2.e]

[M6]

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.8 (9)	NOTES 1. All DG starts may be preceded by prelube period. 2. This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. TSTF-8, Rev. 2 Insert 3.8.1-6 (11) Verify on an actual or simulated Engineered Safety Feature (ESF) actuation signal each DG auto-starts from standby condition and: a. In ≤ [10] seconds after auto-start and during tests, achieves voltage ≥ [3740] V and ≤ [4580] V; b. In ≤ [10] seconds after auto-start and during tests, achieves frequency ≥ [58.8] Hz and ≤ [61.2] Hz; Insert 3.8.1.6A (37) c. Operates for ≥ 5 minutes; d. Permanently connected loads remain energized from the offsite power system; and e. Emergency loads are energized or auto-connected through the automatic load sequencer from the offsite power system.	[18 months]

[M 6]

(continued)

Supplement 1

CTS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
[4.6.1.5 * Footnote] [A 8] SR 3.8.1.14 (11)	-------------------NOTES------------------- 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. This Surveillance shall not be performed in MODE 1 or 2. However, credit may be taken for unplanned events that satisfy this SR. (TSTF-8, Rev. 2) ---	Insert 3.8.1.7A (11)
[4.6.1.5]	Verify each DG operating at a power factor ≤ [0.9] operates for ≥ 24 hours: a. For ≥ [2] (1.75) hours loaded ≥ [5250] (2650) kW and ≤ [5500] (2750) kW; and b. For the remaining hours of the test loaded ≥ [4500] (2400) kW and ≤ [5000] (2500) kW.	[18 months]
SR 3.8.1.15 (12)	-------------------NOTES------------------- 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ [2] hours loaded ≥ [4500] (2400) kW and ≤ [5000] (2500) kW. Momentary transients outside of load range do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. ---	
[M 6]	Verify each DG starts and achieves, in ≤ [10] seconds, voltage ≥ [3740] (4.67) V, and ≤ [4580] V and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.	[18 months] Insert 3.8.1-7 (37)

(continued)

CTS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.18 13	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, 3, or 4. However, credit may be taken for unplanned events that satisfy this SR. ---------- TSTF-8, Rev. 2 Verify interval between each sequenced load block is within ± [10% of design interval] 0.4 seconds for each emergency [and shutdown] load sequencer.	[18 months]
SR 3.8.1.19 14	----------NOTES---------- 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4. However, credit may be taken for unplanned events that satisfy this SR. 11 Insert 3.8.1-8 ---------- TSTF-8, Rev. 2 Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; and c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ [10] seconds,	[18 months]

[M 6]

[A 8]

[A 8]

[3.7.2.e]

[4.6.1.2]

(continued)

Insert 3.8.1-9

SR 3.8.1.15	------------------NOTE------------------ 1. This Surveillance shall not be performed in MODE 1 or 2. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ 2. SR 3.8.1.15 is not required to be met if 4.160 kV bus 2 and 480 V Emergency Bus 1 power supply is from the start up transformer. -- Verify automatic transfer capability of the 4.160 kV bus 2 and 480 V Emergency Bus 1 loads from the Unit auxiliary transformer to the start up transformer.	TSTF-8, Rev. 2 18 months

Insert 3.8.1-10

and frequency ≥ 58.8 Hz, and after steady state conditions are reached, maintains voltage ≥ 467 V and ≤ 493 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
[M 13] SR 3.8.4 ⑧ (24)	-----NOTE----- This Surveillance shall not be performed in MODE 1, 2, 3, or 4. However, credit may be taken for unplanned events that satisfy this SR. ----- (33) Verify each battery charger supplies ≥ [400] {300} amps at ≥ [125] V for ≥ [8] {1} hours. (21)	[18 months]
SR 3.8.4 ⑦ (5) [4.6.3.6]	-----NOTES----- (6) 1. The modified performance discharge test in SR 3.8.4 ⑧ may be performed in lieu of the service test in SR 3.8.4 ⑦ once per 60 {75} months. (21) [4.6.3.6] 2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4. However, credit may be taken for unplanned events that satisfy this SR. ----- TSTF-8, Rev. 2 [4.6.3.6] Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	[18 months]

(continued)

CTS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.8 (6) [A16] [4.6.3.5]	---NOTE--- This Surveillance shall not be performed in MODE 1, 2, 3, or 4. However, credit may be taken for unplanned events that satisfy this SR. (21) TSTF-8, Rev. 2	
	Verify battery capacity is ≥ [80]% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test. 80% for the "A" Battery + 91% for the "B" Battery	60 months (22) AND (18) [12] months when battery shows degradation or has reached [85]% of expected life. 85% for battery A + 95% for battery B with capacity < 100% of manufacturer's rating AND 24 months when battery has reached [85]% of the expected life with capacity ≥ 100% of manufacturer's rating (22)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.11 (continued)

consistent with manufacturer recommendations. The reason for Note 2 is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. Credit may be taken for unplanned events that satisfy this SR.

SR 3.8.1.12

This Surveillance demonstrates that the DG automatically starts and achieves the required voltage and frequency within the specified time (≤ 10 seconds) from the design basis actuation signal (LOCA signal) and operates for ≥ 5 minutes. The 5 minute period provides sufficient time to demonstrate stability. SR 3.8.1.12.d and SR 3.8.1.12.e ensure that permanently connected loads and emergency loads are energized from the offsite electrical power system on an ESF signal without loss of offsite power.

The requirement to verify the connection of permanent and autoconnected loads is intended to satisfactorily show the relationship of these loads to the DG loading logic. In certain circumstances, many of these loads cannot actually be connected or loaded without undue hardship or potential for undesired operation. For instance, ECCS injection valves are not desired to be stroked open, or high pressure injection systems are not capable of being operated at full flow, or RHR systems performing a decay heat removal function are not desired to be realigned to the ECCS mode of operation. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The Frequency of [18 months] takes into consideration unit conditions required to perform the Surveillance and is intended to be consistent with the expected fuel cycle lengths. Operating experience has shown that these components usually pass the SR when performed at the [18 month] Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

(continued)

Supplement 1

1

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.12 9 (continued)

This SR is modified by two three Notes. The reason for Note 1 is to minimize wear and tear on the DGs during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations. The reason for Note 2 is that during operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. Credit may be taken for unplanned events that satisfy this SR. Insert B 3.8.1-7

10 TSTF-8, Rev. 2 9

SR 3.8.1.13 10

This Surveillance demonstrates that DG noncritical protective functions (e.g., high jacket water temperature) are bypassed on a loss of voltage signal concurrent with an ESF actuation test signal and critical protective functions (engine overspeed, generator differential current, low lube oil pressure, high crankcase pressure, and start failure relay) trip the DG to avert substantial damage to the DG unit. The noncritical trips are normally bypassed during DBAs and provide an alarm on an abnormal engine condition. This alarm provides the operator with sufficient time to react appropriately. The DG availability to mitigate the DBA is more critical than protecting the engine against minor problems that are not immediately detrimental to emergency operation of the DG.

15 10 15

A manual switch is provided which bypasses the non-critical trips. 26

The 18 month Frequency is based on engineering judgment, taking into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

10

The SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required DG from service. Credit may be taken for unplanned events that satisfy this SR.

(continued)

1

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.14 (continued) 11

The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(3), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This Surveillance is modified by two three Notes. Note 1 states that momentary transients due to changing bus loads do not invalidate this test. Similarly, momentary power factor transients above the power factor limit will not invalidate the test. The reason for Note 2 is that during operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. Credit may be taken for unplanned events that satisfy this SR. Insert B3.8.1-8A

TSTF-8, Rev. 2

SR 3.8.1.15 12

This Surveillance demonstrates that the diesel engine can restart from a hot condition, such as subsequent to shutdown from normal Surveillances, and achieve the required voltage and frequency within [10] seconds. The [10] second time is derived from the requirements of the accident analysis to respond to a design basis large break LOCA. Insert B3.8.1-? The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(5). 10

14 based on engineering judgment & is intended to be consistent with expected fuel cycle lengths.

This SR is modified by two Notes. Note 1 ensures that the test is performed with the diesel sufficiently hot. The load band is provided to avoid routine overloading of the DG. Routine overloads may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY. The requirement that the diesel has operated for at least [2] hours at full load conditions prior to performance of this Surveillance is based on manufacturer recommendations for achieving hot conditions. Momentary transients due to changing bus loads do not invalidate this test. Note 2 allows all DG starts to be preceded by an engine prelube period to minimize wear and tear on the diesel during testing.

(continued)

(1) (10)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.17 (continued)

This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(8), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. Credit may be taken for unplanned events that satisfy this SR.

SR 3.8.1.18 (13)

Under accident [and loss of offsite power] conditions loads are sequentially connected to the bus by the [automatic load sequencer]. The sequencing logic controls the permissive and starting signals to motor breakers to prevent overloading of the DGs due to high motor starting currents. The [10%] load sequence time interval tolerance ensures that sufficient time exists for the DG to restore frequency and voltage prior to applying the next load and that safety analysis assumptions regarding ESF equipment time delays are not violated. Reference 2 provides a summary of the automatic loading of ESF buses.

(0.4 second)

The Frequency of [18 months] is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(2), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. (14)

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. Credit may be taken for unplanned events that satisfy this SR.

TSTF-8, Rev. 2

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.19 (continued)

the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations for DGs. The reason for Note 2 is that the performance of the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. Credit may be taken for unplanned events that satisfy this SR.

SR 3.8.1.20

This Surveillance demonstrates that the DG starting independence has not been compromised. Also, this Surveillance demonstrates that each engine can achieve proper speed within the specified time when the DGs are started simultaneously.

The 10 year Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9).

This SR is modified by a Note. The reason for the Note is to minimize wear on the DG during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations.

Diesel Generator Test Schedule

The DG test schedule (Table 3.8.1-1) implements the recommendations of Revision 3 to Regulatory Guide 1.9 (Ref. 3). The purpose of this test schedule is to provide timely test data to establish a confidence level associated with the goal to maintain DG reliability > 0.95 per demand.

According to Regulatory Guide 1.9, Revision 3 (Ref. 3), each DG should be tested at least once every 31 days. Whenever a DG has experienced 4 or more valid failures in the last 25 valid tests, the maximum time between tests is reduced to 7 days. Four failures in 25 valid tests is a failure rate of 0.16, or the threshold of acceptable DG performance, and

(continued)

Insert B3.8.1-9

Note 3 to this SR permits removal of the bypass for protective trips after the DG has properly assumed its loads on the bus. This reduces exposure of the DG to undue risk of damage that might render it inoperable.

Insert B3.8.1.10

SR 3.8.1.15

Transfer of the 4.160 kV bus 2 power supply from the auxiliary transformer to the start up transformer demonstrates the OPERABILITY of the offsite circuit network to power the shutdown loads. In lieu of actually initiating a circuit transfer, testing that adequately shows the capability of the transfer is acceptable. This transfer testing may include any sequence of sequential, overlapping, or total steps so that the entire transfer sequence is verified. The 18 month Frequency is based on engineering judgement taking into consideration the plant conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle length.

This SR is modified by two Notes. The reason for Note 1 is that, during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~ As stated in Note 2, automatic transfer capability to the SAT is not required to be met when the associated 4.160 kV bus and Emergency Bus are powered from the SAT. This is acceptable since the automatic transfer capability function has been satisfied in this condition.

TSTF-8, Rev. 2

Insert B3.8.1-10A

Stable operation at the nominal voltage and frequency values is also essential to establishing DG OPERABILITY, but a time constraint is not imposed. This is because a typical DG will experience a period of voltage and frequency oscillations prior to reaching steady state operation if these oscillations are not damped out by load application. This period may extend beyond the 10 second acceptance criteria and could be a cause for failing the SR.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.7 (continued)

This SR is modified by two Notes. Note 1 allows the performance of a modified performance discharge test in lieu of a service test once per 60 months.

The modified performance discharge test is a simulated duty cycle consisting of just two rates; the one minute rate published for the battery or the largest current load of the duty cycle, followed by the test rate employed for the performance test, both of which envelope the duty cycle of the service test. Since the ampere-hours removed by a rated one minute discharge represents a very small portion of the battery capacity, the test rate can be changed to that for the performance test without compromising the results of the performance discharge test. The battery terminal voltage for the modified performance discharge test should remain above the minimum battery terminal voltage specified in the battery service test for the duration of time equal to that of the service test.

A modified discharge test is a test of the battery capacity and its ability to provide a high rate, short duration load (usually the highest rate of the duty cycle). This will often confirm the battery's ability to meet the critical period of the load duty cycle, in addition to determining its percentage of rated capacity. Initial conditions for the modified performance discharge test should be identical to those specified for a service test.

The reason for Note 2 is that performing the Surveillance would perturb the electrical distribution system and challenge safety systems. Credit may be taken for unplanned events that satisfy this SR.

TSTF-8, Rev.2

SR 3.8.4.8

A battery performance discharge test is a test of constant current capacity of a battery, normally done in the as found condition, after having been in service, to detect any change in the capacity determined by the acceptance test. The test is intended to determine overall battery degradation due to age and usage.

(continued)

(1)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.8 (continued)

A battery modified performance discharge test is described in the Bases for SR 3.8.4.7. Either the battery performance discharge test or the modified performance discharge test is acceptable for satisfying SR 3.8.4.8; however, only the modified performance discharge test may be used to satisfy SR 3.8.4.8 while satisfying the requirements of SR 3.8.4.7 at the same time.

The acceptance criteria for this Surveillance are consistent with IEEE-450 (Ref. 9) and IEEE-485 (Ref. 5). These references recommend that the battery be replaced if its capacity is below 80% of the manufacturer's rating. A capacity of 80% shows that the battery rate of deterioration is increasing, even if there is ample capacity to meet the load requirements.

Insert B3.8.4-3 (45)

The Surveillance Frequency for this test is normally 60 months. If the battery shows degradation, or if the battery has reached 85% of its expected life and capacity is < 100% of the manufacturer's rating, the Surveillance Frequency is reduced to 18 months. However, if the battery shows no degradation but has reached 85% of its expected life, the Surveillance Frequency is only reduced to 24 months for batteries that retain capacity ≥ 100% of the manufacturer's rating. Degradation is indicated, according to IEEE-450 (Ref. 9), when the battery capacity drops by more than 10% relative to its capacity on the previous performance test or when it is ≥ 10% below the manufacturer's rating. These Frequencies are consistent with the recommendations in IEEE-450 (Ref. 9).

(10) 85% for Battery "A" or 95% for Battery "B"

generally

Insert B3.8.4-4 (39)

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would perturb the electrical distribution system and challenge safety systems. Credit may be taken for unplanned events that satisfy this SR.

TSTF-8, Rev.2

REFERENCES

UFSAR, Section 3.1

1. 10 CFR 50, Appendix A, GDC 17.

2. Regulatory Guide 1.6, March 10, 1971.

3. IEEE-308-[1978].

(54)

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.8	------------------NOTES------------------ 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4. 3. During periods when a diesel generator is being operated for testing purposes, its protective trips need not be bypassed after the diesel generator has properly assumed the load on its bus. --- Verify on an actual or simulated loss of offsite power signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ 10 seconds, 2. energizes auto-connected shutdown loads through automatic load sequencer, 3. maintains steady state voltage ≥ 467 V and ≤ 493 V, 4. maintains steady state frequency ≥ 58.8 Hz and ≤ 61.2 Hz, and 5. supplies permanently connected and auto-connected shutdown loads for ≥ 5 minutes.	18 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.1.9	-------------------NOTES------------------- 1. All DG starts may be preceded by prelube period. 2. This Surveillance shall not be performed in MODE 1 or 2. 3. During periods when a diesel generator is being operated for testing purposes, its protective trips need not be bypassed after the diesel generator has properly assumed the load on its bus. --	
	Verify on an actual or simulated Engineered Safety Feature (ESF) actuation signal each DG auto-starts from standby condition and: a. In ≤ 10 seconds after auto-start achieves voltage ≥ 467 V, and after steady state conditions are reached, maintains voltage ≥ 467 V and ≤ 493 V; b. In ≤ 10 seconds after auto-start achieves frequency ≥ 58.8 Hz, and after steady state conditions are reached, maintains frequency ≥ 58.8 Hz and ≤ 61.2 Hz; c. Operates for ≥ 5 minutes; d. Permanently connected loads remain energized from the offsite power system; and e. Emergency loads are energized through the automatic load sequencer from the offsite power system.	18 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.10	Verify each DG's automatic trips are bypassed except engine overspeed.	18 months
SR 3.8.1.11	------------------NOTES------------------ 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. This Surveillance shall not be performed in MODE 1 or 2. 3. During periods when a diesel generator is being operated for testing purposes, its protective trips need not be bypassed after the diesel generator has properly assumed the load on its bus. --- Verify each DG operating at a power factor ≤ 0.9 operates for ≥ 24 hours: a. For ≥ 1.75 hours loaded ≥ 2650 kW and ≤ 2750 kW; and b. For the remaining hours of the test loaded ≥ 2400 kW and ≤ 2500 kW.	18 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.12	------------------NOTES------------------ 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ 2 hours loaded ≥ 2400 kW and ≤ 2500 kW. Momentary transients outside of load range do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. --- Verify each DG starts and achieves, in ≤ 10 seconds, voltage ≥ 467 V, and frequency ≥ 58.8 Hz, and after steady state conditions are reached, maintains voltage ≥ 467 V and ≤ 493 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	18 months
SR 3.8.1.13	------------------NOTE------------------ This Surveillance shall not be performed in MODE 1, 2, 3, or 4. --- Verify interval between each sequenced load block is within ± 0.4 seconds of design interval for each emergency load sequencer.	18 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.14	-------------------NOTES------------------- 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4. 3. During periods when a diesel generator is being operated for testing purposes, its protective trips need not be bypassed after the diesel generator has properly assumed the load on its bus. --- Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; and c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ 10 seconds, 2. energizes auto-connected emergency loads through load sequencer, 3. achieves steady state voltage ≥ 467 V and ≤ 493 V, 4. achieves steady state frequency ≥ 58.8 Hz and ≤ 61.2 Hz, and	18 months

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.14	(continued) 5. supplies permanently connected and auto connected emergency loads for ≥ 5 minutes.	
SR 3.8.1.15	-------------------NOTE------------------- 1. This Surveillance shall not be perfomed in MODE 1 or 2. 2. SR 3.8.1.15 is not required to be met if 4.160 kV bus 2 and 480 V Emergency Bus 1 power supply is from the start up transformer. -- Verify automatic transfer capability of the 4.160 kV bus 2 and the 480 V Emergency bus 1 loads from the Unit auxiliary transformer to the start up transformer.	18 months
SR 3.8.1.16	-------------------NOTE------------------- All DG starts may be preceded by an engine prelube period. -- Verify when started simultaneously from standby condition, each DG achieves, in ≤ 10 seconds, voltage ≥ 467 V and frequency ≥ 58.8 Hz, and after steady state conditions are reached, maintains voltage ≥ 467 V and ≤ 493 V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz.	10 years

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources – Operating

LCO 3.8.4 The Train A and Train B DC electrical power subsystems shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One DC electrical power subsystem inoperable.	A.1 Restore DC electrical power subsystem to OPERABLE status.	2 hours
B. Required Action and Associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.4.1 Verify battery terminal voltage is ≥ 130.2 V on float charge.	7 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.2	Verify battery cells, cell plates, and racks show no visual indication of physical damage or abnormal deterioration that could degrade battery performance.	18 months
SR 3.8.4.3	Remove visible terminal corrosion, verify battery cell to cell and terminal connections are clean and tight, and are coated with anti-corrosion material.	18 months
SR 3.8.4.4	Verify each battery charger supplies ≥ 300 amps at ≥ 125 V for ≥ 1 hour.	18 months
SR 3.8.4.5	------------------NOTES------------------ 1. The performance discharge test in SR 3.8.4.6 may be performed in lieu of the service test in SR 3.8.4.5 once per 75 months. 2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4. --- Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	18 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.6	------------------NOTE------------------ This Surveillance shall not be performed in MODE 1, 2, 3, or 4. -- Verify battery capacity is ≥ 80% for the "A" Battery and 91% for the "B" battery of the manufacturer's rating when subjected to a performance discharge test.	60 months **AND** 18 months when battery shows degradation or has reached 85% for battery "A" and 95% for battery "B" of expected life.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.8 (continued)

consistent with manufacturer recommendations. The reason for Note 2 is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. Note 3 to this SR permits removal of the bypass for protective trips after the DG has properly assumed its loads on the bus. This reduces exposure of the DG to undue risk of damage that might render it inoperable.

SR 3.8.1.9

This Surveillance demonstrates that the DG automatically starts and achieves the required voltage and frequency within the specified time (10 seconds) from the design basis actuation signal (LOCA signal) and operates for ≥ 5 minutes. Stable operation at the nominal voltage and frequency values is also essential to establishing DG OPERABILITY, but a time constraint is not imposed. This is because a typical DG will experience a period of voltage and frequency oscillations prior to reaching steady state operation if these oscillations are not damped out by load application. This period may extend beyond the 10 second acceptance criteria and could be a cause for failing the SR. The 5 minute period provides sufficient time to demonstrate stability. SR 3.8.1.9.d and SR 3.8.1.9.e ensure that permanently connected loads and emergency loads are energized from the offsite electrical power system on an ESF signal without loss of offsite power.

The requirement to verify the connection of permanent and autoconnected loads is intended to satisfactorily show the relationship of these loads to the DG loading logic. In certain circumstances, many of these loads cannot actually be connected or loaded without undue hardship or potential for undesired operation. For instance, ECCS injection valves are not required to be stroked open, or high pressure injection systems are not capable of being operated at full flow, or RHR systems performing a decay heat removal function are not desired to be realigned to the ECCS mode of operation. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable. This testing may include any series of

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.9 (continued)

sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The Frequency of 18 months takes into consideration unit conditions required to perform the Surveillance and is intended to be consistent with the expected fuel cycle lengths. Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

This SR is modified by three Notes. The reason for Note 1 is to minimize wear and tear on the DGs during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations. The reason for Note 2 is that during operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. Note 3 to this SR permits removal of the bypass for protective trips after the DG has properly assumed its loads on the bus. This reduces exposure of the DG to undue risk of damage that might render it inoperable.

SR 3.8.1.10

This Surveillance demonstrates that DG noncritical protective functions (e.g., high jacket water temperature) are bypassed and critical protective functions (engine overspeed) trip the DG to avert substantial damage to the DG unit. A manual switch is provided which bypasses the non-critical trips. The noncritical trips are normally bypassed during DBAs and provide an alarm on an abnormal engine condition. This alarm provides the operator with sufficient time to react appropriately. The DG availability to mitigate the DBA is more critical than protecting the engine against minor problems that are not immediately detrimental to emergency operation of the DG.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.10 (continued)

The 18 month Frequency is based on engineering judgment, taking into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. Operating experience has shown that these components usually pass the SR when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.8.1.11

This SR requires demonstration once per 18 months that the DGs can start and run continuously at full load capability for an interval of not less than 24 hours, ≥ 1.75 hours of which is at a load equivalent to 110% of the continuous duty rating and the remainder of the time at a load equivalent to the continuous duty rating of the DG. The DG starts for this Surveillance can be performed either from standby or hot conditions. The provisions for prelubricating and warmup, discussed in SR 3.8.1.2, and for gradual loading, discussed in SR 3.8.1.3, are applicable to this SR.

In order to ensure that the DG is tested under load conditions that are as close to design conditions as possible, testing must be performed using a power factor of ≤ 0.9. This power factor is chosen to be representative of the actual design basis inductive loading that the DG would experience. The load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY. The 18 month Frequency takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This Surveillance is modified by three Notes. Note 1 states that momentary transients due to changing bus loads do not invalidate this test. Similarly, momentary power factor transients above the power factor limit will not invalidate the test. The reason for Note 2 is that during operation with the reactor critical, performance of this Surveillance

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.11 (continued)

could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. Note 3 to this SR permits removal of the bypass for protective trips after the DG has properly assumed its loads on the bus. This reduces exposure of the DG to undue risk of damage that might render it inoperable.

SR 3.8.1.12

This Surveillance demonstrates that the diesel engine can restart from a hot condition, such as subsequent to shutdown from normal Surveillances, and achieve the required voltage and frequency within 10 seconds. The 10 second time is derived from the requirements of the accident analysis to respond to a design basis large break LOCA. Stable operation at the nominal voltage and frequency values is also essential to establishing DG OPERABILITY, but a time constraint is not imposed. This is because a typical DG will experience a period of voltage and frequency oscillations prior to reaching steady state operation if these oscillations are not damped out by load application. This period may extend beyond the 10 second acceptance criteria and could be a cause for failing the SR. The 18 month Frequency is based on engineering judgement and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by two Notes. Note 1 ensures that the test is performed with the diesel sufficiently hot. The load band is provided to avoid routine overloading of the DG. Routine overloads may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY. The requirement that the diesel has operated for at least 2 hours at full load conditions prior to performance of this Surveillance is based on manufacturer recommendations for achieving hot conditions. Momentary transients due to changing bus loads do not invalidate this test. Note 2 allows all DG starts to be preceded by an engine prelube period to minimize wear and tear on the diesel during testing.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.13

Under accident and loss of offsite power conditions, loads are sequentially connected to the bus by the automatic load sequencer. The sequencing logic controls the permissive and starting signals to motor breakers to prevent overloading of the DGs due to high motor starting currents. The 0.4 seconds load sequence time interval tolerance ensures that sufficient time exists for the DG to restore frequency and voltage prior to applying the next load and that safety analysis assumptions regarding ESF equipment time delays are not violated. Reference 2 provides a summary of the automatic loading of ESF buses.

The Frequency of 18 months takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems.

SR 3.8.1.14

In the event of a DBA coincident with a loss of offsite power, the DGs are required to supply the necessary power to ESF systems so that the fuel, RCS, and containment design limits are not exceeded.

This Surveillance demonstrates the DG operation, as discussed in the Bases for SR 3.8.1.8, during a loss of offsite power actuation test signal in conjunction with an ESF actuation signal. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The Frequency of 18 months takes into consideration unit conditions required to perform the Surveillance and is intended to be consistent with an expected fuel cycle length of 18 months.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.14 (continued)

This SR is modified by three Notes. The reason for Note 1 is to minimize wear and tear on the DGs during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations for DGs. The reason for Note 2 is that the performance of the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. Note 3 to this SR permits removal of the bypass for protective trips after the DG has properly assumed its loads on the bus. This reduces exposure of the DG to undue risk of damage that might render it inoperable.

SR 3.8.1.15

Transfer of the 4.160 kV bus 2 power supply from the auxiliary transformer to the start up transformer demonstrates the OPERABILITY of the offsite circuit network to power the shutdown loads. In lieu of actually initiating a circuit transfer, testing that adequately shows the capability of the transfer is acceptable. This transfer testing may include any sequence of sequential, overlapping, or total steps so that the entire transfer sequence is verified. The 18 month Frequency is based on engineering judgement taking into consideration the plant conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle length.

This SR is modified by two Notes. The reason for Note 1 is that, during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. As stated in Note 2, automatic transfer capability to the SAT is not required to be met when the associated 4.160 kV bus and Emergency Bus are powered from the SAT. This is acceptable since the automatic transfer capability function has been satisfied in this condition.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.5 (continued)

The reason for Note 2 is that performing the Surveillance would perturb the electrical distribution system and challenge safety systems.

SR 3.8.4.6

A battery performance discharge test is a test of constant current capacity of a battery, normally done in the as found condition, after having been in service, to detect any change in the capacity determined by the acceptance test. The test is intended to determine overall battery degradation due to age and usage.

The performance discharge test may be used to satisfy SR 3.8.4.6 while satisfying the requirements of SR 3.8.4.5 at the same time.

The acceptance criteria for this Surveillance are consistent with IEEE-450 (Ref. 5). These references recommend that the battery be replaced if its capacity is below 80% of the manufacturer's rating. A capacity of 80% shows that the battery rate of deterioration is increasing, even if there is ample capacity to meet the load requirements. An acceptance criterion of 80% of rated capacity is applicable to the "A" battery only. An acceptance criterion of 91% is applicable to the "B" battery since the design margin is not as great.

The Surveillance Frequency for this test is normally 60 months. If the battery shows degradation, or if the battery has reached 85% for Battery "A" or 95% for Battery "B" of its expected life, the Surveillance Frequency is reduced to 18 months. Degradation is indicated, according to IEEE-450 (Ref. 5), when the battery capacity drops by more than 10% relative to its capacity on the previous performance test or when it is ≥ 10% below the manufacturer's rating. These Frequencies are generally consistent with the recommendations in IEEE-450 (Ref. 5) with an extra allowance for a 18 month test frequency for batteries which have shown degradation or have reached 85% for battery "A" and 95% for battery "B" of expected life.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.6 (continued)

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would perturb the electrical distribution system and challenge safety systems.

REFERENCES

1. UFSAR Section 3.1.
2. UFSAR, Chapter 8.
3. UFSAR, Chapter 6.
4. UFSAR, Chapter 15.
4. Regulatory Guide 1.93, December 1974.
6. IEEE-450-1980.

IMPROVED STANDARD TECHNICAL SPECIFICATION (ISTS) CONVERSION

CHAPTER 3.8 - ELECTRICAL POWER SYSTEMS

PART 10

ISTS GENERIC CHANGES

(TSTF 8)

Industry/TSTF Standard Technical Specification Change Traveler

Revise the SR 3.0.1 Bases to allow credit for unplanned events to meet any Surveillance

Classification: Not Classified

NUREGs Affected: ☑ 1430 ☑ 1431 ☑ 1432 ☑ 1433 ☑ 1434

Description:

Revise the Bases for SR 3.0.1 to clarify that credit may be taken for unplanned events to satisfy any SR, not just those in Section 3.8, "Electrical Power Systems".

Justification:

This change eliminates the potential confusion that may arise with respect to the application of an unplanned event which satisfies the requirements of a given SR by including a discussion in the Bases of SR 3.0.1. Currently, only Section 3.8 contains the Note which states that "credit may be taken for unplanned events that satisfy this SR." In addition, the Notes also contain a restriction on the mode of performance, such that the surveillance is not performed in a given mode where the perturbation to the electrical distribution system would cause a challenge to safety systems. The intent of the Note is applicable to any SR. The revision to the Bases for SR 3.0.1 will provide the necessary clarification so that the usage of this allowance can be applied consistently throughout the Technical Specifications.

Affected Technical Specifications

SR 3.0.1 Bases	SR Applicability
SR 3.8.1.8	AC Sources - Operating
SR 3.8.1.8 Bases	AC Sources - Operating
SR 3.8.1.9	AC Sources - Operating
SR 3.8.1.9 Bases	AC Sources - Operating
SR 3.8.1.10	AC Sources - Operating
SR 3.8.1.10 Bases	AC Sources - Operating
SR 3.8.1.11	AC Sources - Operating
SR 3.8.1.11 Bases	AC Sources - Operating
SR 3.8.1.12	AC Sources - Operating
SR 3.8.1.12 Bases	AC Sources - Operating
SR 3.8.1.13	AC Sources - Operating
SR 3.8.1.13 Bases	AC Sources - Operating
SR 3.8.1.14	AC Sources - Operating
SR 3.8.1.14 Bases	AC Sources - Operating
SR 3.8.1.16	AC Sources - Operating
SR 3.8.1.16 Bases	AC Sources - Operating

SR 3.8.1.17	AC Sources - Operating
SR 3.8.1.17 Bases	AC Sources - Operating
SR 3.8.1.18	AC Sources - Operating
SR 3.8.1.18 Bases	AC Sources - Operating
SR 3.8.1.19	AC Sources - Operating
SR 3.8.1.19 Bases	AC Sources - Operating
SR 3.8.4.6	DC Sources - Operating
SR 3.8.4.6 Bases	DC Sources - Operating
SR 3.8.4.7	DC Sources - Operating
SR 3.8.4.7 Bases	DC Sources - Operating
SR 3.8.4.8	DC Sources - Operating
SR 3.8.4.8 Bases	DC Sources - Operating

WOG Review Information

WOG-3.3

Originating Plant: Date Provided to OG: 15-Mar-95 Needed By:

Owners Group History:

WOG-03, C.3

Owners Group Resolution: Approved Date: 11-Aug-95

TSTF Review Information

TSTF Received Date: 05-Sep-95 Date Distributed to OGs for Review: 05-Sep-95

OG Review Completed: ☑ BWOG ☑ WOG ☑ CEOG ☑ BWROG

TSTF History:

TSTF Resolution: Approved Date: 05-Sep-95 TSTF- 8

NRC Review Information

NRC Received Date: 03-Oct-95 NRC Reviewer: E. Tomlinson Reviewer Phone #:

Reviewer Comments:

10/11/95 - E. Tomlinson reviewing.
11/17/95 - TSB mgmt requested reviewer to forward pkg to EELB to assist with modification of package
11/30/95 - Change rejected
6/11/96 - C. Grimes comment: He will meet with Ed Tomlinson and selected TSB staff to modify the language in LCO 3.0.1 and the general language in Bases 3.0.1.
9/18/96 - NRC approves with modifications to the Bases. Change SR 3.0.1 for NUREGs-1430, 1431, and 1432 to include "(including applicable acceptance criteria)" after "... satisfy the requirements..." in the first sentence of the paragraph to be inserted as second paragraph after SR 3.0.1.b.
9/18/96 - TSTF accepts the revisions and will create new revision.
10/15/96 - New revision forwarded to the TSTF for review.

Final Resolution: NRC Requests Changes: TSTF Will Revise Final Resolution Date:

Revision History

TSTF Revision 1 Revision Date: 08-Jan-96 Proposed by: TSTF

Revision Description:
Remarked the pages to use TSTF number instead of OG number.
The changes to SR 3.0.1 and 3.8 were marked as being PWR only when they are applicable to the BWRs. This was corrected.

Resolution: Approved Date: 08-Jan-96

TSTF Revision 2 Revision Date: 05-Oct-96 Proposed by: NRC

Revision Description:
NRC approves with modifications to the Bases. Change SR 3.0.1 for NUREGs-1430, 1431, and 1432 to include "(including applicable acceptance criteria)" after "... satisfy the requirements..." in the first sentence of the paragraph to be inserted as second paragraph after SR 3.0.1.b.

Resolution: Approved Date: 19-Dec-96

Incorporation Into the NUREGs

File to BBS/LAN Date:

File to TSTF Date:

File Rev Incoporated:

File Rev Incorporated Date

B 3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

BASES

SRs

SR 3.0.1 through SR 3.0.4 establish the general requirements applicable to all Specifications and apply at all times, unless otherwise stated.

SR 3.0.1

SR 3.0.1 establishes the requirement that SRs must be met during the MODES or other specified conditions in the Applicability for which the requirements of the LCO apply, unless otherwise specified in the individual SRs. This Specification is to ensure that Surveillances are performed to verify the OPERABILITY of systems and components, and that variables are within specified limits. Failure to meet a Surveillance within the specified Frequency, in accordance with SR 3.0.2, constitutes a failure to meet an LCO.

Systems and components are assumed to be OPERABLE when the associated SRs have been met. Nothing in this Specification, however, is to be construed as implying that systems or components are OPERABLE when:

a. The systems or components are known to be inoperable, although still meeting the SRs; or

b. The requirements of the Surveillance(s) are known not to be met between required Surveillance performances.

Surveillances do not have to be performed when the unit is in a MODE or other specified condition for which the requirements of the associated LCO are not applicable, unless otherwise specified. The SRs associated with a test exception are only applicable when the test exception is used as an allowable exception to the requirements of a Specification.

Insert →

Surveillances, including Surveillances invoked by Required Actions, do not have to be performed on inoperable equipment because the ACTIONS define the remedial measures that apply. Surveillances have to be met and performed in accordance with SR 3.0.2, prior to returning equipment to OPERABLE status.

(continued)

INSERT

Unplanned events may satisfy the requirements (including applicable acceptance criteria) for a given SR. In this case, the unplanned event may be credited as fulfilling the performance of the SR. This allowance includes those SRs whose performance is normally precluded in a given MODE or other specified condition.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.7	------------------NOTE------------------ All DG starts may be preceded by an engine prelube period. -- Verify each DG starts from standby condition and achieves in ≤ [10] seconds, voltage ≥ [3740] V and ≤ [4580] V, and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.	184 days
[SR 3.8.1.8	------------------NOTE------------------ This Surveillance shall not be performed in MODE 1 or 2. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ -- Verify [automatic [and] manual] transfer of AC power sources from the normal offsite circuit to each alternate [required] offsite circuit.	[18 months]]

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.9	-------------------NOTES------------------- 1. This Surveillance shall not be performed in MODE 1 or 2. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ 2. If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ [0.9]. --- Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and: a. Following load rejection, the frequency is ≤ [63] Hz; b. Within [3] seconds following load rejection, the voltage is ≥ [3740] V and ≤ [4580] V; and c. Within [3] seconds following load rejection, the frequency is ≥ [58.8] Hz and ≤ [61.2] Hz.	[18 months]
SR 3.8.1.10	-------------------NOTE------------------- This Surveillance shall not be performed in MODE 1 or 2. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ --- Verify each DG operating at a power factor ≤ [0.9] does not trip and voltage is maintained ≤ [5000] V during and following a load rejection of ≥ [4500] kW and ≤ [5000] kW.	[18 months]

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.11	-------------------NOTES------------------- 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ --- Verify on an actual or simulated loss of offsite power signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ [10] seconds, 2. energizes auto-connected shutdown loads through [automatic load sequencer], 3. maintains steady state voltage ≥ [3740] V and ≤ [4580] V, 4. maintains steady state frequency ≥ [58.8] Hz and ≤ [61.2] Hz, and 5. supplies permanently connected [and auto-connected] shutdown loads for ≥ 5 minutes.	[18 months]

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.12	-------------------NOTES------------------- 1. All DG starts may be preceded by prelube period. 2. This Surveillance shall not be performed in MODE 1 or 2. ~~However, credit may be taken for unplanned events that satisfy this SR~~. -- Verify on an actual or simulated Engineered Safety Feature (ESF) actuation signal each DG auto-starts from standby condition and: a. In ≤ [10] seconds after auto-start and during tests, achieves voltage ≥ [3740] V and ≤ [4580] V; b. In ≤ [10] seconds after auto-start and during tests, achieves frequency ≥ [58.8] Hz and ≤ [61.2] Hz; c. Operates for ≥ 5 minutes; d. Permanently connected loads remain energized from the offsite power system; and e. Emergency loads are energized [or auto-connected through the automatic load sequencer] from the offsite power system.	[18 months]

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.13	-----NOTE----- This Surveillance shall not be performed in MODE 1 or 2. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ ----- Verify each DG's automatic trips are bypassed on [actual or simulated loss of voltage signal on the emergency bus concurrent with an actual or simulated ESF actuation signal] except: a. Engine overspeed; [and] b. Generator differential current; c. [Low lube oil pressure;] d. [High crankcase pressure;] and e. [Start failure relay].	[18 months]

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.14	------------------NOTES------------------ 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. This Surveillance shall not be performed in MODE 1 or 2. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ --- Verify each DG operating at a power factor ≤ [0.9] operates for ≥ 24 hours: a. For ≥ [2] hours loaded ≥ [5250] kW and ≤ [5500] kW; and b. For the remaining hours of the test loaded ≥ [4500] kW and ≤ [5000] kW.	[18 months]
SR 3.8.1.15	------------------NOTES------------------ 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ [2] hours loaded ≥ [4500] kW and ≤ [5000] kW. Momentary transients outside of load range do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. --- Verify each DG starts and achieves, in ≤ [10] seconds, voltage ≥ [3740] V, and ≤ [4580] V and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.	[18 months]

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.16	------------------NOTE------------------ This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ -- Verify each DG: a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power; b. Transfers loads to offsite power source; and c. Returns to ready-to-load operation.	[18 months]
[SR 3.8.1.17	------------------NOTE------------------ This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ -- Verify, with a DG operating in test mode and connected to its bus, an actual or simulated ESF actuation signal overrides the test mode by: a. Returning DG to ready-to-load operation [; and b. Automatically energizing the emergency load from offsite power].	[18 months]]

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.18	[——NOTE—— This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ~~However, credit may be taken for unplanned events that satisfy this SR.~~] Verify interval between each sequenced load block is within ± [10% of design interval] for each emergency [and shutdown] load sequencer.	[18 months]
SR 3.8.1.19	——NOTES—— 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; and c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ [10] seconds,	[18 months]
		(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.6 (continued)

[Section XI (Ref. 11); however, the design of fuel transfer systems is such that pumps operate automatically or must be started manually in order to maintain an adequate volume of fuel oil in the day [and engine mounted] tanks during or following DG testing. In such a case, a 31 day Frequency is appropriate. Since proper operation of fuel transfer systems is an inherent part of DG OPERABILITY, the Frequency of this SR should be modified to reflect individual designs.]

SR 3.8.1.7

See SR 3.8.1.2.

[SR 3.8.1.8

Transfer of each [4.16 kV ESF bus] power supply from the normal offsite circuit to the alternate offsite circuit demonstrates the OPERABILITY of the alternate circuit distribution network to power the shutdown loads. The [18 month] Frequency of the Surveillance is based on engineering judgment, taking into consideration the unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. Operating experience has shown that these components usually pass the SR when performed at the [18 month] Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

This SR is modified by a Note. The reason for the Note is that, during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~]

SR 3.8.1.9

Each DG is provided with an engine overspeed trip to prevent damage to the engine. Recovery from the transient caused by the loss of a large load could cause diesel engine

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.9 (continued)

overspeed, which, if excessive, might result in a trip of the engine. This Surveillance demonstrates the DG load response characteristics and capability to reject the largest single load without exceeding predetermined voltage and frequency and while maintaining a specified margin to the overspeed trip. [For this unit, the single load for each DG and its horsepower rating is as follows:] This Surveillance may be accomplished by:

a. Tripping the DG output breaker with the DG carrying greater than or equal to its associated single largest post-accident load while paralleled to offsite power, or while solely supplying the bus; or

b. Tripping its associated single largest post-accident load with the DG solely supplying the bus.

As required by IEEE-308 (Ref. 12), the load rejection test is acceptable if the increase in diesel speed does not exceed 75% of the difference between synchronous speed and the overspeed trip setpoint, or 15% above synchronous speed, whichever is lower.

The time, voltage, and frequency tolerances specified in this SR are derived from Regulatory Guide 1.9 (Ref. 3) recommendations for response during load sequence intervals. The 3 seconds specified is equal to 60% of a typical 5 second load sequence interval associated with sequencing of the largest load. The voltage and frequency specified are consistent with the design range of the equipment powered by the DG. SR 3.8.1.9.a corresponds to the maximum frequency excursion, while SR 3.8.1.9.b and SR 3.8.1.9.c are steady state voltage and frequency values to which the system must recover following load rejection. The [18 month] Frequency is consistent with the recommendation of Regulatory Guide 1.108 (Ref. 9).

This SR is modified by two Notes. The reason for Note 1 is that during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~ In order to ensure that the DG is tested under load

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.10 (continued)

In order to ensure that the DG is tested under load conditions that are as close to design basis conditions as possible, testing must be performed using a power factor ≤ [0.9]. This power factor is chosen to be representative of the actual design basis inductive loading that the DG would experience.

The [18 month] Frequency is consistent with the recommendation of Regulatory Guide 1.108 (Ref. 9) and is intended to be consistent with expected fuel cycle lengths.

This SR has been modified by a Note. The reason for the Note is that during operation with the reactor critical, performance of this SR could cause perturbation to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

Reviewer's Note: The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:

a. Performance of the SR will not render any safety system or component inoperable;

b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems; and

c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.

SR 3.8.1.11

As required by Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(1), this Surveillance demonstrates the as designed operation of the standby power sources during loss of the offsite source. This test verifies all actions

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.11 (continued)

consistent with manufacturer recommendations. The reason for Note 2 is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

[SR 3.8.1.12

This Surveillance demonstrates that the DG automatically starts and achieves the required voltage and frequency within the specified time ([10] seconds) from the design basis actuation signal (LOCA signal) and operates for $\geq$ 5 minutes. The 5 minute period provides sufficient time to demonstrate stability. SR 3.8.1.12.d and SR 3.8.1.12.e ensure that permanently connected loads and emergency loads are energized from the offsite electrical power system on an ESF signal without loss of offsite power.

The requirement to verify the connection of permanent and autoconnected loads is intended to satisfactorily show the relationship of these loads to the DG loading logic. In certain circumstances, many of these loads cannot actually be connected or loaded without undue hardship or potential for undesired operation. For instance, ECCS injection valves are not desired to be stroked open, or high pressure injection systems are not capable of being operated at full flow, or RHR systems performing a decay heat removal function are not desired to be realigned to the ECCS mode of operation. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The Frequency of [18 months] takes into consideration unit conditions required to perform the Surveillance and is intended to be consistent with the expected fuel cycle lengths. Operating experience has shown that these components usually pass the SR when performed at the [18 month] Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.]

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.12 (continued)

This SR is modified by two Notes. The reason for Note 1 is to minimize wear and tear on the DGs during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations. The reason for Note 2 is that during operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

SR 3.8.1.13

This Surveillance demonstrates that DG noncritical protective functions (e.g., high jacket water temperature) are bypassed on a loss of voltage signal concurrent with an ESF actuation test signal, and critical protective functions (engine overspeed, generator differential current, [low lube oil pressure, high crankcase pressure, and start failure relay]) trip the DG to avert substantial damage to the DG unit. The noncritical trips are bypassed during DBAs and provide an alarm on an abnormal engine condition. This alarm provides the operator with sufficient time to react appropriately. The DG availability to mitigate the DBA is more critical than protecting the engine against minor problems that are not immediately detrimental to emergency operation of the DG.

The [18 month] Frequency is based on engineering judgment, taking into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. Operating experience has shown that these components usually pass the SR when performed at the [18 month] Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

The SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required DG from service. ~~Credit may be taken for unplanned events that satisfy this SR.~~

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.14 (continued)

The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(3), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This Surveillance is modified by two Notes. Note 1 states that momentary transients due to changing bus loads do not invalidate this test. Similarly, momentary power factor transients above the power factor limit will not invalidate the test. The reason for Note 2 is that during operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

SR 3.8.1.15

This Surveillance demonstrates that the diesel engine can restart from a hot condition, such as subsequent to shutdown from normal Surveillances, and achieve the required voltage and frequency within [10] seconds. The [10] second time is derived from the requirements of the accident analysis to respond to a design basis large break LOCA. The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(5).

This SR is modified by two Notes. Note 1 ensures that the test is performed with the diesel sufficiently hot. The load band is provided to avoid routine overloading of the DG. Routine overloads may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY. The requirement that the diesel has operated for at least [2] hours at full load conditions prior to performance of this Surveillance is based on manufacturer recommendations for achieving hot conditions. Momentary transients due to changing bus loads do not invalidate this test. Note 2 allows all DG starts to be preceded by an engine prelube period to minimize wear and tear on the diesel during testing.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.1.16

As required by Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(6), this Surveillance ensures that the manual synchronization and automatic load transfer from the DG to the offsite source can be made and the DG can be returned to ready to load status when offsite power is restored. It also ensures that the autostart logic is reset to allow the DG to reload if a subsequent loss of offsite power occurs. The DG is considered to be in ready to load status when the DG is at rated speed and voltage, the output breaker is open and can receive an autoclose signal on bus undervoltage, and the load sequence timers are reset.

The Frequency of [18 months] is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(6), and takes into consideration unit conditions required to perform the Surveillance.

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

[SR 3.8.1.17

Demonstration of the test mode override ensures that the DG availability under accident conditions will not be compromised as the result of testing and the DG will automatically reset to ready to load operation if a LOCA actuation signal is received during operation in the test mode. Ready to load operation is defined as the DG running at rated speed and voltage with the DG output breaker open. These provisions for automatic switchover are required by IEEE-308 (Ref. 13), paragraph 6.2.6(2).

The requirement to automatically energize the emergency loads with offsite power is essentially identical to that of SR 3.8.1.12. The intent in the requirement associated with SR 3.8.1.17.b is to show that the emergency loading was not affected by the DG operation in test mode. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the emergency loads to perform these functions is acceptable.]

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.17 (continued)

This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(8), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

SR 3.8.1.18

Under accident [and loss of offsite power] conditions loads are sequentially connected to the bus by the [automatic load sequencer]. The sequencing logic controls the permissive and starting signals to motor breakers to prevent overloading of the DGs due to high motor starting currents. The [10]% load sequence time interval tolerance ensures that sufficient time exists for the DG to restore frequency and voltage prior to applying the next load and that safety analysis assumptions regarding ESF equipment time delays are not violated. Reference 2 provides a summary of the automatic loading of ESF buses.

The Frequency of [18 months] is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(2), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.19 (continued)

the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations for DGs. The reason for Note 2 is that the performance of the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

SR 3.8.1.20

This Surveillance demonstrates that the DG starting independence has not been compromised. Also, this Surveillance demonstrates that each engine can achieve proper speed within the specified time when the DGs are started simultaneously.

The 10 year Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9).

This SR is modified by a Note. The reason for the Note is to minimize wear on the DG during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations.

Diesel Generator Test Schedule

The DG test schedule (Table 3.8.1-1) implements the recommendations of Revision 3 to Regulatory Guide 1.9 (Ref. 3). The purpose of this test schedule is to provide timely test data to establish a confidence level associated with the goal to maintain DG reliability > 0.95 per demand.

According to Regulatory Guide 1.9, Revision 3 (Ref. 3), each DG should be tested at least once every 31 days. Whenever a DG has experienced 4 or more valid failures in the last 25 valid tests, the maximum time between tests is reduced to 7 days. Four failures in 25 valid tests is a failure rate of 0.16, or the threshold of acceptable DG performance, and

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.6	------------------NOTE------------------ This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ -- Verify each battery charger supplies ≥ [400] amps at ≥ [125] V for ≥ [8] hours.	[18 months]
SR 3.8.4.7	------------------NOTES------------------ 1. The modified performance discharge test in SR 3.8.4.8 may be performed in lieu of the service test in SR 3.8.4.7 once per 60 months. 2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ -- Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	[18 months]

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.4.8	-------------------NOTE------------------- This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ -- Verify battery capacity is ≥ [80]% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	60 months AND 12 months when battery shows degradation or has reached [85]% of expected life with capacity < 100% of manufacturer's rating AND 24 months when battery has reached [85]% of the expected life with capacity ≥ 100% of manufacturer's rating

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.4.6

This SR requires that each battery charger be capable of supplying [400] amps and [125] V for ≥ [8] hours. These requirements are based on the design capacity of the chargers (Ref. 4). According to Regulatory Guide 1.32 (Ref. 10), the battery charger supply is required to be based on the largest combined demands of the various steady state loads and the charging capacity to restore the battery from the design minimum charge state to the fully charged state, irrespective of the status of the unit during these demand occurrences. The minimum required amperes and duration ensures that these requirements can be satisfied.

The Surveillance Frequency is acceptable, given the unit conditions required to perform the test and the other administrative controls existing to ensure adequate charger performance during these [18 month] intervals. In addition, this Frequency is intended to be consistent with expected fuel cycle lengths.

This Surveillance is required to be performed during MODES 5 and 6 since it would require the DC electrical power subsystem to be inoperable during performance of the test.

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would perturb the electrical distribution system and challenge safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

SR 3.8.4.7

A battery service test is a special test of battery capability, as found, to satisfy the design requirements (battery duty cycle) of the DC electrical power system. The discharge rate and test length should correspond to the design duty cycle requirements as specified in Reference 4.

The Surveillance Frequency of [18 months] is consistent with the recommendations of Regulatory Guide 1.32 (Ref. 10) and Regulatory Guide 1.129 (Ref. 11), which state that the battery service test should be performed during refueling operations or at some other outage, with intervals between tests, not to exceed [18 months].

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.7 (continued)

This SR is modified by two Notes. Note 1 allows the performance of a modified performance discharge test in lieu of a service test once per 60 months.

The modified performance discharge test is a simulated duty cycle consisting of just two rates; the one minute rate published for the battery or the largest current load of the duty cycle, followed by the test rate employed for the performance test, both of which envelope the duty cycle of the service test. Since the ampere-hours removed by a rated one minute discharge represents a very small portion of the battery capacity, the test rate can be changed to that for the performance test without compromising the results of the performance discharge test. The battery terminal voltage for the modified performance discharge test should remain above the minimum battery terminal voltage specified in the battery service test for the duration of time equal to that of the service test.

A modified discharge test is a test of the battery capacity and its ability to provide a high rate, short duration load (usually the highest rate of the duty cycle). This will often confirm the battery's ability to meet the critical period of the load duty cycle, in addition to determining its percentage of rated capacity. Initial conditions for the modified performance discharge test should be identical to those specified for a service test.

The reason for Note 2 is that performing the Surveillance would perturb the electrical distribution system and challenge safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

SR 3.8.4.8

A battery performance discharge test is a test of constant current capacity of a battery, normally done in the as found condition, after having been in service, to detect any change in the capacity determined by the acceptance test. The test is intended to determine overall battery degradation due to age and usage.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.8 (continued)

A battery modified performance discharge test is described in the Bases for SR 3.8.4.7. Either the battery performance discharge test or the modified performance discharge test is acceptable for satisfying SR 3.8.4.8; however, only the modified performance discharge test may be used to satisfy SR 3.8.4.8 while satisfying the requirements of SR 3.8.4.7 at the same time.

The acceptance criteria for this Surveillance are consistent with IEEE-450 (Ref. 9) and IEEE-485 (Ref. 5). These references recommend that the battery be replaced if its capacity is below 80% of the manufacturer's rating. A capacity of 80% shows that the battery rate of deterioration is increasing, even if there is ample capacity to meet the load requirements.

The Surveillance Frequency for this test is normally 60 months. If the battery shows degradation, or if the battery has reached 85% of its expected life and capacity is < 100% of the manufacturer's rating, the Surveillance Frequency is reduced to 12 months. However, if the battery shows no degradation but has reached 85% of its expected life, the Surveillance Frequency is only reduced to 24 months for batteries that retain capacity ≥ 100% of the manufacturer's rating. Degradation is indicated, according to IEEE-450 (Ref. 9), when the battery capacity drops by more than 10% relative to its capacity on the previous performance test or when it is ≥ [10%] below the manufacturer's rating. These Frequencies are consistent with the recommendations in IEEE-450 (Ref. 9).

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would perturb the electrical distribution system and challenge safety systems. ~~Credit may be taken for unplanned events that satisfy this SR.~~

REFERENCES

1. 10 CFR 50, Appendix A, GDC 17.

2. Regulatory Guide 1.6, March 10, 1971.

3. IEEE-308-[1978].

(continued)

Specification 3.9.1
(A1)

ITS

[ACTION A]

j. If any of the specified limiting conditions for refueling are not met, refueling of the reactor shall cease; work shall be initiated to correct the conditions so that the specified limits are met; and no operations which may increase the reactivity of the core shall be made.

k. The reactor shall be subcritical as required by 3.10.8.3. (A2)

3.8.2 The Spent Fuel Building Filter system and the Containment Purge filter system shall satisfy the following conditions:

a. The results of the in-place cold DOP and halogenated hydrocarbon tests at greater than 20 percent design flows on HEPA filters and charcoal absorber banks shall show ≥ 99 percent DOP removal and ≥ 99 percent halogenated hydrocarbon removal.

b. Verification by way of laboratory carbon sample analysis from the Spent Fuel Building filter system carbon and the Containment Purge filter system carbon to show ≥ 90 percent radioactive methyl iodide removal in accordance with test 5.b of Table 5-1 of ANSI/ASME N509-1976 except that ≥ 70 percent relative humidity air is required.

c. 1. The Spent Fuel Building refueling filter fan shall be shown to operate within ± 10% of the design flow.

2. At least one Containment purge filter fan shall be shown to operate within ± 10% of the design flow and must be operable during core alterations or movement of irradiated fuel assemblies, or at least one automatic containment isolation valve in each line penetrating the containment which provides a direct path from the containment atmosphere to the outside atmosphere shall be securely closed.

See 5.5.11

See 3.9.3

d. During fuel handling operations, the relative humidity (R.H.) of the air processed by the refueling filter systems shall be ≤ 70 percent.

See 5.5.11

e. From and after the date that the Spent Fuel Building filter system is made or found to be inoperable for any reason, fuel handling operations in the Spent Fuel Building shall be terminated immediately.

See 3.7.11

Specification 3.9.1
A1

- ITS

TABLE 4.1-3

FREQUENCIES FOR EQUIPMENT TESTS

		Check	Frequency	Maximum Time Between Tests	
1.	Control Rods	Rod drop times of all full length rods	Each refueling shutdown	NA	See 3.1.4
2.	Control Rod	Partial movement of all full length rods	Every 2 weeks during reactor critical operations	20 days	
3.	Pressurizer Safety Valves	Set point	Each refueling shutdown	NA	See 3.4.10
4.	Main Steam Safety Valves	Verify each required MSSV lift setpoint per Table 4.1-4 in accordance with the Inservice Testing Program. Following testing, lift setting shall be within +/- 1%.	In accordance with the Inservice Testing Program	NA	See 3.7.1
5.	Containment Isolation Trip	Functioning	Each refueling shutdown	NA	See 3.3.2 3.6.3
6.	Refueling System Interlocks	Functioning	Prior to each refueling shutdown	NA	LA2
7.	Service Water System	Functioning	Each refueling shutdown	NA	See 3.7.7
8.	DELETED				
9.	Primary System Leakage	Evaluate	Daily when reactor coolant system is above cold shutdown condition	NA	See 3.4.13
10.	Diesel Fuel Supply	Fuel Inventory	Weekly	10 days	See 3.8.3
11.	DELETED				
12.	Turbine Steam Stop, Control, Reheat Stop, and Interceptor Valves	Closure	Quarterly during power operation and prior to startup	115 days	See 3.7.1

Supplement 1

Specification 3.9.2

(A1)

ITS

both of the source range neutron monitors are inoperable (L5)

[ACTION B.1] [ACTION A.2]

j. If ~~any of the specified limiting conditions for refueling are not met~~, ~~refueling of the reactor~~ shall cease; work shall be initiated to correct the conditions so that the specified limits are met; and no operations which may increase the reactivity of the core shall be made. (M13) Core alterations

~~k. The reactor shall be subcritical as required by 3.10.8.3.~~ (A2)

3.8.2 The Spent Fuel Building Filter system and the Containment Purge filter system shall satisfy the following conditions:

a. The results of the in-place cold DOP and halogenated hydrocarbon tests at greater than 20 percent design flows on HEPA filters and charcoal absorber banks shall show ≥ 99 percent DOP removal and ≥ 99 percent halogenated hydrocarbon removal.

b. Verification by way of laboratory carbon sample analysis from the Spent Fuel Building filter system carbon and the Containment Purge filter system carbon to show ≥ 90 percent radioactive methyl iodide removal in accordance with test 5.b of Table 5-1 of ANSI/ASME N509-1976 except that ≥ 70 percent relative humidity air is required.

c. 1. The Spent Fuel Building refueling filter fan shall be shown to operate within ± 10% of the design flow.

2. At least one Containment purge filter fan shall be shown to operate within ± 10% of the design flow and must be operable during core alterations or movement of irradiated fuel assemblies, or at least one automatic containment isolation valve in each line penetrating the containment which provides a direct path from the containment atmosphere to the outside atmosphere shall be securely closed.

(See 5.5.11) (See 3.9.3)

d. During fuel handling operations, the relative humidity (R.H.) of the air processed by the refueling filter systems shall be ≤ 70 percent. (See 5.5.11)

e. From and after the date that the Spent Fuel Building filter system is made or found to be inoperable for any reason, fuel handling operations in the Spent Fuel Building shall be terminated immediately. (See 3.7.11)

Add RA B.2 ← (M4)

Specification 3.9.3

(A1)

ITS

Suspend CORE ALTERATIONS

j. If any of the specified limiting conditions for refueling are not met, refueling of the reactor shall cease, work shall be initiated to correct the conditions so that the specified limits are met and no operations which may increase the reactivity of the core shall be made. (L4)

[ACTION A]

Suspend movement of irradiated Fuel Assemblies in Containment

k. The reactor shall be subcritical as required by 3.10.8.3. (A2)

3.8.2 The Spent Fuel Building Filter system and the Containment Purge filter system shall satisfy the following conditions:

a. The results of the in-place cold DOP and halogenated hydrocarbon tests at greater than 20 percent design flows on HEPA filters and charcoal absorber banks shall show ≥ 99 percent DOP removal and ≥ 99 percent halogenated hydrocarbon removal.

b. Verification by way of laboratory carbon sample analysis from the Spent Fuel Building filter system carbon and the Containment Purge filter system carbon to show ≥ 90 percent radioactive methyl iodide removal in accordance with test 5.b of Table 5-1 of ANSI/ASME N509-1976 except that ≥ 70 percent relative humidity air is required. (See 5.5.11)

c. 1. The Spent Fuel Building refueling filter fan shall be shown to operate within ± 10% of the design flow.

2. At least one Containment purge filter fan shall be shown to operate within ± 10% of the design flow and must be operable during core alterations or movement of irradiated fuel assemblies, (LA8) or at least one automatic containment isolation valve in each line penetrating the containment which provides a direct path from the containment atmosphere to the outside atmosphere shall be securely closed. (A9)

d. During fuel handling operations, the relative humidity (R.H.) of the air processed by the refueling filter systems shall be ≤ 70 percent. (See 5.5.11)

e. From and after the date that the Spent Fuel Building filter system is made or found to be inoperable for any reason, fuel handling operations in the Spent Fuel Building shall be terminated immediately. (See 3.7.11)

Add SR 3.9.3.1 (M6)

Specification 3.9.4
3.9.5

ITS

[ACTION A]

Suspend loading irradiated fuel assemblies in the core immediately — L6 — A1

immediately — A10

j. If any of the specified limiting conditions for refueling are not met, ~~refueling of the reactor shall cease~~ work shall be initiated to correct the conditions so that the specified limits are met; and no operations which may increase the reactivity of the core shall be made. and close all penetrations with direct access to outside within 4 hours — M8

~~k. The reactor shall be subcritical as required by 3.10.8.3~~ — A2

3.8.2 The Spent Fuel Building Filter system and the Containment Purge filter system shall satisfy the following conditions:

a. The results of the in-place cold DOP and halogenated hydrocarbon tests at greater than 20 percent design flows on HEPA filters and charcoal absorber banks shall show ≥ 99 percent DOP removal and ≥ 99 percent halogenated hydrocarbon removal.

b. Verification by way of laboratory carbon sample analysis from the Spent Fuel Building filter system carbon and the Containment Purge filter system carbon to show ≥ 90 percent radioactive methyl iodide removal in accordance with test 5.b of Table 5-1 of ANSI/ASME N509-1976 except that ≥ 70 percent relative humidity air is required.

See 5.5.11

c. 1. The Spent Fuel Building refueling filter fan shall be shown to operate within ± 10% of the design flow.

2. At least one Containment purge filter fan shall be shown to operate within ± 10% of the design flow and must be operable during core alterations or movement of irradiated fuel assemblies, or at least one automatic containment isolation valve in each line penetrating the containment which provides a direct path from the containment atmosphere to the outside atmosphere shall be securely closed.

See 3.9.3

d. During fuel handling operations, the relative humidity (R.H.) of the air processed by the refueling filter systems shall be ≤ 70 percent.

See 5.5.11

e. From and after the date that the Spent Fuel Building filter system is made or found to be inoperable for any reason, fuel handling operations in the Spent Fuel Building shall be terminated immediately.

See 3.7.11

Add SR 3.9.4.1 — M9

Add Specification 3.9.5 — M10

ITS

[ACTION A]

j If any of the specified limiting conditions for refueling are not met, refueling of the reactor shall cease; work shall be initiated to correct the conditions so that the specified limits are met; and no operations which may increase the reactivity of the core shall be made. (See 3.9.1, 3.9.2, 3.9.4, 3.9.5)

k. The reactor shall be subcritical as required by 3.10.8.3. (A2)

3.8.2 The Spent Fuel Building Filter system and the Containment Purge filter system shall satisfy the following conditions:

a. The results of the in-place cold DOP and halogenated hydrocarbon tests at greater than 20 percent design flows on HEPA filters and charcoal absorber banks shall show ≥ 99 percent DOP removal and ≥ 99 percent halogenated hydrocarbon removal. (See 5.5.11)

b. Verification by way of laboratory carbon sample analysis from the Spent Fuel Building filter system carbon and the Containment Purge filter system carbon to show ≥ 90 percent radioactive methyl iodide removal in accordance with test 5.b of Table 5-1 of ANSI/ASME N509-1976 except that ≥ 70 percent relative humidity air is required.

c. 1. The Spent Fuel Building refueling filter fan shall be shown to operate within ± 10% of the design flow.

2. At least one Containment purge filter fan shall be shown to operate within ± 10% of the design flow and must be operable during core alterations or movement of irradiated fuel assemblies, or at least one automatic containment isolation valve in each line penetrating the containment which provides a direct path from the containment atmosphere to the outside atmosphere shall be securely closed. (See 3.9.3)

d. During fuel handling operations, the relative humidity (R.H.) of the air processed by the refueling filter systems shall be ≤ 70 percent. (See 5.5.11)

e. From and after the date that the Spent Fuel Building filter system is made or found to be inoperable for any reason, fuel handling operations in the Spent Fuel Building shall be terminated immediately. (See 3.7.11)

Add SR 3.9.6.1 (M12)

and suspend movement of irradiated fuel assemblies within containment (M17)

ADMINISTRATIVE CHANGES

A1 In the conversion of the H. B. Robinson Steam Electric Plant (HBRSEP), Unit 2 Current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS) certain wording preferences or conventions are adopted which do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make ITS consistent with the conventions in the Standard Technical Specifications, Westinghouse Plants, NUREG 1431, Revision 1 (i.e., Improved Standard Technical Specifications (ISTS)). These changes are administrative, and have no adverse impact on safety.

A2 CTS Specification 3.8.1.k, which requires that the reactor be subcritical as required by CTS Specification 3.10.8.3, is not retained in the ITS, since the Specification only states that another Specification must be met when it has applicability. This change is administrative, and has no adverse impact on safety.

A3 The CTS Bases are not retained in the ITS, but are replaced in their entirety. The ITS includes significantly expanded and improved Bases. The Bases do not define or impose any specific requirements but serve to explain, clarify and document the reasons (i.e., Bases) for the associated Specification. The Bases are not part of the Technical Specifications required by 10 CFR 50.36. This change is administrative, and has no adverse impact on safety.

A4 CTS Specification 3.8.1 has Applicability during "refueling operations." ITS Specification 3.9.3 has Applicability during "CORE ALTERATIONS," and "movement of irradiated fuel assemblies within containment." Since this change serves only to more clearly define the mode of Applicability, it is administrative and has no adverse impact on safety.

A5 CTS Specification 3.8.1.b requires the Containment Vent and Purge System be tested and verified to be OPERABLE. ITS Specification 3.9.3 requires that each valve actuate to the isolation position on an actual or simulated signal. The two tests actually accomplish the same objective, however the addition of the allowance for actuating on an actual or simulated signal only provides clarity with respect to test initiation. This change is administrative, and has no adverse impact on safety.

A6 CTS Specification 3.6.1.b, which requires that containment integrity not be violated when the reactor vessel head is removed unless a shutdown margin of at least 6% Dk/k is constantly maintained, is not retained in the ITS. ITS Specification 3.9.1 requires that the RCS boron concentration be as specified in the COLR when the reactor is in MODE 6, and the current licensing basis requires a shutdown margin of 6% Dk/k, which is retained in the COLR. Since the reactor vessel head is only removed when in MODE 6, and a shutdown margin of 6% Dk/k is required

when in MODE 6, there is no change to any requirements. This change is administrative, and has no adverse impact on safety.

A7 CTS Specification 3.8.1.e requires the refueling cavity water level to be ≥ plant elevation 272 ft - 2 in. ITS Specifications 3.9.4 and 3.9.6 require the refueling cavity water level to be ≥ 23 feet above the top of the reactor vessel flange. The plant elevation datum relates directly to 23 feet above the top of the reactor vessel flange. This change is administrative, and has no adverse impact on safety.

A8 CTS Specification 3.8.1.e requires that the refueling cavity water level be ≥ plant elevation 272 feet 2 inches whenever fuel assemblies are being moved within the reactor pressure vessel. ITS Specification 3.9.6 requires that the refueling cavity water level be ≥ 23 feet above the top of the reactor vessel flange during CORE ALTERATIONS, except during latching and unlatching of control rod drive shafts. The definition of CORE ALTERATION includes movement of "reactivity control components." The CTS does not require level to be maintained during latching and unlatching operations; therefore, there is no change in requirements. This change is administrative, and has no adverse impact on safety.

A9 With a containment purge fan inoperable (and therefore not operating), CTS 3.8.2.c.2 requires at least one automatic containment isolation valve in each line penetrating the containment which provides a direct path from the containment atmosphere to the atmosphere to be securely closed. This specification duplicates similar requirements in CTS 3.8.1.i, it is not separately retained in the ITS. The elimination of this requirement is administrative in nature since it duplicates similar requirements located elsewhere in the CTS.

A10 CTS Specification 3.8.1.j, which requires under certain circumstances, that work shall be initiated to correct the conditions so that the specified limits are met, is revised in ITS 3.9.4 Required Actions A.1, A.2, and A.3 to include a Completion Time of Immediately. Since the Completion Time of Immediately is implied in CTS 3.8.1.j, this change is administrative, and has no adverse impact on safety.

<u>TECHNICAL CHANGES - MORE RESTRICTIVE</u>

M1 CTS Specification 3.8.1.f has Applicability "during reactor vessel head removal and while loading and unloading fuel from the reactor." ITS Specification 3.9.1 has Applicability in MODE 6. This LCO is applicable in MODE 6 to ensure that the fuel in the reactor vessel will remain subcritical in this MODE. Since MODE 6 covers a much broader operational condition, this change is more restrictive and has no adverse impact on safety.

M2 CTS Specification 3.8.1.f requires a minimum boron concentration be maintained in the primary coolant system. ITS Specification 3.9.1

requires that a minimum boron concentration be maintained in the Reactor Coolant System, and in the refueling canal and refueling cavity, as well. This change is necessary, since in this MODE, the contents of the Reactor Coolant System, the refueling canal and refueling cavity are connected and intermixed. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M3 CTS Specification 3.8.1.d has Applicability "whenever core geometry is being changed." ITS Specification 3.9.2 has Applicability in MODE 6. In MODE 6, the source range neutron flux monitors must be OPERABLE to determine changes in core reactivity. There are no other direct means available to check core reactivity levels. Since MODE 6 covers a much broader operational condition, this change is more restrictive and has no adverse impact on safety.

M4 The CTS is revised to adopt ISTS Specification 3.9.2, Required Action B.2, to provide assurance that any changes in boron concentration will be detected, since both source range flux monitors are inoperable. With no source range neutron flux monitor OPERABLE, there are no direct means of detecting changes in core reactivity. However, since CORE ALTERATIONS and positive reactivity additions are not to be made, the core reactivity condition is stabilized until the source range neutron flux monitors are OPERABLE. This stabilized condition is determined by performing SR 3.9.1.1 to ensure that the required boron concentration exists. The Completion Time of 4 hours is sufficient to obtain and analyze a reactor coolant sample for boron concentration. The Frequency of once per 12 hours ensures that unplanned changes in boron concentration would be identified. The 12 hour Frequency is reasonable, considering the low probability of a change in core reactivity during this time period. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M5 CTS Table 4.1-1, Item 3, which provides frequencies for checks and calibrations of Source Range Neutron Flux monitors, contains no requirements for performance of a CHANNEL CALIBRATION. ITS Specification 3.9.2 requires performance of a CHANNEL CALIBRATION every 18 months. A CHANNEL CALIBRATION requires adjustment of the channel such that channel output responds within a specified tolerance to a channel input. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M6 The CTS is revised to adopt ITS SR 3.9.3.1, which requires a weekly verification that each required containment penetration is in the required status. This Surveillance demonstrates that each of the containment penetrations required to be in its closed position is in

that position. This Surveillance ensures that a postulated fuel handling accident that releases fission product radioactivity within the containment will not result in a release of fission product radioactivity to the environment. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M7 CTS Specification 3.8.1.e, which requires that at least one RHR loop be OPERABLE, is revised in ITS Specification 3.9.4 to require that at least one RHR train be OPERABLE, and in operation, and a NOTE is adopted which permits the required RHR train to be removed from operation for up to one hour in any 8 hour period. One RHR train must be in operation to provide:

a. Removal of decay heat;

b. Mixing of borated coolant to minimize the possibjlity of criticality; and

c. Indication of reactor coolant temperature.

Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M8 CTS Specification 3.8.1.j is revised in ITS 3.9.4 to require that, in addition to other actions, all penetrations providing direct access from containment atmosphere to outside atmosphere be closed within 4 hours. With the RHR train requirements not met, the potential exists for the coolant to boil and release radioactive gas to the containment atmosphere. Closing containment penetrations that are open to the outside atmosphere ensures dose limits are not exceeded. The Completion Time of 4 hours is reasonable, based on the low probability of the coolant boiling in that time. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M9 The CTS is revised to adopt ITS SR 3.9.4.1. This Surveillance requires verification every 12 hours that one RHR train is in operation. The Frequency of 12 hours is sufficient, considering the other indications and alarms available to the operator in the control room for monitoring the RHR System. to require verification every 12 hours that one RHR train is in operation and circulating reactor coolant. Since no other similar Specification exists, this change is more restrictive and has no adverse impact on safety.

M10 The CTS is revised to adopt ITS Specification 3.9.5 to require that two RHR trains be OPERABLE, and one RHR train in operation when in MODE 6 with the water level < 23 feet above the top of the reactor vessel flange. If the reactor coolant temperature is not maintained below

200°F, boiling of the reactor coolant could result. This could lead to a loss of coolant in the reactor vessel. Additionally, boiling of the reactor coolant could lead to a reduction in boron concentration in the coolant due to the boron plating out on components near the areas of the boiling activity. The loss of reactor coolant and the reduction of boron concentration in the reactor coolant will eventually challenge the integrity of the fuel cladding, which is a fission product barrier. Two trains of the RHR System are required to be OPERABLE, and one train in operation, in order to prevent this challenge. Since no other similar Specification exists, this change is more restrictive and has no adverse impact on safety.

M11 CTS Specification 3.8.1.e has Applicability, "Whenever fuel assemblies are being moved within the reactor pressure vessel." ITS Specification 3.9.6 has Applicability, "during movement of irradiated fuel assemblies within containment." During CORE ALTERATIONS and movement of irradiated fuel assemblies, the water level in the refueling canal and the refueling cavity is an initial condition design parameter in the analysis of a fuel handling accident in containment. This change is appropriate since a fuel handling accident can also occur when handling irradiated fuel outside the reactor vessel. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

M12 The CTS is revised to adopt ITS SR 3.9.6.1, which requires verification every 12 hours that the refueling cavity water level is ≥ 23 feet above the top of the reactor vessel flange. Verification of a minimum water level of 23 ft above the top of the reactor vessel flange ensures that the design basis for the analysis of the postulated fuel handling accident during refueling operations is met. Water at the required level above the top of the reactor vessel flange limits the consequences of damaged fuel rods that are postulated to result from a fuel handling accident inside containment. The Frequency of 24 hours is based on engineering judgment and is considered adequate in view of the large volume of water and the normal procedural controls of valve positions, which make significant unplanned level changes unlikely. Since no similar Specification exists, this change is more restrictive and has no adverse impact on safety.

M13 CTS Specification 3.8.1.d is revised to add a Required Action to suspend positive reactivity additions in the event only one source range neutron flux monitor is OPERABLE, and this requirement is retained in ITS as LCO 3.9.2 Required Action A.2. CTS Specification 3.8.1.j, which requires that "refueling of the reactor" shall cease if any of the specifications are not met, is modified to restate "refueling of the reactor" as CORE ALTERATIONS. The incorporation of these CTS requirements into ITS Required Actions A.1 and A.2 is more restrictive because the actions now apply unequivocally to a single source range neutron flux monitor inoperable, rather than one or both monitors inoperable. With only one

source range neutron flux monitor OPERABLE, redundancy has been lost. Since these instruments are the only direct means of monitoring core reactivity conditions, CORE ALTERATIONS and positive reactivity additions must be suspended immediately. This change has no adverse impact on safety.

M14 CTS Specification 3.8.1.a, which requires that all automatic containment isolation valves be operable or at least one valve be securely closed in each line penetrating the containment, is revised in ITS LCO 3.9.3.c.1 to require that at least one manual or automatic valve, blind flange, or equivalent be securely closed in each line penetrating the containment. Requiring closure of flowpaths without an automatic isolation valve is reasonable since releases can also occur via these pathways. This change is more restrictive and has no adverse impact on safety.

M15 CTS Specification 3.8.1.e, which applies the requirement for at least one RHR loop to be OPERABLE when fuel assemblies are being moved within the reactor pressure vessel, is revised in ITS for LCO 3.9.4 Applicability to MODE 6 when the water level is ≥ 23 ft. above the top of reactor vessel flange. The ITS Applicability is broader and more restrictive, and has no impact on safety.

M16 CTS Specification 3.8.1.e has Applicability, "Whenever fuel assemblies are being moved within the reactor pressure vessel." ITS Specification 3.9.6 has Applicability, "during CORE ALTERATIONS." The LCO minimizes the possibility of a fuel handling accident in containment that is beyond the assumptions of the safety analysis. Since this change imposes a broader Applicability to include movement of core and reactivity components, it is more restrictive and has no adverse impact on safety.

M17 CTS Specification 3.8.1.j is revised in ITS 3.9.6 to require that, in addition to other actions, that movement of irradiated fuel assemblies within containment be suspended. Suspending movement of irradiated fuel assemblies within the containment is necessary to ensure that a fuel handling accident cannot occur. Since this change imposes new requirements, it is more restrictive and has no adverse impact on safety.

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA1 CTS Specification 3.8.1.f requires a minimum boron concentration of 1950 ppm. This detail is not retained in the ITS and is relocated to licensee controlled documents.

The details associated with this Specification are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains system OPERABILITY requirements, including

limitations on shutdown margin and/or boron concentration, where appropriate. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA2 CTS Table 4.1-3 (Item 6), requires performance of functional checks on Refueling System Interlocks prior to each refueling shutdown. This detail is not retained in the ITS and is relocated to licensee controlled documents.

The details associated with the involved Specification are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains the requirement for OPERABILITY of systems required for refueling operations. The possibility of a fuel handling incident is remote because of the administrative controls and physical limitations imposed on fuel handling operations. All refueling operations are conducted in accordance with prescribed procedures, under direct supervision of a licensed SRO who has no other concurrent responsibilities during such operations. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA3 CTS Specification 3.10.8.3 requires the shutdown margin to be at least 6% Dk/k when the reactor is in the refueling operation mode. This detail is not retained in the ITS and is relocated to licensee controlled documents.

The details associated with this Specification are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains the requirement that the boron concentration in the RCS, refueling cavity, and refueling canal be maintained within the limits specified in the COLR. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of this detail is acceptable.

LA4 CTS Specification 3.8.1.d requires the two Source Range Neutron Flux monitors to have continuous visual indication in the control room and one with audible indication available in containment. This detail is not retained in the ITS and is relocated to the Bases.

The details associated with this Specification are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains the OPERABILITY requirements for the Source Range Neutron Flux instrumentation. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of this detail is acceptable.

LA5 CTS Specification 3.8.1.i requires that containment purge exhaust flow be discharged through HEPA and impregnated charcoal filters. This detail is not retained in the ITS and is relocated to licensee controlled documents.

The details associated with this Specification are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains the OPERABILITY requirements for the Containment Purge System. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of this detail is acceptable.

LA6 CTS Specification 3.8.1.e requires that during refueling operations, T_{avg} must be $\leq 140°F$. This detail is not retained in the ITS and is relocated to licensee controlled documents.

The details associated with this Specification are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains the RCS temperature requirements for MODE 6 operation. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of this detail is acceptable.

LA7 CTS Specification 3.8.1.h requires that movement of fuel within the core not be initiated prior to 100 hours after shutdown. This detail is not retained in the ITS and is relocated to licensee controlled documents.

Although this Specification satisfies criterion 2 of the Technical Specification Selection Criteria in 10 CFR 50.36(c)(2)(ii), the details associated with this Specification are not required to be in the ITS to provide adequate protection of the public health and safety, since the activities necessary prior to commencing movement of irradiated fuel ensure that there will normally be greater than the 100 hours of subcriticality before movement of any irradiated fuel takes place. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of this detail is acceptable, and is consistent with NUREG-1431.

LA8 CTS 3.8.2.c.2 includes a detail that requires at least one Containment Purge Filter Fan to be OPERABLE during core alterations or movement of irradiated fuel assemblies. The requirement that the purge fan is OPERABLE is implicit in the USFAR requirement that the ventilation systems are in operation during refueling operations. Therefore, the explicit requirement that at least one fan be OPERABLE is relocated to licensee controlled documents.

This detail associated with this Specification are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains the requirements that penetration pathways providing direct access between containment attmosphere and outside atmosphere be capable of being closed by an OPERABLE Containment Ventilation Isolation System. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of this detail is acceptable.

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CTS Specification 3.8.1.f requires that boron concentration be verified once each shift. ITS Specification 3.9.1 requires that boron concentration be verified at a Frequency of 72 hours. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because industry operating experience has shown that 72 hours is a reasonable Frequency in which to verify the boron

concentration of representative samples, considering that the limiting boron dilution event occurs in MODE 5, and the OPERABILITY requirements of the Source Range Neutron Flux instrumentation. This change is consistent with NUREG-1431.

L2 CTS Specification 3.8.1.a requires that the equipment door be properly closed during refueling operations. ITS Specification 3.9.3 requires that the equipment hatch be closed and held in place by 4 bolts. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because the Applicability of this Specification is during a MODE when the RCS is cooled down and depressurized with the reactor head removed. In this MODE, the most severe radiological consequences result from a fuel handling accident. There are no accidents that could occur with the plant in this MODE that would produce sufficient pressure to require an air tight equipment hatch seal. This change is consistent with NUREG-1431.

L3 CTS Specification 3.8.1.i requires that, under certain conditions, one automatic containment isolation valve be securely closed in each line penetrating the containment. This requirement has been revised in ITS LCO 3.9.3.c.2 to require that each penetration be capable of being closed by an OPERABLE containment ventilation. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because the requirements for isolation of the penetrations have not changed. This change in combination with the change to CTS Specification 3.8.1.a, which was incorporated into ITS LCO 3.9.3.a, 3.9.3.b, and 3.9.3.c.1, provides the same degree of protection required by the applicable safety analyses. This change is consistent with NUREG-1431.

L4 CTS Specification 3.8.1.j requires that, if the specified limiting conditions for refueling are not met, refueling of the reactor shall cease, work be initiated to correct the conditions so that the specified limits are met, and no operations which may increase the reactivity of the core be made. ITS Specification 3.9.3 requires that, under the same circumstances, that both CORE ALTERATIONS and movement of irradiated fuel assemblies be suspended. This is a relaxation of requirements because the CTS action to suspend operations which may increase the reactivity of the core is not retained in ITS, and is less restrictive. This change is acceptable, however, because taking these actions places the reactor in a MODE where the Specification no longer applies; and these actions provide the same degree of protection required by the applicable safety analyses. This change is consistent with NUREG-1431.

L5 CTS Specification 3.8.1.j, which requires that, in the evet that any of the specified LCOs for refueling are not met, refueling of the reactor shall cease, work shall be initiated to correct the conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be made, is revised in ITS Required Action

B.2 to apply only to the condition of two source range neutron flux monitors inoperable. This is a relaxation of requirements and is less restrictive. This change is acceptable because CTS Specification 3.8.1.d has been revised to incorporate ITS Required Actions A.1 and A.2, which also apply when both source range monitors are inoperable. This change is also acceptable because the Required Actions assure that operations that could result in a challenge to core reactivity due to refueling or boron concentration are ceased, with a Completion Time of Immediately, until a reactivity monitoring capability is restored. This change is consistent with NUREG-1431.

L6 CTS Specification 3.8.1.j, which requires that, in the event that any of the specified LCOs for refueling are not met refueling of the reactor shall cease, is revised in ITS Required Action A.2 to suspend loading irradiated fuel assemblies in the core immediately. This is a relaxation of requirements and is less restrictive because unloading of irradiated fuel assemblies is not prohibited. This change is acceptable because the ITS Required Action assures that operations that could result in a reduction in shutdown margin due to refueling operations are ceased, with a Completion Time of Immediately, until the RHR train requirements are met. This change is consistent with NUREG-1431.

RELOCATED SPECIFICATIONS

R1 3.8.1.c Continuous Monitoring of Radiation Levels

3.8.1.g Direct Communication (during refueling operations)

These Specifications, or Limiting Conditions for Operation (CTS Chapter 3.0), are not retained in the ITS because they have been reviewed against, and determined not to satisfy, the selection criteria for Technical Specifications provided in 10 CFR 50.36. The selection criteria were established to ensure that the Technical Specifications are reserved for those conditions or limitations on plant operation considered necessary to limit the possibility of an abnormal situation or event that could result in an immediate threat to the health and safety of the public. The rationale for relocation of each of these Specifications is provided in the report, *"Application of Selection Criteria to the H. B. Robinson Steam Electric Plant Unit No. 2 Technical Specifications."*

These Limiting Conditions for Operation, and their associated Surveillance Requirements (CTS Chapter 4.0), are relocated to licensee controlled documents. Relocation of the specific requirements for systems or variables contained in these Specifications to licensee documents will have no impact on the operability or maintenance of those systems or variables. The licensee will initially continue to meet the requirements contained in the relocated Specifications. The licensee is

allowed to make changes to these requirements in accordance with the provisions of 10 CFR 50.59. Such changes can be made without prior NRC approval, if the change does not involve an unreviewed safety question, as defined in 10 CFR 50.59. These controls are considered adequate for assuring that structures, systems, and components in the relocated Specifications are maintained operable, and variables are maintained within limits. This change is consistent with the NRC Final Policy Statement on Technical Specification Improvements.

SUPPLEMENT 1
CONVERSION PACKAGE SECTION 4.0
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 18 to Serial: RNP-RA/96-0141.

Remove Page	Insert Page

a. Part 1, "Markup of Current Technical Specifications (CTS)"

No Changes

b. Part 2, "Discussion of Changes (DOCs) for CTS Markup"

1 through 4	1 through 4

c. Part 3, "No Significant Hazards Consideration (NSHC), And Basis For Categorical Exclusion From 10 CFR 51.22"

No Changes

d. Part 4, "Markup of NUREG-1431, Revision 1, `Standard Technical Specifications - Westinghouse Plants,' (ISTS)"

No Changes

e. Part 5, "Justification of Differences (JFDs) to ISTS"

No Changes

f. Part 6, "Markup of ISTS Bases"

No Changes

g. Part 7, "Justification for Differences (JFDs) to ISTS Bases"

No Changes

h. Part 8, "Proposed HBRSEP, Unit No. 2 ITS"

No Changes

i. Part 9, "Proposed Bases to HBRSEP, Unit No. 2 ITS"

No Changes

j. Part 10, "ISTS Generic Changes"

No Changes

ADMINISTRATIVE CHANGES

A1 In the conversion of the H. B. Robinson Steam Electric Plant (HBRSEP), Unit 2 Current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS) certain wording preferences or conventions are adopted which do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make ITS consistent with the conventions in the Standard Technical Specifications, Westinghouse Plants, NUREG 1431, Revision 1 (i.e., Improved Standard Technical Specifications (ISTS)).

A2 CTS Section 5.1 is revised by providing a more precise description of the HBRSEP Site Location in the ITS. This change is administrative and therefore has no adverse impact on safety.

A3 CTS References are not retained in ITS Chapter 4.0. The References do not provide any requirements, only information through the UFSAR or other documents. This change does not alter any requirements, and is consistent with NUREG-1431. This change is administrative and has no adverse impact on safety.

A4 CTS Section 5.4.2.1 and Section 5.4.2.2, which specify the maximum fuel assembly axial plane enrichment of 4.96 ± 0.05 (nominal 4.95) weight percent U-235, are revised in ITS to a maximum enrichment of 5.0 weight percent which includes and allowance for uncertainties. The restatement of the maximum U-235 enrichment does not alter the enrichment requirement, and is consistent with NUREG-1431. This change is administrative and has no adverse impact on safety.

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 The CTS is revised to adopt ISTS Specifications 4.3.1.1.c and 4.3.1.1.d. This change adds the nominal center to center spacing between fuel assemblies placed in the high and low density spent fuel storage racks, respectively. This change reflects actual design and does not impose significant restrictions upon unit operation. Since no similar Specification exists, this change is more restrictive and has no adverse impact on safety.

M2 The CTS is revised to adopt ISTS Specification 4.3.2, "Drainage." This change provides a design limitation on the spent fuel storage pool water level, which is important to spent fuel shielding capabilities and does not impose significant restrictions on unit operation. Since no similar Specification exists, this change is more restrictive and has no adverse impact on safety.

M3 CTS Section 5.4.2.1 which specifies that K_{eff} is assured to be less than 0.98 in an optimum moderation criticality event, is revised in ITS to require that the K_{eff} be less than 0.98 in an optimum moderation criticality event with an allowance for uncertainties. CTS Section 5.4.2.2, which specifies that the spent fuel storage pit be designed to maintain K_{eff} less than 0.95 when the spent fuel storage pit is flooded with unborated water, is revised in ITS to require that K_{eff} be less than 0.95 with an allowance for uncertainties. Requiring inclusion of uncertainties in the criticality analyses is reasonable to assure the fuel in the pool remains subcritical under postulated events in the fuel storage racks and does not impose significant restrictions upon unit operation. Since the ITS specifies that uncertainties must be accounted for in the criticality analysis and the uncertainties be included when meeting the requirement of K_{eff}, this change is more restrictive, and has no adverse impact on safety.

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA1 CTS Section 5.1 provides descriptive details related to the plant location, and a statement related to the distance from the reactor to the site exclusion boundary. This detail is not retained in the ITS and is relocated to licensee controlled documents.

The details associated with the involved Section are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains those Design Features which, if altered or modified, would have a significant effect on safety, and are not covered in categories described in 10 CFR 50.36(c)(1), (2), and (3). This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced.

LA2 CTS Section 5.3 provides descriptive details related to the Reactor Core and the Reactor Coolant System (RCS). This detail is not retained in the ITS and is relocated to licensee controlled documents.

The details associated with the involved Section are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains those Design Features which, if altered or modified, would have a significant effect on safety, and are not covered in categories described in 10 CFR 50.36(c)(1), (2), and (3). This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC

and licensee resources associated with processing license amendments to these requirements will be reduced.

LA3 CTS Section 5.4 provides descriptive details related to the New and Spent Fuel Storage Racks. This detail is not retained in the ITS and is relocated to licensee controlled documents.

The details associated with the involved Section are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains those Design Features which, if altered or modified, would have a significant effect on safety, and are not covered in categories described in 10 CFR 50.36(c)(1), (2), and (3). This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced.

LA4 CTS Section 5.2 provides descriptive details related to the Reactor Containment, Penetrations, and Containment Systems. This detail is not retained in the ITS and is relocated to licensee controlled documents.

The details associated with the involved Section are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains those Design Features which, if altered or modified, would have a significant effect on safety, and are not covered in categories described in 10 CFR 50.36(c)(1), (2), and (3). This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced.

LA5 CTS Section 5.5 provides descriptive details related to seismic design of plant structures and systems. This detail is not retained in the ITS and is relocated to licensee controlled documents.

The details associated with the involved Section are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains those Design Features which, if altered or modified, would have a significant effect on safety, and are not covered in categories described in 10 CFR 50.36(c)(1), (2), and (3). This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC

and licensee resources associated with processing license amendments to these requirements will be reduced.

LA6 CTS Section 1.19 and Figure 1.1-1 which describe details of the site boundary are not retained in ITS and are relocated to licensee controlled documents. The relocation of the site boundary information and figure does not alter any requirements, and is consistent with NUREG-1431.

The details associated with the involved Section are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains those Design Features which, if altered or modified, would have a significant effect on safety, and are not covered in categories described in 10 CFR 50.36(c)(1), (2), and (3). This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced.

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CTS Specification 5.3.1.1 is revised by adopting the ISTS Specification 4.2.1 allowances for limited substitutions of filler rods and limited use of lead test assemblies in the ITS. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because it provides specific recognition that reconstitution of a fuel assembly to replace damaged and leaking fuel rods is not considered to be an unreviewed safety question if the repaired fuel assembly constitutes a previously approved design. This change will not result in modifications to fuel assemblies that would have a significant effect on safety because of the necessity to justify such changes using an NRC-approved methodology. This requirement will confirm (a) conformance to existing design limits, and (b) that safety analyses criteria are met before operation during the next fuel cycle. This change provides flexibility for improved fuel performance and is consistent with Supplement 1 to Generic Letter 90-02, and NUREG-1431.

RELOCATED SPECIFICATIONS

None.

SUPPLEMENT 1
CONVERSION PACKAGE SECTION 5.0
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 19 to Serial: RNP-RA/96-0141.

Remove Page	Insert Page

a. Part 1, "Markup of Current Technical Specifications (CTS)"

4.2-6	4.2-6
3.8-3	3.8-3

b. Part 2, "Discussion of Changes (DOCs) for CTS Markup"

7 through 8a	7 through 8a

c. Part 3, "No Significant Hazards Consideration (NSHC), And Basis For Categorical Exclusion From 10 CFR 51.22"

No Changes

d. Part 4, "Markup of NUREG-1431, Revision 1, `Standard Technical Specifications - Westinghouse Plants,' (ISTS)"

No Changes

e. Part 5, "Justification of Differences (JFDs) to ISTS"

No Changes

f. Part 6, "Markup of ISTS Bases"

No Changes

g. Part 7, "Justification for Differences (JFDs) to ISTS Bases"

No Changes

h. Part 8, "Proposed HBRSEP, Unit No. 2 ITS"

No Changes

i. Part 9, "Proposed Bases to HBRSEP, Unit No. 2 ITS"

No Changes

j. Part 10, "ISTS Generic Changes"

No Changes

ITS

Specification 5.5

A1

Class 2 and Class 3 components were chosen based on Regulatory Guide 1.26 and ANSI N18.2 and N18.2a "Nuclear Safety Criteria for the Design of Stationary Pressurized Water Reactor Plants."

A17

The Surveillance Requirements for inspection of the steam generator tubes ensure that the structural integrity of this portion of the RCS will be maintained. The program for inservice inspection of steam generator tubes is based on a modification of Regulatory Guide 1.83, Revision 1. Inservice inspection of steam generator tubing is essential in order to maintain surveillance of the conditions of the tubes for evidence of mechanical damage or progressive degradation. Inservice inspection of steam generator tubing also provides a means of characterizing the nature and cause of any tube degradation so that corrective measures can be taken.

Wastage-type defects will be minimized with proper chemistry treatment of the secondary coolant. If defects or significant degradations should develop in service, this condition is expected to be detected during inservice steam generator tube examinations. Plugging will be required for all tubes with imperfections exceeding the plugging limit. Steam generator tube inspections by means of eddy current testing have demonstrated the capability to reliably detect degradation that has penetrated 20% of the original tube wall thickness.

Whenever the results of any steam generator tubing inservice inspection fall into Category C-3, these results will be reported to the Commission prior to resumption of plant operation. Such cases will be considered by the Commission on a case-by-case basis and may result in a requirement for analysis, laboratory examinations, tests, additional eddy-current inspection, and revision of the Technical Specifications.

4.2.2 <u>Materials Irradiation Surveillance Specimens</u>

A18

The reactor vessel material surveillance specimens shall be removed and examined to determine changes in their material properties, as required by Appendix H to 10CFR50.

4.2.3 <u>Primary Pump Flywheels</u>

[5.5.7]

LA8

The flywheels shall be visually examined at the first refueling after each ten year inspection. At the fourth refueling after each ten year inspection and at each fourth refueling thereafter, the outside surfaces shall be examined by ultrasonic methods. The examinations scheduled for Refueling Outage 17, in 1996, may be deferred to Refueling Outage 18.

A32

This program provides for the inspection of each reactor coolant pump flywheel. The program shall include inspection frequencies and acceptance criteria.

A1

ITS

j. If any of the specified limiting conditions for refueling are not met, refueling of the reactor shall cease; work shall be initiated to correct the conditions so that the specified limits are met; and no operations which may increase the reactivity of the core shall be made.

See 3.9.1 3.9.2 3.9.4 3.9.3 3.9.6

k. The reactor shall be subcritical as required by 3.10.8.3.

3.8.2 The Spent Fuel Building Filter system and the Containment Purge filter system shall satisfy the following conditions:

[5.5.11.a] [5.5.11.b] a. The results of the in-place cold DOP and halogenated hydrocarbon tests at greater than 20 percent design flows on HEPA filters and charcoal absorber banks shall show ≥ 99 percent DOP removal and ≥ 99 percent halogenated hydrocarbon removal.

[5.5.11.c] b. Verification by way of laboratory carbon sample analysis from the Spent Fuel Building filter system carbon and the Containment Purge filter system carbon to show ≥ 90 percent radioactive methyl iodide removal in accordance with test 5.b of Table 5-1 of ANSI/ASME N509-1976 except that ≥ 70 percent relative humidity air is required.

LA9

c. 1. The Spent Fuel Building refueling filter fan shall be shown to operate within ± 10% of the design flow.

2. At least one Containment purge filter fan shall be shown to operate within ± 10% of the design flow and must be operable during core alterations or movement of irradiated fuel assemblies, or at least one automatic containment isolation valve in each line penetrating the containment which provides a direct path from the containment atmosphere to the outside atmosphere shall be securely closed.

See 3.9.3

[5.5.11.e] d. During fuel handling operations, the relative humidity (R.H.) of the air processed by the refueling filter systems shall be ≤ 70 percent.

e. From and after the date that the Spent Fuel Building filter system is made or found to be inoperable for any reason, fuel handling operations in the Spent Fuel Building shall be terminated immediately.

See 3.7.11

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 CTS Specification 6.2.3.e is revised in ITS Specification 5.2.2 to reflect that one of the two licensed operators required to be present in the control room during certain operating conditions must be licensed as an SRO. The phrase, "during reactor start-up, scheduled reactor shutdown, and during recovery from reactor trips," is revised to read, "when in MODES 1, 2, 3, and 4" in ITS Specification 5.2.2. These changes are necessary to establish consistency with the NUREG and are consistent with existing requirements in 10 CFR 50.54. This change imposes more restrictive requirements, and has no adverse impact on safety.

M2 CTS Specification 6.5.1.1.1, related to procedure requirements, is revised to adopt ISTS Specification 5.4.1.b in the ITS, which requires that procedures be established covering the emergency operating procedures required to implement NUREG-0737 commitments. This change is necessary to establish consistency with the NUREG and is consistent with existing requirements in Appendix B to 10 CFR 50. This change imposes new requirements which are more restrictive, and has no adverse impact on safety.

M3 CTS Specification 6.5.1.1.1, related to procedure requirements, is revised to adopt ISTS Specification 5.4.1.e in the ITS, which requires that each program specified in ITS Section 5.5 have written procedures established, implemented and maintained. Specifically, those programs for which this is a new requirement are 1) Component Cyclic or Transient Limits, 2) Technical Specification Bases Control Program, and 3) Safety Function Determination Program. This change establishes consistency with the NUREG. The requirement to have written procedures for the programs established in ITS Section 5.5 does not impose a significant burden upon plant operations and is consistent with existing administrative requirements This change imposes new requirements which are more restrictive, and has no adverse impact on safety.

M4 CTS Specification 6.16.2.B, which requires that changes to the Offsite Dose Calculation Manual (ODCM) become effective upon review and acceptance of the Plant Nuclear Safety Committee (PNSC), is revised in ITS Specification 5.5.1.c.2 to require that changes to the ODCM become effective upon approval of the plant manager. While the plant manager is the Chairman of the PNSC, the actual composition of the PNSC is proposed to be relocated into licensee controlled documents. This change establishes consistency with the NUREG and does not impose a significant burden upon plant operations. The specification of the plant manager imposes a requirement that is more restrictive, and the change has no adverse impact on safety.

M5 The CTS is revised to adopt ISTS Specification 5.5.5, "Component Cyclic or Transient Limit" in the ITS as a program to track UFSAR Table 3.9.1-1

cyclic and transient occurrences to ensure that components are maintained within their design limits. This change is necessary to establish consistency with the NUREG and does not impose a significant burden upon plant operations. This change imposes new requirements which are more restrictive, and has no adverse impact on safety.

M6 The CTS is revised to adopt ISTS Specification 5.5.14, "Technical Specifications (TS) Bases Control Program" in the ITS, which provides a means for processing changes to the Bases of the Technical Specifications. This change is necessary to establish consistency with the NUREG and does not impose a significant burden upon plant operations. This change imposes new requirements which are more restrictive, and has no adverse impact on safety.

M7 The CTS is revised to adopt ISTS Specification 5.5.15, "Safety Function Determination Program (SFDP)" in the ITS, which ensures any loss of safety function is detected and that appropriate actions are taken. This change is necessary to establish consistency with the NUREG and does not impose a significant burden upon plant operations. The establishment of the safety function determination program ensures that entry into multiple conditions of one or more LCOs, while permitted, does not result in a loss of the safety function resulting from interactions of the multiple conditions for an extended period of time. This change imposes new requirements which are more restrictive, and has no adverse impact on safety.

M8 CTS Specification 6.9.3.3.c, related to core operating limits, is revised in ITS Specification 5.6.5 to add Emergency Core Cooling System (ECCS) limits to those limits of the safety analysis which must be met. This change is necessary to establish consistency with the NUREG and does not impose a significant burden upon plant operations. This change imposes new requirements which are more restrictive, and has no adverse impact on safety.

M9 CTS Specification 4.4.4.1 (Inspection of Surveillance Tendons), 4.2.3 (Primary Pump Flywheels) is revised in ITS Specification 5.5.6 to incorporate additional details of the description of the Program. This change is necessary to establish consistency with the NUREG and does not impose a significant burden upon plant operations. Since this change imposes new requirements, this change is more restrictive, and has no adverse impact on safety.

M10 CTS Specification 6.9.1.2.4 which requires that primary safety and relief valve challenges be included in an annual report, is revised to be included in ITS Specification 5.6.4 to include primary safety and relief valve challenges in the Monthly Operating Report. This change is necessary to establish consistency with the NUREG and does not impose a significant burden upon plant operations. This change is more restrictive, and has no adverse impact on safety.

M11 The CTS is revised to adopt ISTS Specification 5.5.4, Radioactive Effluent Controls Program," in the ITS. This program provides controls for the relocated requirements for control of radioactive effluents contained in the CTS Radiological Environmental Technical Specifications (RETS). This change is necessary to establish consistency with the NUREG and does not impose a significant burden upon plant operations. The addition of a program is more restrictive, and this change has no adverse impact on safety.

M12 CTS Specification 6.16.1, "Offsite Dose Calculation Manual," is revised to adopt ISTS Specification 5.5.1.b in the ITS, to specify additional content requirements for the ODCM. This change is necessary to establish consistency with the NUREG and does not impose a significant burden upon plant operations. The addition of radioactive effluent controls, radiological environmental monitoring activities and descriptions of the information to be included in the Annual Radiological Environmental, Operating, and Radioactive Effluent Release Reports to the ODCM is more restrictive, and has no adverse impact on safety.

M13 Facility Operating License DPR-23, paragraph 3.G(2), which is related to reducing leakage from systems outside containment, is revised in ITS Specification 5.5.2 to incorporate those systems to which this Specification applies, consistent with NUREG-1431. This change is necessary to establish consistency with the NUREG and does not impose a significant burden upon plant operations. The addition of specific systems to which the Specification applies is more restrictive, and has no adverse impact on safety.

SUPPLEMENT 1
CONVERSION PACKAGE RELOCATED SPECIFICATIONS
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 20 to Serial: RNP-RA/96-0141.

Remove CTS Page	Insert CTS Page
4.1-4	4.1-4 and 4.1-4a

Relocated Specifications

For a specified test interval W and an M out of N redundant system with identical and independent channels having a constant failure rate λ, the average availability A is given by:

$$A = \frac{W - Q\left(\frac{W}{N-M+2}\right)}{W} = 1 - \frac{N!}{(N-M+2)!\ (M-1)!}(\lambda W)^{N-M+1}$$

where A is defined as the fraction of time during which the system is functional, and Q is the probability of failure of such a system during a time interval W.

For a 2-out-of-3 system A = 0.9999968, assuming a channel failure rate, λ, equal to $2.5 \times 10^{-6}\ hr^{-1}$ and a test interval, W, equal to 720 hrs.

This average availability of the 2-out-of-3 system is high; hence the test interval of one month is acceptable.

Because of their greater degree of redundancy, the 1/3 and 2/4 logic arrays provide an even greater measure of protection and are thereby acceptable for the same testing interval. Those items specified for monthly testing are associated with process components where other means of verification provide additional assurance that the channel is operable, thereby requiring less frequent testing.

MSSV's

This surveillance verifies the OPERABILITY of the MSSVs by the verification of each MSSV lift setpoint in accordance with the Inservice Testing Program. The ASME Code, Section XI (Ref. 3), requires that safety and relief valve tests be performed in accordance with ANSI/ASME OM-1 1981 (Ref. 4). According to Reference 4, the following tests are required:

a. Visual examination,

b. Seat tightness determination,

c. Setpoint pressure determination (lift setting), and

d. Compliance with owner's seat tightness criteria.

The ANSI/ASME Standard requires that all valves be tested every 5 years, and a minimum of 20% of the valves be tested every 24 months. The ASME Code specifies the activities and frequencies necessary to satisfy the requirements. Table 4.1-4 allows a ± 3% setpoint tolerance for OPERABILITY; however, the valves are reset to ± 1% during the Surveillance to allow for drift.

A2

Relocated Specifications

This Surveillance is modified by a Note that allows entry ~~into and operation~~ in Hot/No Load prior to performing the Surveillance. The MSSVs may be either bench tested or tested in situ at hot conditions using an assist device to simulate lift pressure. If the MSSVs are not tested at hot conditions, the lift setting pressure shall be corrected to ambient conditions of the valve at operating temperature and pressure.

A2

Reference

(1) FSAR Section 7.2.2
(2) UFSAR Section 15.2
(3) ASME Boiler and Pressure Vessel Code, Section XI
(4) ANSI/ASME OM-1-1981
(5) UFSAR Section 10.3.2.2

Supplement 1

SUPPLEMENT 1
CONVERSION PACKAGE SECTION 3.4
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 12 to Serial: RNP-RA/96-0141.

Remove Page	Insert Page
3.1-1 (3.4.5)	3.1.-1 (3.4.5)
3.1-2 (3.4.6)	3.1-2 (3.4.6)
3.1-3a (3.4.10)	3.1-3a (3.4.10)
3.1-3d (3.4.11)	3.1-3d (3.4.11)
3.1-3e (3.4.11)	3.1-3e (3.4.11)
3.1-4 (3.4.3)	3.1-4 (3.4.3)
3.1-19a (3.4.14)	3.1-19a (3.4.14)
3.3-5 (3.4.7)	3.3-5 (3.4.7)
3.5-1 (3.3.1)	3.5-1 (3.31)
3.5-1 (3.3.2)	3.5-1 (3.3.2)
3.5-1 (3.3.3)	3.5-1 (3.3.3)
3.5-1 (3.3.6)	3.5-1 (3.3.6)
3.5-12 (3.3.1)	3.5-12 (3.3.1)
3.5.13 (3.3.1)	3.3.1 (3.3.1)
3.5-13a (3.3.1)	3.5-13a (3.3.1)
3.5-13b (3.3.1)	3.5-13b (3.3.1)
3.5.13c (3.3.1)	3.5-13c (3.3.1)
3.5-14 (3.3.2)	3.5-14 (3.3.2)
3.5-15(3.3.5)	3.5-15 (3.3.5)
3.5-15a (3.3.2)	3.5-15a (3.3.2)
3.5-15a (3.3.5)	3.5-15a (sheet 1) (3.3.5)
3.5-15a (3.3.5)	3.5.15a (sheet 2) (3.3.5)
3.5-16 (3.3.2)	3.5-16 (3.3.2)
3.5-16 (3.3.6)	3.5-16 (3.3.6)
3.5-17 (3.3.2)	3.5-17 (3.3.2)
3.5-17a (3.3.2)	3.5-17a (3.3.2)
3.5-17a (3.3.6)	32.5-17a (3.3.6)
3.8-3 (3.7.11 & 3.7.12)	3.8-3 (3.7.11 & 3.7.12)
3.8-3 (3.9.1)	3.8.3-3 (3.9.1)
3.8-3 (3.9.2)	3.8-3 (3.9.2)
3.8-3 (3.9.3)	3.8-3 (3.9.3)
3.8-3 (3.9.4 & 3.9.5)	3.8-3 (3.9.4 & 3.9.5)
3.8-3 (3.9.6)	3.8-3 (3.9.6)
3.8-3 (5.5)	3.8-3 (5.5)
4.1-4 Relocated Specifications	4.1-4 Relocated Specifications
-	4.1-4a Relocated Specifications
4.1-11 (3.4.16)	4.1-11 (3.4.16)
4.1-12 (3.1.4)	4.1-12 (3.1.4)
4.1-12 (3.3.2)	4.1-12 (3.3.2)
4.1-12 (3.4.10)	4.1-12 (3.4.10)
4.1-12 (3.4.13)	4.1-12 (3.4.13)
4.1-12 (3.7.1)	4.1-12 (3.7.1)
4.1-12 (3.7.7)	4.1-12 (3.7.7)
4.1-12 (3.8.3)	4.1-12 (3.8.8)
4.1-12 (3.9.1)	4.1-12 (3.9.1)

SUPPLEMENT 1
CONVERSION PACKAGE SECTION 3.4
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 12 to Serial: RNP-RA/96-0141.

Remove Page	Insert Page
4.1-15 (3.7.1)	4.1-15 (3.7.1)
4.2-6 (5.5)	4.2-6 (5.5)
4.2-7a (3.4.11)	4.2-7a (3.4.11)
4.6-1 (3.8.1)	4.6-1 (3.8.1)
4.6-2 (3.8.1)	4.6-2 (3.8.1)
4.6-2 (3.8.3)	4.6-2 (3.8.3)
4.6-2 (3.8.6)	4.6-2 (3.8.6)
4.6-3 (3.4.9)	4.6-3 (3.4.9)
4.6-3 (3.8.4)	4.6-3 (3.8.4)
4.6-4 (3.8.4)	4.6-4 (3.8.4)
4.8-1 (3.7.4)	4.8-1 (3.7.4)
4.15-2 (3.7.10)	4.15-2 (3.7.10)
5.4-1 (3.7.14)	5.4-1(3.7-14)

ITS

3.0 LIMITING CONDITIONS FOR OPERATION

(A1)

Except as otherwise provided for in each specification, if a Limiting Condition for Operation cannot be satisfied because of circumstances in excess of those addressed in the specification, the unit shall be placed in hot shutdown within eight hours and in COLD SHUTDOWN within the next 30 hours unless corrective measures are taken that permit operation under the permissible Limiting Condition for Operation statements for the specified time interval as measured from initial discovery or until the reactor is placed in a condition in which the specification is not applicable. (See 3.0)

3.1 REACTOR COOLANT SYSTEM

Applicability

Applies to the operating status of the Reactor Coolant System.

Objective

To specify those Reactor Coolant System conditions which must be met to assure safe reactor operation.

Specification

3.1.1 Operational Components

3.1.1.1 Coolant Pumps

[LCO 3.4.5]

a. With reactor power less than 2% of rated thermal power (MODE 3) and less than two reactor coolant pumps in operation, one of the following actions shall be taken: (M7)

1. maintain a shutdown margin of at least 4% Δk/k (as specified in the COLR), or (LA2)
2. open the lift disconnect switches for all control rods not fully withdrawn, or
3. open reactor trip breakers.

Add to LCO and Note: "Rod Control System is not capable of rod withdrawal; or" (A4)

Add LCO 3.4.5 ACTION D SR 3.4.5.1, SR 3.4.5.2, SR 3.4.5.3, SR 3.4.5.4, SR 3.4.5.5, SR 3.4.5.6, SR 3.4.5.7 (M8)

Add LCO "NOTE" (L1) (M38)

ITS

[LCO 3.4.6] Two loops of any combination of RCS and RHR shall be operable, and

b. Power operation with less than three loops in service is prohibited. (A1) See 3.4.4

c. At least one reactor coolant pump or residual heat removal pump shall be in operation when T_{avg} > 200°F and reactor power is less than 2% of rated thermal power. (MODE 4) In the event this condition cannot be satisfied, the following actions shall be taken: (M9) (M10)

[RA C.1] 1. Proceed to establish a boron concentration in the reactor coolant equal to or greater than that concentration needed to maintain a shutdown margin of 1% Δk/k at 200°F, and (Suspend all operations involving reduction of boron) (immediately) (L2) (M4)

[RA C.2] 2. Restore at least one reactor coolant pump or residual heat removal pump to operation within one hour, or prepare and submit a Special Report to the NRC within 30 days. (initiate action to) (L3)

[NOTE 2] d. A reactor coolant pump may be started (or jogged) only if there is a steam bubble in the pressurizer or the steam generator temperature is no higher than 50°F higher than the temperature of the reactor coolant system. (A6)

Basis

Specification 3.1.1.1.a contains requirements designed to limit the consequences of the uncontrolled bank withdrawal at low or subcritical power conditions as analyzed in the safety analysis. The requirement of two reactor coolant pumps in operation below 2% power is consistent with the assumptions utilized in the bounding transient that was analyzed. The specification makes allowance for less than two pumps in operation by specifying either of three actions that must be taken. Either maintaining the specified shutdown margin, opening the lift disconnect switches on the control rods or opening the reactor trip breakers will prevent the occurrence of the postulated uncontrolled bank withdrawal transient, therefore allowing the two pump requirement to be lifted.

Maintaining a shutdown margin of 4% Δk/k is sufficient to prevent a return to criticality if the worth of the two most reactive control rod banks are simultaneously withdrawn as is the assumption of the postulated transient. (A2)

Add ACTIONS A, B
SR 3.4.6.1
SR 3.4.6.2
SR 3.4.6.3 (M11)

Add LCO 3.4.6 NOTE 1 (L1) (M38)

Add to LCO 3.4.6 NOTE 1
"c. Rod Control System is not capable of rod withdrawal" (A4)

A1

ITS

3.1.1.3 Pressurizer (Pzr)

a. At least one Pzr code safety valve shall be operable whenever the Reactor Head is on the vessel and the RCS is not open for maintenance. LA3

b. The Pzr, including necessary spray and heater control systems, shall be operable before the reactor is made critical. See 3.4.9

MODES 1, 2, 3

c. Whenever the RCS temperature is above 350°F or the reactor is critical;

[LCO 3.4.10]

1. All three pressurizer code safety valves shall be operable. Their lift settings shall be maintained between 2485 2410 psig and 2560 psig. L7

2. At least 125 kw of pressurizer heaters capable of being powered from an emergency power source shall be operable.

d. If the requirements of 3.1.1.3.c.2 are not met and at least 125 kw or Pzr heaters capable of being powered from an emergency source cannot be provided within 72 hrs., commence a normal plant shutdown and cooldown to an RCS average temperature of less than or equal to 350°F. See 3.4.9

Basis

The pressurizer is necessary to maintain acceptable system pressure during normal plant operation, including surges that may result following anticipated transients.

Each of the pressurizer code safety valves is designed to relieve 288,000 lbs. per hr. of saturated steam at the valve setpoint.[1] Below 350°F and 450 psig in the Reactor Coolant System (RCS), the Residual Heat Removal System can remove decay heat and thereby control system temperature. The pressurizer A2

Add Actions A,B — M20

Add LCO NOTE — L9

ITS

3. With both the Reactor Vessel Head and Pressurizer Steam Space vent paths inoperable, restore at least one vent path to operable status within 7 days or be in HOT SHUTDOWN within 6 hours and COLD SHUTDOWN within the following 30 hours. (A1) (R1)

3.1.1.5 Relief Valves

[LCO 3.4.11] Whenever T_{avg} is above 350°F or the reactor is critical (MODE 1, 2, 3) both power operated relief valves (PORVs) and their associated block valves shall be OPERABLE.[1] (A16: and capable of being manually cycled)

[ACTION A] a. With one or both PORVs inoperable because of leakage through the PORV resulting in excessive RCS leakage, i.e., not in accordance with the leakage criteria in Technical Specification 3.1.5.2:

1. Within 1 hour either restore the PORV(s) to OPERABLE status or close the associated block valve(s) with power maintained to the block valve(s); or

[ACTION D] 2. Be in at least HOT SHUTDOWN (MODE 3) condition using normal operating procedures within the next 12 (6) hours and cool down the RCS below a T_{avg} of 350°F (MODE 4) within the following 12 hours. (M21)

Add ACTIONS "NOTE 1" (A17)

[1] PORV block valves shall not be considered inoperable solely because either their normal or emergency power source is inoperable. (A8)

[2] Power operation may continue pursuant to the requirements of this specification with the associated block valve closed, as a precautionary measure, to isolate minor leakage prior to the RCS leakage exceeding the leakage criteria in Technical Specification 3.1.5.2, with power maintained to the block valve during the period of the discretionary isolation. (M22)

A1

[ACTION B] b. With one PORV inoperable due to causes other than (1) leakage through the PORV resulting in excessive RCS leakage or (2) discretionary isolation to prevent minor leakage from becoming excessive: (and not capable of being manually cycled) A18

1. Within 1 hour either restore the PORV to OPERABLE status or close its associated block valve and remove power from the block valve; and

2. Restore the PORV to OPERABLE status within the following 72 hours; or

[ACTION D] 3. Be in at least HOT SHUTDOWN (MODE 3) condition using normal operating procedures within the next 12 (6) hours and cool down the RCS below a T_{avg} of 350°F (MODE 4) within the following 12 hours. M21

[ACTION E] c. With both PORVs inoperable due to causes other than (1) leakage through the PORV resulting in excessive RCS leakage or (2) discretionary isolation to prevent minor leakage from becoming excessive:

1. Within 1 our either restore at least one PORV to OPERABLE status; or close its associated block valve and remove power from the block valve; and

2. Be in at least HOT SHUTDOWN (MODE 3) condition using normal operating procedures within the next 12 (6) hours and cool down the RCS below a T_{avg} of 350°F (MODE 4) within the following 12 hours. M21

ITS

3.1.2 **Heatup and Cooldown**

A1

[LCO 3.4.3] 3.1.2.1 The reactor coolant pressure and the system heatup and cooldown rates (with the exception of the pressurizer) shall be limited in accordance with Figure 3.1-1 and Figure 3.1-2 (for vessel exposure up to 24 EFPY). These limitations are as follows:

RCS temperature. A29

a. Over the temperature range from cold shutdown to hot operating conditions, the heatup rate shall not exceed 60°F/hr. in any one hour.

b. Allowable combinations of pressure and temperature for a specific cooldown rate are below and to the right of the limit lines for that rate as shown on Figure 3.1-2. This rate shall not exceed 100°F/hr. in any one hour. The limit lines for cooling rates between those shown in Figure 3.1-2 may be obtained by interpolation.

c. Primary system hydrostatic leak tests may be performed as necessary, provided the temperature limitation as noted on Figure 3.1-1 is not violated. Maximum hydrostatic test pressure should remain below 2350 psia.

LA1

d. The overpressure protection system shall be OPERABLE[1], with both power operated relief valves OPERABLE with a lift setting of less than or equal to 420 psi whenever any RCS

See 3.4.12

Add Actions A, B, C SR 3.4.3.1

M4

[1] The overpressure protection system shall not be considered inoperable solely because either the normal or emergency power source for the PORV block valves is inoperable.

See 3.4.12

Supplement 1

See ... 3.4.14

A1

TABLE 3.1-1

PRIMARY COOLANT SYSTEM PRESSURE ISOLATION VALVES

ITS

[SR 3.4.14.1]

System	Valve No.	Maximum[(a)] Allowable Leakage
Low-Pressure Safety Injection/Residual Heat Removal		≤ 5.0 GPM for each[(b)] valve at an RCS pressure ≥ 2235 psig
Loop 1, cold leg	875A 876A	
Loop 2, cold leg	875B 876B	
Loop 3, cold leg	875C 876C	
High-Pressure Injection		
Loop 2, hot leg	874B	
Loop 3, hot leg	874A	

A32

LA5

A31

and verify the margin between the results of the previous leak rate test and the 5 gpm limit has ~~not~~ been reduced by ≥ 50% for valves with leakage rates > 1.0 gpm

[SR 3.4.14.1] (a)

1. Leakage rates less than or equal to 1.0 gpm are considered acceptable.
2. Leakage rates greater than 1.0 gpm but less than or equal to 5.0 gpm are considered acceptable if the latest measured rate has not exceeded the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate of 5.0 gpm by 50% or greater.
3. Leakage rates greater than 1.0 gpm but less than or equal to 5.0 gpm are considered unacceptable if the latest measured rate exceeded the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate of 5.0 gpm by 50% or greater.
4. Leakage rates greater than 5.0 gpm are considered unacceptable.

(b) More than one valve may be tested in parallel. The combined leakage shall not exceed 5.0 gpm. Redundant valves in each line shall not be tested in series.

LA5

ITS

A1

3.3.1.3 When the reactor is in the hot shutdown condition, the requirements of 3.3.1.1 and 3.3.1.2 shall be met. Except that the accumulators may be isolated or otherwise inoperable relative to the requirements of 3.3.1.1.b. In addition, any one component as defined in 3.3.1.2 may be inoperable for a period equal to the time period specified in the subparagraphs of 3.3.1.2 plus 48 hours, after which the plant shall be placed in the cold shutdown condition utilizing normal operating procedures. The safety injection pump power supply breakers must be racked out when the reactor coolant system temperature is below 350°F and the system is not vented to containment atmosphere.

See 3.4.12, 3.5.1, 3.5.2, 3.5.3, 3.5.4

[LCO 3.4.7] 3.3.1.4 When the reactor is in the cold shutdown condition (except refueling operation when Specification 3.8.1.e applies), both residual heat removal loops must be operable. Except that either the normal or emergency power source to both residual heat removal loops may be inoperable.

MODE 5, loops filled (A7)
(A12)
(A8)
or 1 RHR train and 1 SG with level ≥ 16% (L6)
1 RHR train shall be in operation (M15)
train

[ACTION A] a. If one residual heat removal loop becomes inoperable during cold shutdown operation, within 24 hours verify the existence of a method to add make-up water to the reactor coolant system such as charging pumps, safety injection pumps (under adequate operator control to prevent system overpressurization), or primary water (if the reactor coolant system is open for maintenance) as back-up decay heat removal method. Restore the inoperable RHR loop to operable status within 14 days or prepare and submit a Special Report to the Commission within the next 30 days outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the loop to operable status.

and required SG level not within limits
(A12) (L17) (M39)
Immediately initiate action to a second
or immediately initiate action to restore SG level to within limits
(L16)
train (A12)

[ACTION B] b. If both residual heat removal loops become inoperable during cold shutdown operation, close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere prior to the reactor coolant average temperature exceeding 200°F, restore at least one residual

(L4)
immediately initiate action to (A10)
or no RHR train in operation (M14)
(M39)

Add LCO NOTE 1 (L1) (M38)

Add LCO NOTE 2 (L5)

Add LCO NOTE 4 (M12)

Specification 3.3.1

(A1)

3.5 INSTRUMENTATION SYSTEMS

3.5.1 Operational Safety Instrumentation

Applicability

Applies to plant operational safety instrumentation systems.

Objective

To provide for automatic initiation of the Engineered Safety Features in the event that principal process variable limits are exceeded, and to delineate the conditions of the plant instrumentation and safety circuits necessary to ensure reactor safety.

Specification

ITS

3.5.1.1 The Engineered Safety Features initiation instrumentation setting limits shall be as stated in Table 3.5-1. (See 3.2.2)

3.5.1.2 [ACTION A] [Applicability] For on-line testing or in the event of a subsystem instrumentation channel failure, plant operation at rated power shall be permitted to continue in accordance with Tables ~~3.5-2 through 3.5-4~~ (3.3.3-1)

3.5.1.3 In the event the number of channels in service listed in Table 3.5-5 falls below the limits given in the column entitled Minimum Channels Operable, operation shall be limited according to the requirement shown in Column 2. (See 3.3.3)

3.5.1.4 The containment ventilation isolation function is only required when containment integrity is required. (See 3.3.6)

3.5.1.5 [ACTION A] In the event the number of operable channels of a particular functional unit listed in Tables ~~3.5-2, 3.5-3, or 3.5-4~~ (Table 3.3.3-1) falls below the limits given in the column entitled Total Number of Channels, operation shall be limited according to the requirement shown in Column 3. (immediately) (M2)

Add ACTIONS "Note" (A5)

Specification 3.3.2

(A1)

3.5 INSTRUMENTATION SYSTEMS

3.5.1 Operational Safety Instrumentation

Applicability

Applies to plant operational safety instrumentation systems.

Objective

To provide for automatic initiation of the Engineered Safety Features in the event that principal process variable limits are exceeded, and to delineate the conditions of the plant instrumentation and safety circuits necessary to ensure reactor safety.

Specification

ITS

3.5.1.1 [LCO 3.3.2] The Engineered Safety Features initiation instrumentation setting limits shall be as stated in Table 3.5-1 3.3.2-1 shall be OPERABLE

3.5.1.2 For on-line testing or in the event of a subsystem instrumentation channel failure, plant operation at rated power shall be permitted to continue in accordance with Tables 3.5-2 through 3.5-5. 3.3.2-1

3.5.1.3 In the event the number of channels in service listed in Table 3.5-5 falls below the limits given in the column entitled Minimum Channels Operable, operation shall be limited according to the requirement shown in Column 2. See 3.3.3

3.5.1.4 The containment ventilation isolation function is only required when containment integrity is required. See 3.3.6 Table 3.3.2-1

3.5.1.5 [ACTION A] In the event the number of operable channels of a particular functional unit listed in Tables 3.5-2, 3, or 4 falls below the limits given in the column entitled Total Number of Channels, operation shall be limited according to the requirement shown in Column 3. Immediately (A2)

Specification 3.3

A17

3.5 INSTRUMENTATION SYSTEMS

3.5.1 Operational Safety Instrumentation

Applicability

Applies to plant operational safety instrumentation systems.

Objective

To provide for automatic initiation of the Engineered Safety Features in the event that principal process variable limits are exceeded, and to delineate the conditions of the plant instrumentation and safety circuits necessary to ensure reactor safety.

Specification

See 3.3.2

ITS

3.5.1.1 The Engineered Safety Features initiation instrumentation setting limits shall be as stated in Table 3.5-1.

in MODES 1, 2 and 3 — M28

[LCO 3.3.3]

3.5.1.2 For on-line testing or in the event of a subsystem instrumentation channel failure, plant operation at rated power shall be permitted to continue in accordance with Tables 3.5-2 through 3.5-5. 3.3.3-1

[LCO 3.3.3]

3.5.1.3 In the event the number of channels in service listed in Table 3.5-6 (3.3.3-1) falls below the limits given in the column entitled Minimum (Required) Channels Operable, operation shall be limited according to the requirement shown in Column 8 (Condition).

3.5.1.4 The containment ventilation isolation function is only required when containment integrity is required. See 3.3.6

3.5.1.5 In the event the number of operable channels of a particular functional unit listed in Tables 3.5-2, 3, or 4 falls below the limits given in the column entitled Total Number of Channels, operation shall be limited according to the requirement shown in Column 3.

See 3.3.1 3.3.2

Add ACTIONS "NOTE 1" — A29

Add ACTIONS "NOTE 2" — A5

Specification 3.3.6

3.5 INSTRUMENTATION SYSTEMS

3.5.1 Operational Safety Instrumentation

Applicability

Applies to plant operational safety instrumentation systems.

Objective

To provide for automatic initiation of the Engineered Safety Features in the event that principal process variable limits are exceeded, and to delineate the conditions of the plant instrumentation and safety circuits necessary to ensure reactor safety.

Specification

3.5.1.1 The Engineered Safety Features initiation instrumentation setting limits shall be as stated in Table 3.5-1. See 3.3.2

ITS

3.5.1.2 For on-line testing or in the event of a subsystem instrumentation channel failure, plant operation at rated power shall be permitted to continue in accordance with Tables 3.5-2 through 3.5-5. See 3.3.1 3.3.2 3.3.3

3.5.1.3 In the event the number of channels in service listed in Table 3.5-5 falls below the limits given in the column entitled Minimum Channels Operable, operation shall be limited according to the requirement shown in Column 2. See 3.3.3

3.5.1.4 [LCO 3.3.6] [Applicability] The containment ventilation isolation instrumentation for each Function in Table 3.3.6-1 shall be OPERABLE function is only required when containment integrity is required. During Core Alterations, movement of fuel in Containment. L34

3.5.1.5 In the event the number of operable channels of a particular functional unit listed in Tables 3.5-2, 3, or 4 falls below the limits given in the column entitled Total Number of Channels, operation shall be limited according to the requirement shown in Column 3.

See 3.3.1 3.3.2

Specification 3.3.1

A1

TABLE 3.5-2

REACTOR TRIP INSTRUMENTATION LIMITING OPERATING CONDITIONS

ITS

A27

NO.	FUNCTIONAL UNIT	1 TOTAL NO. OF CHANNELS	2 MINIMUM CHANNELS OPERABLE	3 OPERATOR ACTION IF COLUMN 1 OR 2 CANNOT BE MET	APPLICABLE CONDITIONS
[T3.3.1-1(1)] 1.	Manual	2 2	2 2	ACTION 1 (B) ACTION 4 (C)	Reactor Critical (Modes 1,2) Hot/Cold Shutdown* (Modes 3,4,5) (a)
[T3.3.1-1(2)] 2.	Nuclear Flux Power Range* A. High Setpoint B. Low Setpoint	 4 4	 3 3	 ACTION 2 (D) ACTION 2 (E)	(MODES 1,2) Reactor Critical Reactor Critical** (b) (c)(d)
[T3.3.1-1(3)] 3.	Nuclear Flux Intermediate Range	2	2	ACTION 3 (F,G,H)	Reactor Critical** (MODES 1,2) A28
[T3.3.1-1(4)] 4.	Nuclear Flux Source Range A. Startup B. Shutdown C. Shutdown	 2 2 (1) 2	 2 1 2	 ACTION 4 (I) (L) ACTION 5 ACTION 8 (K)	(d) (e) Reactor Critical*** (MODE 2) Hot/Cold Shutdown Hot/Cold Shutdown* (MODES 3,4,5) (a)
[T3.3.1-1(5)] 5.	Overtemperature ΔT	3	2	ACTION 6 (E)	Reactor Critical (MODES 1,2)
[T3.3.1-1(6)] 6.	Overpower ΔT	3	2	ACTION 6	Reactor Critical
[T3.3.1-1(2a)] 7.	Low Pressurizer Pressure	3	2	ACTION 6 (M) L10	***** (MODE 1 (f))
[T3.3.1-1(2b)] 8.	Hi Pressurizer Pressure	3	2	ACTION 6 (E)	Reactor Critical (MODES 1,2)
[T3.3.1-1(8)] 9.	Pressurizer-Hi Water Level	3	2	ACTION 6 (M) L10	***** (MODE 1 (f))
[T3.3.1-1(9)] 10.	Low Reactor Coolant Flow A. Single Loop B. Two Loop	 3/loop 3/loop	 2/loop 2/loop	 ACTION 6 (M) ACTION 6 (M)	(MODE 1 (g)) ≥45% of rated power **** (MODE 1 (h))

Amendment No. ~~85~~, 175

Supplement 1

ITS

TABLE 3.5-2 (Continued)

REACTOR TRIP INSTRUMENTATION LIMITING OPERATING CONDITIONS

A27

	NO.	FUNCTIONAL UNIT	1 TOTAL NO. OF CHANNELS	2 MINIMUM CHANNELS OPERABLE	3 OPERATOR ACTION IF COLUMN 1 OR 2 CANNOT BE MET	APPLICABLE CONDITIONS	
[T 3.3.1-1(15)]	11.	Turbine Trip					LT1
		A. Auto Stop Oil Pressure	3	2	ACTION 6 P	MODE 1 (F)	
		B. Turb Stop Valves	2	2	ACTION 6		
[T 3.3.1-1(13)]	12.	Lo Lo Steam Generator Water Level	3/SG	2/SG	ACTION 6 E	Reactor Critical MODES 1, 2	L10
[T 3.3.1-1(12)]	13.	Underfrequency 4 KV System RCPs	3 1/bus	2	ACTION 6 M	Reactor Critical MODE 1 (E)	L12
[T 3.3.1-1(11)]	14.	Undervoltage 4 KV System RCPs	3 1/bus	2	ACTION 6 M	Reactor Critical	L4
	15.	Control Rod Misalignment Monitor					
		A. ERFIS Rod Position Deviation	1	1	ACTION 9	Reactor Critical	
		B. Quadrant Power Tilt Monitor (upper and lower ex-core neutron detectors) "Detector Current Comparator"	1	1	ACTION 10	>50% of rated power	LA7

Amendment No. ~~85~~, 175
Supplement 1

Specification 3.3.1

(M1)

ITS

TABLE 3.5-2 (Continued)

REACTOR TRIP INSTRUMENTATION LIMITING OPERATING CONDITIONS

NO.	FUNCTIONAL UNIT	1 TOTAL NO. OF CHANNELS	2 MINIMUM CHANNELS OPERABLE	3 OPERATOR ACTION IF COLUMN 1 OR 2 CANNOT BE MET	APPLICABLE CONDITIONS
[T3.3.1-1(14)] 16.	Low Steam Generator Level Coincident With Steam Flow/Feedwater Flow Mismatch	2 Level and 2 Stm/Feed Flow Mismatch Per SG	1 Level and 2 Stm/Feed Flow Mismatch Per SG OR 2 Level and 1 Stm/Feed Flow Mismatch Per SG	ACTION 6 E	Reactor Critical MODES 1, 2

Amendment No. 175

Supplement 1

Specification 3.3.1 (A1)

ITS

TABLE 3.5-2 (Continued)

REACTOR TRIP INSTRUMENTATION LIMITING OPERATING CONDITIONS

TABLE NOTATIONS

(and rods not fully inserted or Rod Control System capable of rod withdrawal.) (L35)

(a) * With the reactor trip breakers closed.

(b) ** Below the P-10 (Low Setpoint Power Range Neutron Flux Interlock) setpoint.

(d) *** Below the P-6 (Intermediate Range Neutron Flux Interlock) setpoint.

(h) **** Above the P-10 (Low Setpoint Power Range Neutron Flux Interlock) setpoint or P-7 (Turbine First Stage Pressure Interlock) setpoint and below the P-8 (Low Setpoint Power Range Neutron Flux Interlock) setpoint. (L5)

(f) ***** Above the P-10 (Low Setpoint Power Range Neutron Flux Interlock) setpoint or P-7 (Turbine First Stage Pressure Interlock) setpoint.

Add Notes (c),(e),(i) (A26)

ACTION STATEMENTS

[ACTION B] ACTION 1 With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 1 (48) hours, or be in the HOT SHUTDOWN CONDITION (Mode 3) within the next 8 hours (and open RTBs in 55 hours). (L6)

[ACTION D] ACTION 2 With the number of OPERABLE channels one less than the Total Number of Channels, Startup and/or Power Operation may proceed provided the following Conditions are satisfied: (Add RA D.2.2 "NOTE") (L7)

a. The inoperable channel is placed in the tripped condition within 1 (6) hour. (L8)

b. Either, thermal power is restricted to less than or equal to 75% of rated power and the Power Range Neutron Flux trip setpoint is reduced to less than or equal to 85% of rated power within 4 hours, or, the Quadrant Power Tilt Ratio is monitored within 12 hours and every 12 hours thereafter, using the movable incore detectors to confirm that the normalized symmetric power distribution is consistent with the indicated Quadrant Power Tilt Ratio (or be in MODE 3 in 12 hours). (M6)

ACTION 3 With the number of channels OPERABLE one less than the Minimum Channels OPERABLE requirement and with the thermal power level:

[ACTION H] a. Below the P-6 (Intermediate Range Neutron Flux Interlock) setpoints, restore the inoperable channel to OPERABLE status prior to increasing thermal power above the P-6 setpoint.

[ACTION F] b. Above the P-6 (Intermediate Range Neutron Flux Interlock) setpoint but below 10% of rated power, restore the inoperable channel to OPERABLE status prior to increasing thermal power above 10% of rated power. (Reduce power to < P6 in 2 hours or increase power to > P10 in 2 hours.) (M7) (L36)

Supplement 1

Specification 3.3.1

ITS

A1

REACTOR TRIP INSTRUMENTATION LIMITING OPERATING CONDITIONS

TABLE NOTATIONS

[ACTION I] ACTION 4 — With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, suspend all operations involving positive reactivity changes. immediately — M2

[ACTION L] ACTION 5 — With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, verify compliance with Shutdown Margin within 1 hour and at least once per 12 hours thereafter. Add RA L.1 and L.2 — M3

[ACTION E] ACTION 6 — With the number of OPERABLE channels one less than the Total Number of Channels, Startup and/or Power Operation may proceed ~~until performance of the next required operational test~~ provided the inoperable channel is placed into the tripped condition within (1) 6 hour. or be in MODE 3 in 12 hours — L3, M4, L3

[ACTION M] ACTION 7 — With the number of (6) OPERABLE channels one less than the Total Number of Channels, place the inoperable channel into the tripped condition within (1) 6 hour, ~~and restore the inoperable channel to OPERABLE status within 7 days or be in at least the Hot Shutdown Condition within the next 8 hours~~. — L4

[ACTION N] <P8 in 12 hrs

[ACTION P] <P7 in 10 hrs — or reduce THERMAL POWER <P7 in 12 hours

[ACTION C] [ACTION K] ACTION 8 — With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or open the Reactor Trip Breakers within ~~the next hour~~ in 49 hours.

~~ACTION 9 — Log individual rod position within 1 hour and every hour thereafter, and following load changes of >10% of rated power, or after >30 inches of control rod motion. In addition to the above ACTIONS, if both rod misalignment monitors (15.A and 15.B) are inoperable with reactor power >50% of rated power for 2 hours or more, the nuclear overpower trip shall be reset to ≤ 93% or rated power.~~

~~ACTION 10 — Log individual upper and lower ion chamber currents within 1 hour and every hour thereafter, and following load changes of >10% of rated power, or above >30 inches of control rod motion. In addition to the above ACTIONS, if both rod misalignment monitors (15.A and 15.B) are inoperable with reactor power >50% of rated power for two hours or more, the nuclear overpower trip shall be reset to ≤ 93 percent of rated power.~~

LA7

Specification 3.3.2 (A1)

ITS

TABLE 3.5-3

ENGINEERED SAFETY FEATURES INSTRUMENTATION LIMITING OPERATING CONDITIONS

(A27)

	NO.	FUNCTIONAL UNIT	1 TOTAL NO. OF CHANNELS	2 MINIMUM CHANNELS OPERABLE	3 OPERABLE ACTION IF COLUMN 1 OR 2 CANNOT BE MET	APPLICABLE CONDITIONS
	1.	SAFETY INJECTION				MODE 1,2,3,4
[T3.3.2-1(1a)]	A.	Manual	2	2	ACTION 1 B	≥200°F
[T3.3.2-1(1c)]	B.	High Containment Pressure (Hi Level)	3	2	ACTION 12 E	≥200°F
[T3.3.2-1(1e)]	C.	High Differential Pressure between Any Steam Line and the Steam Header	3/Steam Line	2/Steam Line	ACTION 1 D	# MODE 1,2,3(a)
[T3.3.2-1(1d)]	D.	Pressurizer Low Pressure	3	2	ACTION 2 D	# MODES 1,2,3(a)
[T3.3.2-1(4d)]	E.	High Steam Flow in 2/3 Steam Lines Coincident with Low T_{avg} in 2/3 loops	2/Steam Line and 1 T_{avg} Loop	1/Steam Line and 1 T_{avg} in 2 Loops OR 2/Steam Line and 1 T_{avg}	ACTION 12 D	≥350°F ## (A11) (C) MODES 1,2(b),3(b)
[T3.3.2-1(4e)]	F.	High Steam Flow in 2/3 Steam Lines Coincident with Low Steam Pressure in 2/3 lines	2/Steam Line and 1 Press/Line	1/Steam Line and 1 Press in 2 Lines OR 2/Steam Line and 1 Press	ACTION 12 E	≥350°F ##
	2.	CONTAINMENT SPRAY			(M24) I	MODES 1,2,3,4
[T3.3.2-1(2a)]	A.	Manual	2	2	ACTION 3	≥200°F
[T3.3.2-1(3c)]	B.	High Containment Pressure (Hi Hi Level)	3/Set	2/Set	ACTION 12 E	≥200°F

Supplement 1

TABLE 3.5-3 (Continued)

ITS

ENGINEERED SAFETY FEATURES INSTRUMENTATION LIMITING OPERATING CONDITIONS

TABLE NOTATIONS

[T3.3.2-1 Note a] # Above Low Pressure SI Block Permit interlock.

[T3.3.2-1 Note d] ## Trip function may be blocked below Low T_{avg} Interlock setpoint.

The reactor may remain critical below the Power Operating conditions with this feature inhibited for the purpose of starting reactor coolant pumps. (See 3.3.5)

[ACTION B] ACTION 11 With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in at least the Hot Shutdown Condition within the next ~~8~~ 6 hours and the Cold Shutdown Condition within the following 30 hours. (M22)

[ACTION C, ACTION D, ACTION E, ACTION G] ACTION 12 With the number of OPERABLE channels one less than the Total Number of Channels, Power Operation may proceed ~~until performance of the next required operational test~~ provided the inoperable channel is placed into the tripped condition within ~~1~~ 6 hour. (L21)

[ACTION I] ACTION 13 With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 1 hour or be in ~~at least the Hot Shutdown Condition within the next 8 hours and the Cold Shutdown Condition within the following 30 hours.~~ MODE 3 in 7 hrs, MODE 4 in 13 hrs, MODE 5 in 37 hrs (M24)

ACTION 14 With the number of OPERABLE channels one less than the Total Number of Channels, place the inoperable channel into the blocked condition within 1 hour, and restore the inoperable channel to OPERABLE status within 48 hours or be in at least the Hot Shutdown Condition within the next 8 hours and the Cold Shutdown Condition within the following 30 hours. (See 3.3.5)

(M23)

[ACTION C] or be in MODE 3 in 12 hours and MODE 5 in 42 hours

[ACTION D/G] or be in MODE 3 in 12 hours and MODE 4 in 18 hours

[ACTION E] or be in MODE 3 in 12 hours, MODE 4 in 18 hours and MODE 5 in 36 hours

Add RA E.1 "NOTE"

Add ACTIONS "Note" (A5)

Specification 3.3.5

(A1)

ITS

TABLE 3.5-3 (Continued)

ENGINEERED SAFETY FEATURES INSTRUMENTATION LIMITING OPERATING CONDITIONS

(A27)

NO.	FUNCTIONAL UNIT	1 TOTAL NO. OF CHANNELS	2 MINIMUM CHANNELS OPERABLE	3 OPERABLE ACTION IF COLUMN 1 OR 2 CANNOT BE MET	APPLICABLE CONDITIONS
3.	LOSS OF POWER				
A. [LCO 3.3.5]	480V Emerg. Bus Undervoltage (Loss of Voltage)	2/Bus	1/Bus	ACTION 14	Reactor Critical
B. [LCO 3.3.5]	480V Emerg. Bus Undervoltage (Degraded Voltage)	3/Bus	2/Bus	ACTION 14	Reactor Critical ###

Shall be OPERABLE

Modes 1, 2, 3, and 4, when associated DG is required to be OPERABLE by LCO 3.8.2

(M36)

Add ACTIONS "NOTE" ← (A5)

TABLE 3.5-3 (Continued)

ENGINEERED SAFETY FEATURES INSTRUMENTATION LIMITING OPERATING CONDITIONS

TABLE NOTATIONS

#	Above Low Pressure SI Block Permit interlock.
##	Trip function may be blocked below Low T_{avg} Interlock setpoint.
###	The reactor may remain critical below the Power Operating conditions with this feature inhibited for the purpose of starting reactor coolant pumps.

See 3.3.2

[Applicability Note]

ACTION 11	With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in at least the Hot Shutdown Condition within the next 8 hours and the Cold Shutdown Condition within the following 30 hours.
ACTION 12	With the number of OPERABLE channels one less than the Total Number of Channels. Power Operation may proceed until performance of the next required operational test provided the inoperable channel is placed into the tripped condition within 1 hour.
ACTION 13	With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 1 hour or be in at least the Hot Shutdown Condition within the next 8 hours and the Cold Shutdown Condition within the following 30 hours.
ACTION 14	With the number of OPERABLE channels one less than the Total Number of Channels, place the inoperable channel into the blocked condition within 1 hour and restore the inoperable channel to OPERABLE status within 48 hours or be in at least the Hot Shutdown Condition within the next 8 hours and the Cold Shutdown Condition within the following 30 hours.

per bus

bypassed

2

L28

6

One or more loss of Voltage Functions

or enter applicable condition(s) and RA(s) for the associated DG made inoperable by LOP DG start instrumentation immediately

Specification 3.3.5

(A1)

TABLE 3.5-3 (Continued)

ITS

ENGINEERED SAFETY FEATURES INSTRUMENTATION LIMITING OPERATING CONDITIONS

TABLE NOTATIONS

\# Above Low Pressure SI Block Permit interlock.

\## Trip function may be blocked below Low T_{avg} Interlock setpoint. (See 3.3.2)

\### The reactor may remain critical below the Power Operating conditions with this feature inhibited for the purpose of starting reactor coolant pumps. [Applicability Note]

ACTION 11 With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in at least the Hot Shutdown Condition within the next 8 hours and the Cold Shutdown Condition within the following 30 hours.

ACTION 12 With the number of OPERABLE channels one less than the Total Number of Channels. Power Operation may proceed until performance of the next required operational test provided the inoperable channel is placed into the tripped condition within 1 hour.

ACTION 13 With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 1 hour or be in at least the Hot Shutdown Condition within the next 8 hours and the Cold Shutdown Condition within the following 30 hours.

ACTION 14 With the number of OPERABLE channels ~~one~~ (per bus) less than the Total Number of Channels, place the inoperable channel into the ~~blocked~~ (tripped) condition within ~~1~~ (6) hour ~~and restore the inoperable channel to OPERABLE status within 48 hours or be in at least the Hot Shutdown Condition within the next 8 hours and the Cold Shutdown Condition within the following 30 hours~~. (L29)

[ACTION B] [ACTION D]

One or more degraded voltage functions

Or enter applicable condition(s) and RA(s) for the associated DG made inoperable by LOP DG start instrumentation immediately

Add RA B.1 "Note" (L30)

Add ACTION C (M37)

A1

TABLE 3.5-4

ISOLATION FUNCTIONS INSTRUMENTATION LIMITING OPERATING CONDITIONS

ITS

A27

NO.	FUNCTIONAL UNIT	1 TOTAL NO. OF CHANNELS	2 MINIMUM CHANNELS OPERABLE	3 OPERABLE ACTION IF COLUMN 1 OR 2 CANNOT BE MET	APPLICABLE CONDITIONS
1.	CONTAINMENT ISOLATION				
	A. Phase A				
[T 3.3.2-1 (3a3)]	i. Safety Injection	See Item No. 1 of Table 3.5-3 for all Safety Injection initiating functions and requirements			MODES 1,2,3,4
[T 3.3.2-1 (3a1)]	ii. Manual	2	2	ACTION 1 B	>200°F (A27)
[T 3.3.2-1 (3b)]	B. Phase B	See Item No. 2 of Table 3.5-3 for all Containment Spray initiating functions and requirements			
	C. Ventilation Isolation				See 3.3.6
	i. High Containment Activity. Gaseous	1	0	ACTION 15	During Containment Purge
	ii. High Containment Activity. Particulate	1	0	ACTION 15	During Containment Purge
	iii. Phase A	See Item No. 1.A of Table 3.5-4 for all Phase A initiating functions and requirements			

Add Table 3.3.2-1 Items 1b, 2b, 3a(2), 3b(2), 4b, and 5a

Add ACTIONS C, G.

L13

Specification 3.3.6
A1

TABLE 3.5-4

ITS

ISOLATION FUNCTIONS INSTRUMENTATION LIMITING OPERATING CONDITIONS

A27

NO.	FUNCTIONAL UNIT			1 TOTAL NO. OF CHANNELS	2 MINIMUM CHANNELS OPERABLE	3 OPERABLE ACTION IF COLUMN 1 OR 2 CANNOT BE MET	APPLICABLE CONDITIONS
1.	CONTAINMENT ISOLATION						See 3.2.2
	A.	Phase A					
		i.	Safety Injection	See Item No. 1 of Table 3.5-3 for all Safety Injection initiating functions and requirements			
		ii.	Manual	2	2	ACTION II	>200°F
	B.	Phase B		See Item No. 2 of Table 3.5-3 for all Containment Spray initiating functions and requirements			
	C.	Ventilation Isolation					Core Alterations and movement of irradiated fuel within containment (M40)
[T3.3.6-1 (3a)]		i.	High Containment Activity. Gaseous	1	0	ACTION 15 (A)	During Containment Purge
[T3.3.6-1 (3b)]		ii.	High Containment Activity. Particulate	1	0	ACTION 15	During Containment Purge
		iii.	Phase A	See Item No. 1A of Table 3.5-4 for all Phase A initiating functions and requirements			

A27

A23

Add Table 3.3.6-1 Functions 1 and 2 — M41

Amendment No. ~~85~~. 175

Supplement 1

Specification 3.3.2

(A1)

TABLE 3.5-4 (Continued)

ISOLATION FUNCTIONS INSTRUMENTATION LIMITING OPERATING CONDITIONS

ITS

(A27)

NO.	FUNCTIONAL UNIT	1 TOTAL NO. OF CHANNELS	2 MINIMUM CHANNELS OPERABLE	3 OPERABLE ACTION IF COLUMN 1 OR 2 CANNOT BE MET	APPLICABLE CONDITIONS
2.	STEAM LINE ISOLATION				
[T3.3.2-1 (1f)] A.	High Steam Flow in 2/3 Steam Lines Coincident with Low T_{avg} in 2/3 loops	See Item No. 1.E of Table 3.5-3 for initiating functions and requirements			
[T3.3.2-1 (1g)] B.	High Steam Flow in 2/3 Steam Lines Coincident with Low Steam Pressure in 2/3 lines	See Item No. 1.F of Table 3.5-3 for initiating functions and requirements			
[T3.3.2-1 (4c)] C.	High Containment Pressure (Hi Hi Level)	See Item No. 2.B of Table 3.5-3 for initiating functions and requirements			
[T3.3.2-1 (4a)] D.	Manual	1/Line	1/Line	ACTION 16 (F)	≥ 350°F MODES 1, 2[(b)], 3[(b)]
3.	FEEDWATER LINE ISOLATION				
[T3.3.2-1 (5)] A.	Safety Injection	See Item No. 1 of Table 3.5-3 for all Safety Injection initiating functions and requirements			

(A27) (M25)

Add ACTION H
SR 3.3.2.1 SR 3.3.2.5
SR 3.3.2.3 SR 3.3.2.7
SR 3.3.2.4
T 3.3.2-1 Item 6

(M27)

Add T 3.3.2-1 "Allowable Value" column (M12)

Amendment No. ~~85~~, 175

Supplement 1

ITS

TABLE 3.5-4 (Continued)

ISOLATION FUNCTIONS INSTRUMENTATION LIMITING OPERATING CONDITIONS

TABLE NOTATIONS

See 3.3.6

ACTION 15 With less than the Total Number of Channels, Power Operations may continue provided the Containment Ventilation Purge and Exhaust valves are maintained closed.

[ACTION F] ACTION 16 With the number of channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or declare the associated valve inoperable and take the ACTION required by Specification 3.4.3.

M25

[ACTION B] be in MODE 3 in 54 hours and MODE 5 in 84 hrs

[ACTION F] be in MODE 3 in 54 hrs and MODE 4 in 60 hrs

Specification 3.3.6

(A1)

ITS

TABLE 3.5-4 (Continued)

ISOLATION FUNCTIONS INSTRUMENTATION LIMITING OPERATING CONDITIONS

TABLE NOTATIONS

one radiation monitoring

inoperable

ACTION 15 With less than the Total Number of Channels. Power Operations may continue provided the Containment Ventilation Purge and Exhaust valves are maintained closed.

[ACTION A.1]

ACTION 16 With the number of channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or declare the associated valve inoperable and take the ACTION required by Specification 3.4.3.

See 3.3.2

Add ACTIONS "NOTE" — A5

Add ACTION A.2 — M38

Add SR "NOTE" — A5

Specification 3.7.11
3.7.12

ITS

(A1)

j. If any of the specified limiting conditions for refueling are not met, refueling of the reactor shall cease; work shall be initiated to correct the conditions so that the specified limits are met; and no operations which may increase the reactivity of the core shall be made.

k. The reactor shall be subcritical as required by 3.10.8.3.

See 3.9.1 3.9.2 3.9.3 3.9.4 3.9.6

3.8.2 The Spent Fuel Building Filter system and the Containment Purge filter system shall satisfy the following conditions:

a. The results of the in-place cold DOP and halogenated hydrocarbon tests at greater than 20 percent design flows on HEPA filters and charcoal absorber banks shall show ≥ 99 percent DOP removal and ≥ 99 percent halogenated hydrocarbon removal.

b. Verification by way of laboratory carbon sample analysis from the Spent Fuel Building filter system carbon and the Containment Purge filter system carbon to show ≥ 90 percent radioactive methyl iodide removal in accordance with test 5.b of Table 5-1 of ANSI/ASME N509-1976 except that ≥ 70 percent relative humidity air is required.

See 5.5.11

c. 1. The Spent Fuel Building refueling filter fan shall be shown to operate within ± 10% of the design flow.

2. At least one Containment purge filter fan shall be shown to operate within ± 10% of the design flow and must be operable during core alterations or movement of irradiated fuel assemblies, or at least one automatic containment isolation valve in each line penetrating the containment which provides a direct path from the containment atmosphere to the outside atmosphere shall be securely closed.

See 3.9.3

d. During fuel handling operations, the relative humidity (R.H.) of the air processed by the refueling filter systems shall be ≤ 70 percent.

See 5.5.11

[ACTION A] e. From and after the date that the Spent Fuel Building filter system is made or found to be inoperable for any reason, fuel handling operations in the Spent Fuel Building shall be terminated immediately.

(L19) movement of irradiated fuel assemblies

Add SR 3.7.11.1
SR 3.7.11.2
SR 3.7.11.3 (M33)

Add Specification 3.7.12 (M34)

Specification 3.9.1

A1

ITS

j If any of the specified limiting conditions for refueling are not met, refueling of the reactor shall cease; work shall be initiated to correct the conditions so that the specified limits are met; and no operations which may increase the reactivity of the core shall be made.

[ACTION A]

k. The reactor shall be subcritical as required by 3.10.8.3. A2

3.8.2 The Spent Fuel Building Filter system and the Containment Purge filter system shall satisfy the following conditions:

a The results of the in-place cold DOP and halogenated hydrocarbon tests at greater than 20 percent design flows on HEPA filters and charcoal absorber banks shall show ≥ 99 percent DOP removal and ≥ 99 percent halogenated hydrocarbon removal.

b. Verification by way of laboratory carbon sample analysis from the Spent Fuel Building filter system carbon and the Containment Purge filter system carbon to show ≥ 90 percent radioactive methyl iodide removal in accordance with test 5.b of Table 5-1 of ANSI/ASME N509-1976 except that ≥ 70 percent relative humidity air is required.

See 5.5.11

c 1. The Spent Fuel Building refueling filter fan shall be shown to operate within ± 10% of the design flow.

2. At least one Containment purge filter fan shall be shown to operate within ± 10% of the design flow and must be operable during core alterations or movement of irradiated fuel assemblies, or at least one automatic containment isolation valve in each line penetrating the containment which provides a direct path from the containment atmosphere to the outside atmosphere shall be securely closed.

See 3.9.3

d During fuel handling operations, the relative humidity (R.H.) of the air processed by the refueling filter systems shall be ≤ 70 percent.

See 5.5.11

e. From and after the date that the Spent Fuel Building filter system is made or found to be inoperable for any reason, fuel handling operations in the Spent Fuel Building shall be terminated immediately.

See 3.7.11

Specification 3.9.2

(A1)

ITS

both of the source range neutron monitors are inoperable (L5)

[ACTION B.1] [ACTION A.2]

j. If any of the specified limiting conditions for refueling are not met, refueling of the reactor shall cease; work shall be initiated to correct the conditions so that the specified limits are met; and no operations which may increase the reactivity of the core shall be made.

Core alterations (M13)

k. The reactor shall be subcritical as required by 3.10.8.3. (A2)

3.8.2 The Spent Fuel Building Filter system and the Containment Purge filter system shall satisfy the following conditions:

a. The results of the in-place cold DOP and halogenated hydrocarbon tests at greater than 20 percent design flows on HEPA filters and charcoal absorber banks shall show ≥ 99 percent DOP removal and ≥ 99 percent halogenated hydrocarbon removal.

b. Verification by way of laboratory carbon sample analysis from the Spent Fuel Building filter system carbon and the Containment Purge filter system carbon to show ≥ 90 percent radioactive methyl iodide removal in accordance with test 5.b of Table 5-1 of ANSI/ASME N509-1976 except that ≥ 70 percent relative humidity air is required.

(See 5.5.11)

c. 1. The Spent Fuel Building refueling filter fan shall be shown to operate within ± 10% of the design flow.

2. At least one Containment purge filter fan shall be shown to operate within ± 10% of the design flow and must be operable during core alterations or movement of irradiated fuel assemblies, or at least one automatic containment isolation valve in each line penetrating the containment which provides a direct path from the containment atmosphere to the outside atmosphere shall be securely closed.

(See 3.9.3)

d. During fuel handling operations, the relative humidity (R.H.) of the air processed by the refueling filter systems shall be ≤ 70 percent.

(See 5.5.11)

e. From and after the date that the Spent Fuel Building filter system is made or found to be inoperable for any reason, fuel handling operations in the Spent Fuel Building shall be terminated immediately.

(See 3.7.11)

Add RA B.2 (M4)

Specification 3.9.3

ITS

(A1)

Suspend CORE ALTERATIONS

[ACTION A]

j If any of the specified limiting conditions for refueling are not met, refueling of the reactor shall cease, work shall be initiated to correct the conditions so that the specified limits are met, and no operations which may increase the reactivity of the core shall be made. (L4)

Suspend movement of irradiated Fuel Assemblies in containment

k. The reactor shall be subcritical as required by 3.10.8. (A2)

3.8.2 The Spent Fuel Building Filter system and the Containment Purge filter system shall satisfy the following conditions:

a The results of the in-place cold DOP and halogenated hydrocarbon tests at greater than 20 percent design flows on HEPA filters and charcoal absorber banks shall show ≥ 99 percent DOP removal and ≥ 99 percent halogenated hydrocarbon removal. (See 5.5.11)

b Verification by way of laboratory carbon sample analysis from the Spent Fuel Building filter system carbon and the Containment Purge filter system carbon to show ≥ 90 percent radioactive methyl iodide removal in accordance with test 5.b of Table 5-1 of ANSI/ASME N509-1976 except that ≥ 70 percent relative humidity air is required.

c 1. The Spent Fuel Building refueling filter fan shall be shown to operate within ± 10% of the design flow.

2. At least one Containment purge filter fan shall be shown to operate within ± 10% of the design flow and must be operable during core alterations or movement of irradiated fuel assemblies, or at least one automatic containment isolation valve in each line penetrating the containment which provides a direct path from the containment atmosphere to the outside atmosphere shall be securely closed. (LA8) (A9)

d During fuel handling operations, the relative humidity (R.H.) of the air processed by the refueling filter systems shall be ≤ 70 percent. (See 5.5.11)

e. From and after the date that the Spent Fuel Building filter system is made or found to be inoperable for any reason, fuel handling operations in the Spent Fuel Building shall be terminated immediately. (See 3.7.11)

Add SR 3.9.3.1 (M6)

Specification 3.9.4
3.9.5

ITS

[ACTION A]

Suspend loading irradiated fuel assemblies in the core immediately (L6) (A1)

immediately (A10)

j. If any of the specified limiting conditions for refueling are not met, refueling of the reactor shall cease; work shall be initiated to correct the conditions so that the specified limits are met; and no operations which may increase the reactivity of the core shall be made. (M8)

and close all penetrations with direct access to outside within 4 hours

k. The reactor shall be subcritical as required by 3.10.8.3. (A2)

3.8.2 The Spent Fuel Building Filter system and the Containment Purge filter system shall satisfy the following conditions:

a. The results of the in-place cold DOP and halogenated hydrocarbon tests at greater than 20 percent design flows on HEPA filters and charcoal absorber banks shall show ≥ 99 percent DOP removal and ≥ 99 percent halogenated hydrocarbon removal.

b. Verification by way of laboratory carbon sample analysis from the Spent Fuel Building filter system carbon and the Containment Purge filter system carbon to show ≥ 90 percent radioactive methyl iodide removal in accordance with test 5.b of Table 5-1 of ANSI/ASME N509-1976 except that ≥ 70 percent relative humidity air is required.

See 5.5.11

c. 1. The Spent Fuel Building refueling filter fan shall be shown to operate within ± 10% of the design flow.

2. At least one Containment purge filter fan shall be shown to operate within ± 10% of the design flow and must be operable during core alterations or movement of irradiated fuel assemblies, or at least one automatic containment isolation valve in each line penetrating the containment which provides a direct path from the containment atmosphere to the outside atmosphere shall be securely closed.

See 3.9.3

d. During fuel handling operations, the relative humidity (R.H.) of the air processed by the refueling filter systems shall be ≤ 70 percent.

See 5.5.11

e. From and after the date that the Spent Fuel Building filter system is made or found to be inoperable for any reason, fuel handling operations in the Spent Fuel Building shall be terminated immediately.

See 3.7.11

Add SR 3.9.4.1 (M9)

Add Specification 3.9.5 (M10)

ITS

(A1)

j. If any of the specified limiting conditions for refueling are not met, refueling of the reactor shall cease; work shall be initiated to correct the conditions so that the specified limits are met; and no operations which may increase the reactivity of the core shall be made. [ACTION A]

See 3.9.1, 3.9.2, 3.9.4, 3.9.5

k. The reactor shall be subcritical as required by 3.10.8.3. (A2)

3.8.2 The Spent Fuel Building Filter system and the Containment Purge filter system shall satisfy the following conditions:

a. The results of the in-place cold DOP and halogenated hydrocarbon tests at greater than 20 percent design flows on HEPA filters and charcoal absorber banks shall show ≥ 99 percent DOP removal and ≥ 99 percent halogenated hydrocarbon removal.

b. Verification by way of laboratory carbon sample analysis from the Spent Fuel Building filter system carbon and the Containment Purge filter system carbon to show ≥ 90 percent radioactive methyl iodide removal in accordance with test 5.b of Table 5-1 of ANSI/ASME N509-1976 except that ≥ 70 percent relative humidity air is required.

See 5.5.11

c. 1. The Spent Fuel Building refueling filter fan shall be shown to operate within ± 10% of the design flow.

2. At least one Containment purge filter fan shall be shown to operate within ± 10% of the design flow and must be operable during core alterations or movement of irradiated fuel assemblies, or at least one automatic containment isolation valve in each line penetrating the containment which provides a direct path from the containment atmosphere to the outside atmosphere shall be securely closed.

See 3.9.3

d. During fuel handling operations, the relative humidity (R.H.) of the air processed by the refueling filter systems shall be ≤ 70 percent.

See 5.5.11

e. From and after the date that the Spent Fuel Building filter system is made or found to be inoperable for any reason, fuel handling operations in the Spent Fuel Building shall be terminated immediately.

See 3.7.11

Add SR 3.9.6.1 (M12)

and suspend movement of irradiated fuel assemblies within containment (M17)

Supplement 1

Specification 5.5

(A1)

ITS

j. If any of the specified limiting conditions for refueling are not met, refueling of the reactor shall cease; work shall be initiated to correct the conditions so that the specified limits are met; and no operations which may increase the reactivity of the core shall be made.

k. The reactor shall be subcritical as required by 3.10.8.3.

See 3.9.1 3.9.2 3.9.4 3.9.3 3.9.6

3.8.2 The Spent Fuel Building Filter system and the Containment Purge filter system shall satisfy the following conditions:

[5.5.11.a] [5.5.11.b] a. The results of the in-place cold DOP and halogenated hydrocarbon tests at greater than 20 percent design flows on HEPA filters and charcoal absorber banks shall show ≥ 99 percent DOP removal and ≥ 99 percent halogenated hydrocarbon removal.

[5.5.11.c] b. Verification by way of laboratory carbon sample analysis from the Spent Fuel Building filter system carbon and the Containment Purge filter system carbon to show ≥ 90 percent radioactive methyl iodide removal in accordance with test 5.b of Table 5-1 of ANSI/ASME N509-1976 except that ≥ 70 percent relative humidity air is required.

LA9

c. 1. The Spent Fuel Building refueling filter fan shall be shown to operate within ± 10% of the design flow.

2. At least one Containment purge filter fan shall be shown to operate within ± 10% of the design flow and must be operable during core alterations or movement of irradiated fuel assemblies, or at least one automatic containment isolation valve in each line penetrating the containment which provides a direct path from the containment atmosphere to the outside atmosphere shall be securely closed.

See 3.9.3

[5.5.11.e] d. During fuel handling operations, the relative humidity (R.H.) of the air processed by the refueling filter systems shall be ≤ 70 percent.

e. From and after the date that the Spent Fuel Building filter system is made or found to be inoperable for any reason, fuel handling operations in the Spent Fuel Building shall be terminated immediately.

See 3.7.11

Relocated Specifications

For a specified test interval W and an M out of N redundant system with identical and independent channels having a constant failure rate λ, the average availability A is given by:

$$A = \frac{W - Q\left(\frac{W}{N-M+2}\right)}{W} = 1 - \frac{N!}{(N-M+2)!\ (M-1)!}(\lambda W)^{N-M+1}$$

where A is defined as the fraction of time during which the system is functional, and Q is the probability of failure of such a system during a time interval W.

For a 2-out-of-3 system A = 0.9999968, assuming a channel failure rate, λ, equal to 2.5×10^{-6} hr^{-1} and a test interval, W, equal to 720 hrs.

This average availability of the 2-out-of-3 system is high, hence the test interval of one month is acceptable.

Because of their greater degree of redundancy, the 1/3 and 2/4 logic arrays provide an even greater measure of protection and are thereby acceptable for the same testing interval. Those items specified for monthly testing are associated with process components where other means of verification provide additional assurance that the channel is operable, thereby requiring less frequent testing.

MSSV's

This surveillance verifies the OPERABILITY of the MSSVs by the verification of each MSSV lift setpoint in accordance with the Inservice Testing Program. The ASME Code, Section XI (Ref. 3), requires that safety and relief valve tests be performed in accordance with ANSI/ASME OM-1 1981 (Ref. 4). According to Reference 4, the following tests are required:

a. Visual examination,

b. Seat tightness determination,

c. Setpoint pressure determination (lift setting), and

d. Compliance with owner's seat tightness criteria.

The ANSI/ASME Standard requires that all valves be tested every 5 years, and a minimum of 20% of the valves be tested every 24 months. The ASME Code specifies the activities and frequencies necessary to satisfy the requirements. Table 4.1-4 allows a ± 3% setpoint tolerance for OPERABILITY; however, the valves are reset to ± 1% during the Surveillance to allow for drift.

A2

Relocated Specifications

This Surveillance is modified by a Note that allows entry into and operation in Hot/No Load prior to performing the Surveillance. The MSSVs may be either bench tested or tested in situ at hot conditions using an assist device to simulate lift pressure. If the MSSVs are not tested at hot conditions, the lift setting pressure shall be corrected to ambient conditions of the valve at operating temperature and pressure.

A2

Reference

(1) FSAR Section 7.2.2
(2) UFSAR Section 15.2
(3) ASME Boiler and Pressure Vessel Code, Section XI
(4) ANSI/ASME OM-1-1981
(5) UFSAR Section 10.3.2.2

Supplement 1

Specification 3.4 16

A1

(HBR-28)

ITS

NOTES TO TABLE 4.1-2

LA6

(1) A gross activity analysis shall consist of the quantitative measurement of the total radioactivity of the primary coolant of units of Ci/gram.

(2) A radiochemical analysis shall consist of the quantitative measurement of each radionuclide with half life greater than 30 minutes making up at least 95% of the total activity of the primary coolant.

A27

Add SR 3.4.16.3 Note

LA10

(3) When iodine or particulate radioactivity levels exceed 10% of the limit in Specification 3.9.2.1, the sampling frequency shall be increased to a minimum of once each day.

(5) Deleted.

[SR 3.4.16.3] (6) Sample to be taken after a minimum of 2EFPD and 20 days of power operation have elapsed since the reactor was last subcritical for 48 hours or longer.

[SR 3.4.16.2] [SR 3.4.16.3] (7) Samples are to be taken in the power operating condition.

[RA A.1] (8) Sample taken at all operating conditions whenever the specific activity exceed 1.0 Ci/gram DOSE EQUIVALENT I-131 or 100/E Ci/gram. These samples are to be taken until the specific activity of the reactor coolant system is restored within its limits.

[SR 3.4.16.2] (9) One sample between 2 and 6 hours following a thermal power change exceeding 15 percent of the rated thermal power within a one-hour period. Samples are required when in the hot shutdown or power operating modes.

(10) Sample whenever that gross activity determination indicates iodine concentrations are greater than 10% of the allowable limit.

(11) Sample whenever the gross activity determination indicates iodine concentrations are below 10 percent of the allowable limit.

See 3.7.15

NA* - Not applicable.

Specification 3.1.4

(A1)

ITS

TABLE 4.1-3

FREQUENCIES FOR EQUIPMENT TESTS

(L3) (M11)

		Check	Frequency	Maximum Time Between Tests
1. [SR 3.1.4.3]	Control Rods (Not fully Inserted)	Rod drop times of all full length rods	Each refueling shutdown	NA* (L3)
2. [SR 3.1.4.2]	Control Rod	Partial movement of all full length rods (≥ 10 steps)	Every 2 weeks during reactor critical operations (92 days)	20 days
3.	Pressurizer Safety Valves	Set point	Each refueling shutdown	NA (See 3.4.10)
4.	Main Steam Safety Valves	Verify each required MSSV lift setpoint per Table 4.1-4 in accordance with the Inservice Testing Program. Following testing, lift setting shall be within +/- 1%.	In accordance with the Inservice Testing Program	NA (See 3.7.1)
5.	Containment Isolation Trip	Functioning	Each refueling shutdown	NA (See 3.6.3, 3.3.2)
6.	Refueling System Interlocks	Functioning	Prior to each refueling shutdown	NA (See 3.9.1)
7.	Service Water System.	Functioning	Each refueling shutdown	NA (See 3.7.7)
8.	DELETED			
9.	Primary System Leakage	Evaluate	Daily when reactor coolant system is above cold shutdown condition	NA (See 3.4.13)
10.	Diesel Fuel Supply	Fuel Inventory	Weekly	10 days (See 3.8.3)
11.	DELETED			
12.	Turbine Steam Stop, Control, Reheat Stop, and Interceptor Valves	Closure	Quarterly during power operation and prior to startup	115 days (See 3.7.1)

Add SR 3.1.4.1 (M12)

Specification 3.3.2

A1

ITS

TABLE 4.1-3

FREQUENCIES FOR EQUIPMENT TESTS

		Check	Frequency	Maximum Time Between Tests	
1.	Control Rods	Rod drop times of all full length rods	Each refueling shutdown	NA*	See 3.1.4
2.	Control Rod	Partial movement of all full length rods	Every 2 weeks during reactor critical operations	20 days	
3.	Pressurizer Safety Valves	Set point	Each refueling shutdown	NA	See 3.4.10
4.	Main Steam Safety Valves	Verify each required MSSV lift setpoint per Table 4.1-4 in accordance with the Inservice Testing Program. Following testing, lift setting shall be within +/- 1%.	In accordance with the Inservice Testing Program	NA	See 3.7.1
5.	Containment Isolation Trip	~~Functioning~~ TADOT	~~Each refueling shutdown~~ 18 Months	NA	T3.3.2-1(3) SR 3.3.2.6
6.	Refueling System Interlocks	Functioning	Prior to each refueling shutdown	NA	See 3.9.1
7.	Service Water System.	Functioning	Each refueling shutdown	NA	See 3.7.7
8.	DELETED				
9.	Primary System Leakage	Evaluate	Daily when reactor coolant system is above cold shutdown condition	NA	See 3.4.13
10.	Diesel Fuel Supply	Fuel Inventory	Weekly	10 days	See 3.8.3
11.	DELETED				
12.	Turbine Steam Stop, Control, Reheat Stop, and Interceptor Valves	Closure	Quarterly during power operation and prior to startup	115 days	See 3.7.1

Add SR 3.3.2.6 "NOTE" ← A10

Supplement 1

Specification 3.4.10
(A1)

ITS

TABLE 4.1-3

FREQUENCIES FOR EQUIPMENT TESTS

		Check	Frequency	Maximum Time Between Tests	
1.	Control Rods	Rod drop times of all full length rods	Each refueling shutdown	NA*	See 3.1.4
2.	Control Rod	Partial movement of all full length rods	Every 2 weeks during reactor critical operations	20 days	
[SR 3.4.10.1] 3.	Pressurizer Safety Valves	Set point	~~Each refueling shutdown~~ In Accordance with IST Program	~~NA~~	A15
4.	Main Steam Safety Valves	Verify each required MSSV lift setpoint per Table 4.1-4 in accordance with the Inservice Testing Program. Following testing, lift setting shall be within +/- 1%	In accordance with the Inservice Testing Program	NA	See 3.7.1
5.	Containment Isolation Trip	Functioning	Each refueling shutdown	NA	See 3.6.3 3.8.2
6.	Refueling System Interlocks	Functioning	Prior to each refueling shutdown	NA	See 3.9.1
7.	Service Water System.	Functioning	Each refueling shutdown	NA	See 3.7.7
8.	DELETED				
9.	Primary System Leakage	Evaluate	Daily when reactor coolant system is above cold shutdown condition	NA	See 3.7.7
10.	Diesel Fuel Supply	Fuel Inventory	Weekly	10 days	See 3.8.3
11.	DELETED				
12.	Turbine Steam Stop, Control, Reheat Stop, and Interceptor Valves	Closure	Quarterly during power operation and prior to startup	115 days	See 3.7.1

Supplement 1

Specification 3.4.13
A1

- ITS

TABLE 4.1-3

FREQUENCIES FOR EQUIPMENT TESTS

		Check	Frequency	Maximum Time Between Tests	
1.	Control Rods	Rod drop times of all full length rods	Each refueling shutdown	NA	See 3.1.4
2.	Control Rod	Partial movement of all full length rods	Every 2 weeks during reactor critical operations	20 days	
3.	Pressurizer Safety Valves	Set point	Each refueling shutdown	NA	See 3.4.10
4.	Main Steam Safety Valves	Verify each required MSSV lift setpoint per Table 4.1-4 in accordance with the Inservice Testing Program. Following testing, lift setting shall be within +/- 1%.	In accordance with the Inservice Testing Program	NA	See 3.7.1
5.	Containment Isolation Trip	Functioning	Each refueling shutdown	NA	See 3.6.3 3.7.2
6.	Refueling System Interlocks	Functioning	Prior to each refueling shutdown	NA	See 3.9.1
7.	Service Water System.	Functioning	Each refueling shutdown	NA	See 3.7.7
8.	DELETED				
9. [SR 3.4.13.1]	Primary System Leakage / Water inventory balance	Evaluate	Daily when reactor coolant system is above cold shutdown condition / MODES 1, 2, 3, 4 / Once within 12 hours after reaching steady state operation conditions AND 72 hours thereafter during steady state operation	NA	L11
10.	Diesel Fuel Supply	Fuel Inventory	Weekly	10 days	See 3.8.3
11.	DELETED				
12.	Turbine Steam Stop, Control, Reheat Stop, and Interceptor Valves	Closure	Quarterly during power operation and prior to startup	115 days	See 3.7.1

Specification 3.7.1

A1

ITS

TABLE 4.1-3

FREQUENCIES FOR EQUIPMENT TESTS

		Check	Frequency	Maximum Time Between Tests	
1.	Control Rods	Rod drop times of all full length rods	Each refueling shutdown	NA	See 3.1.4
2.	Control Rod	Partial movement of all full length rods	Every 2 weeks during reactor critical operations	20 days	
3.	Pressurizer Safety Valves	Set point	Each refueling shutdown	NA	See 3.4.10
4.	Main Steam Safety Valves [SR 3.7.1.1]	Verify each required MSSV lift setpoint per Table 4.1-4 (3.7.1-2) in accordance with the Inservice Testing Program. Following testing, lift setting shall be within +/- 1%.	In accordance with the Inservice Testing Program (Add SR 3.7.1.A "Note")	NA	A28
5.	Containment Isolation Trip	Functioning	Each refueling shutdown	NA	See 3.3.2, 3.6.3
6.	Refueling System Interlocks	Functioning	Prior to each refueling shutdown	NA	See 3.9.1
7.	Service Water System.	Functioning	Each refueling shutdown	NA	See 3.7.7
8.	DELETED				
9.	Primary System Leakage	Evaluate	Daily when reactor coolant system is above cold shutdown condition	NA	See 3.4.13
10.	Diesel Fuel Supply	Fuel Inventory	Weekly	10 days	See 3.8.3
11.	DELETED				
12.	Turbine Steam Stop, Control, Reheat Stop and Interceptor Valves	Closure	Quarterly during power operation and prior to startup	115 days	LA1

Supplement 1

Specification 3.7.7

(A1)

ITS

TABLE 4.1-3

FREQUENCIES FOR EQUIPMENT TESTS

		Check	Frequency	Maximum Time Between Tests	
1.	Control Rods	Rod drop times of all full length rods	Each refueling shutdown	NA*	See 3.1.4
2.	Control Rod	Partial movement of all full length rods	Every 2 weeks during reactor critical operations	20 days	
3.	Pressurizer Safety Valves	Set point	Each refueling shutdown	NA	See 3.4.10
4.	Main Steam Safety Valves	Verify each required MSSV lift setpoint per Table 4.1-4 in accordance with the Inservice Testing Program. Following testing, lift setting shall be within +/- 1%.	In accordance with the Inservice Testing Program	NA	See 3.7.1
5.	Containment Isolation Trip	Functioning	Each refueling shutdown	NA	See 3.3.2 3.6.3
6.	Refueling System Interlocks	Functioning	Prior to each refueling shutdown	NA	See 3.9.1
7. [SR 3.7.7.3]	Service Water System	Functioning	~~Each refueling shutdown~~ 18 Months	~~NA~~	
8. / DELETED					
9.	Primary System Leakage	Evaluate	Daily when reactor coolant system is above cold shutdown condition	NA	See 3.4.13
10.	Diesel Fuel Supply	Fuel Inventory	Weekly	10 days	See 3.8.3
11. / DELETED					
12.	Turbine Steam Stop, Control, Reheat Stop, and Interceptor Valves	Closure	Quarterly during power operation and prior to startup	115 days	See 3.7.1

 Amendment No. 142, 155, 164, 171

Supplement 1

Specification 3.8.3
(A1) L

TABLE 4.1-3

FREQUENCIES FOR EQUIPMENT TESTS

- ITS

		Check	Frequency	Maximum Time Between Tests	
1.	Control Rods	Rod drop times of all full length rods	Each refueling shutdown	NA	See 3.1.4
2.	Control Rod	Partial movement of all full length rods	Every 2 weeks during reactor critical operations	20 days	
3.	Pressurizer Safety Valves	Set point	Each refueling shutdown	NA	See 3.4.10
4.	Main Steam Safety Valves	Verify each required MSSV lift setpoint per Table 4.1-4 in accordance with the Inservice Testing Program. Following testing, lift setting shall be within +/- 1%.	In accordance with the Inservice Testing Program	NA	See 3.7.1
5.	Containment Isolation Trip	Functioning	Each refueling shutdown	NA	See 3.3.2, 3.6.3
6.	Refueling System Interlocks	Functioning	Prior to each refueling shutdown	NA	See 3.9.1
7.	Service Water System.	Functioning	Each refueling shutdown	NA	See 3.7.7
8.	DELETED				
9.	Primary System Leakage	Evaluate	Daily when reactor coolant system is above cold shutdown condition	NA	See 3.4.13
[SR 3.8.3.1] 10.	Diesel Fuel Supply	Fuel Inventory	Weekly 31 days	10 days L10	
11.	DELETED				
12.	Turbine Steam Stop, Control, Reheat Stop, and Interceptor Valves	Closure	Quarterly during power operation and prior to startup	115 days	See 3.7.1

Verify a minimum supply of 14,000 gallons of diesel fuel oil available to the DGs from the Unit 2 fuel oil storage tank AND a total of 34,000 gallons available to the DGs from the combination of the Unit 1 I-C Turbine fuel oil storage tanks and the Unit 2 DG fuel oil storage tank

Supplement 1

Specification 3.9.1
A1

TABLE 4.1-3

FREQUENCIES FOR EQUIPMENT TESTS

- ITS

		Check	Frequency	Maximum Time Between Tests	
1.	Control Rods	Rod drop times of all full length rods	Each refueling shutdown	NA	See 3.1.4
2.	Control Rod	Partial movement of all full length rods	Every 2 weeks during reactor critical operations	20 days	
3.	Pressurizer Safety Valves	Set point	Each refueling shutdown	NA	See 3.4.10
4.	Main Steam Safety Valves	Verify each required MSSV lift setpoint per Table 4.1-4 in accordance with the Inservice Testing Program. Following testing, lift setting shall be within +/- 1%.	In accordance with the Inservice Testing Program	NA	See 3.7.1
5.	Containment Isolation Trip	Functioning	Each refueling shutdown	NA	See 3.3.2 3.6.3
6.	Refueling System Interlocks	Functioning	Prior to each refueling shutdown	NA	LA2
7.	Service Water System	Functioning	Each refueling shutdown	NA	See 3.7.7
8.	DELETED				
9.	Primary System Leakage	Evaluate	Daily when reactor coolant system is above cold shutdown condition	NA	See 3.4.13
10.	Diesel Fuel Supply	Fuel Inventory	Weekly	10 days	See 3.8.3
11.	DELETED				
12.	Turbine Steam Stop, Control, Reheat Stop, and Interceptor Valves	Closure	Quarterly during power operation and prior to startup	115 days	See 3.7.1

Supplement 1

ITS

Specification 3.7.1

(A1)

Table 4.1-4
Main Steam Safety Valve Lift Settings

VALVE NUMBER			LIFT SETTING (psig ± 3%)
STEAM GENERATOR			
A	B	C	
SV1-1A	SV1-1B	SV1-1C	1085
SV1-2A	SV1-2B	SV1-2C	1110
SV1-3A	SV1-3B	SV1-3C	1125
SV1-4A	SV1-4B	SV1-4C	1140

[T 3.7.1-2]

Supplement 1

ITS

Specification 5.5

A1

Class 2 and Class 3 components were chosen based on Regulatory Guide 1.26 and ANSI N18.2 and N18.2a "Nuclear Safety Criteria for the Design of Stationary Pressurized Water Reactor Plants."

A17

The Surveillance Requirements for inspection of the steam generator tubes ensure that the structural integrity of this portion of the RCS will be maintained. The program for inservice inspection of steam generator tubes is based on a modification of Regulatory Guide 1.83, Revision 1. Inservice inspection of steam generator tubing is essential in order to maintain surveillance of the conditions of the tubes for evidence of mechanical damage or progressive degradation. Inservice inspection of steam generator tubing also provides a means of characterizing the nature and cause of any tube degradation so that corrective measures can be taken.

Wastage-type defects will be minimized with proper chemistry treatment of the secondary coolant. If defects or significant degradations should develop in service, this condition is expected to be detected during inservice steam generator tube examinations. Plugging will be required for all tubes with imperfections exceeding the plugging limit. Steam generator tube inspections by means of eddy current testing have demonstrated the capability to reliably detect degradation that has penetrated 20% of the original tube wall thickness.

Whenever the results of any steam generator tubing inservice inspection fall into Category C-3, these results will be reported to the Commission prior to resumption of plant operation. Such cases will be considered by the Commission on a case-by-case basis and may result in a requirement for analysis, laboratory examinations, tests, additional eddy-current inspection, and revision of the Technical Specifications.

4.2.2 Materials Irradiation Surveillance Specimens

A18

The reactor vessel material surveillance specimens shall be removed and examined to determine changes in their material properties, as required by Appendix H to 10CFR50.

4.2.3 Primary Pump Flywheels

[5.5.7]

LA8

The flywheels shall be visually examined at the first refueling after each ten year inspection. At the fourth refueling after each ten year inspection and at each fourth refueling thereafter, the outside surfaces shall be examined by ultrasonic methods. The examinations scheduled for Refueling Outage 17, in 1996, may be deferred to Refueling Outage 18.

A32

This program provides for the inspection of each reactor coolant pump flywheel. The program shall include inspection frequencies and acceptance criteria.

ITS

A1

[SR 3.4.11.3] c. Operating the solenoid air control valves and check valves for their associated accumulators in PORV control systems through one complete cycle of full travel or function testing of individual components. A30

[SR 3.4.11.1] 4.2.4.2 Each block valve shall be demonstrated OPERABLE at least once per 92 days by operating the valve through one complete cycle of full travel unless the block valve is closed in order to meet the requirements of Specification 3.1.2.5.b or c. Required Action of Condition B or C. 13 met

[SR 3.4.11.4] 4.2.4.3 The accumulators for the PORVs shall be demonstrated OPERABLE at each refueling by isolating the normal air and nitrogen supplies and operating the valves through a complete cycle of full travel. LA4

4.2.5 Low-Temperature Overpressure Protection

4.2.5.1 Each PORV shall be demonstrated OPERABLE by:

a. Performance of an ANALOG CHANNEL OPERATIONAL TEST on the actuation channel, but excluding valve operation, within 31 days prior to entering a condition in which the PORV is required OPERABLE and at least once per 31 days thereafter when the PORV is required OPERABLE; and

b. Performance of a CHANNEL CALIBRATION at each refueling shutdown; and

c. Verifying the PORV block valve is open at least once per 72 hours when the PORV is being used for overpressure protection.

See 3.4.12

ITS

Specification 3.8.1

A1

4.6 EMERGENCY POWER SYSTEM PERIODIC TESTS

Applicability

Applies to periodic testing and surveillance requirements of the emergency power system.

Objective

To verify that the emergency power system will respond promptly and properly when required.

Specification

M25

The following tests and surveillance shall be performed as stated:

4.6.1 Diesel Generators

Verify

from standby conditions and achieves steady state voltage ≥ 4679V and ≤ 4998V and frequency ≥ 58.8 Hz and ≤ 61.2 Hz

[SR 3.8.1.2]
[SR 3.8.1.3]

4.6.1.1 On a monthly basis, each diesel generator shall be tested by manually initiated start, followed by manual synchronization with other power sources, and verification that each diesel generator is loaded and operates for ≥ 60 minutes at a load ≥ 2350 kW and ≤ 2500 kW.

an actual or

A7

18 Months

M5

[SR 3.8.1.14]

4.6.1.2 Automatic start of each diesel generator, load shedding and restoration to operation of particular vital equipment, initiated by a simulated loss of all normal A-C station service power supplies together with a simulated safety injection signal. This test will be conducted at each refueling interval, to assure that the diesel generator will start and assume required load within 50 seconds after the initial starting signal.

Insert 3.8.1-1

LA4

Verify

[SR 3.8.1.10]

automatic trips are

d

4.6.1.3 Each diesel generator shall be inspected at each refueling. The diesel protective bypasses listed in Specification 3.7.1.d shall be demonstrated to be operable by simulating a trip signal to each of the trip devices that is bypassed and observing that the diesel does not receive a trip signal.

except engine overspeed

LA1

LA3

M19

4.6.1.4 The following diesel generator load limits shall be observed:

LA5

a. The continuous load rating for the diesel generator is 2500 kW. Continuous operation above this limit shall not be permitted, except as defined within Technical Specification 4.6.1.4.b.

b. The short-term, overload rating of the diesel generator is 2750 kW. Operation at this load shall not exceed 2 hours in any 24 hour period. Operation above the short-term overload rating shall not be permitted.

Add SR 3.8.1.1
SR 3.8.1.4
SR 3.8.1.5
SR 3.8.1.6
SR 3.8.1.7
SR 3.8.1.8
SR 3.8.1.9
SR 3.8.1.12
SR 3.8.1.13

Add SR 3.8.1.2, Notes 1, 2
SR 3.8.1.3, Notes 1, 2, 3, 4
SR 3.8.1.4, Notes 1, 2

A8

Add SR 3.8.1.15
SR 3.8.1.16

M6

Supplement 1

ITS

18 Months

4.6.1.5 [SR 3.8.1.11] At each refueling interval, each diesel generator shall be tested by manually initiated start, followed by manual synchronization with other power sources, and verification that each diesel generator is loaded and operates for ≥ 24 hours. During the first 2 hours of this test, the load shall be maintained between 2650 kW and 2750 kW*. During the remaining 22 hours of this test, the load shall be maintained between 2400 kW and 2500 kW*. The power factor shall be maintained between 0.8 and 0.9 during the entire test.

LA5 ≥1.75 L8 A20

4.6.2 Diesel Fuel Tanks

A minimum fuel oil inventory sufficient to ensure 19,000 gallons available to the diesel generators shall be maintained at all times in the Unit 2 diesel generator fuel oil storage tank and an additional 15,000 gallons available to the diesel generators shall be maintained at all times in either the Unit 1 I-C turbine fuel oil storage tanks or a combination of the Unit 1 I-C turbine fuel oil storage tanks and the Unit 2 diesel generator fuel oil storage tank.

See 3.8.3

4.6.3. Station Batteries

4.6.3.1 The voltage and temperature of a pilot cell in each battery shall be measured and recorded daily, 5 days/week.

4.6.3.2 The specific gravity and voltage to the nearest 0.01 volt, the temperature reading of every fifth cell, the height of electrolyte and the amount of water added to each cell shall be measured and recorded monthly.

See 3.8.6

4.6.3.3 Each battery shall be subjected to an equalizing charge annually. The requirements in 4.6.3.2 above shall be performed after each equalizing charge.

See 3.8.6

4.6.3.4 At each time data is recorded, new data shall be compared with old to detect signs of abuse or deterioration.

See 3.8.6

M24

[SR 3.8.1.11 NOTE 1] * The minimum and maximum kW values are included as guidance to avoid overloading of the engine. Loads in excess of this range for special testing under direct monitoring of the manufacturer or momentary variations due to changing bus loads shall not invalidate this test.

transients

Outside the load and power factor limits — A20

Add SR 3.8.1.11, Note 2 — A8

PAGE 4.6-2a HAS BEEN DELETED

ITS

Specification 3.8.3

(A1)

4.6.1.5 At each refueling interval, each diesel generator shall be tested by manually initiated start, followed by manual synchronization with other power sources, and verification that each diesel generator is loaded and operates for ≥ 24 hours. During two hours of this test, the load shall be maintained between 2650 kW and 2750 kW*. During the remaining 22 hours of this test, the load shall be maintained between 2400 kW and 2500 kW*. The power factor shall be maintained between 0.8 and 0.9 during the entire test.

See 3.9.1

4.6.2 Diesel Fuel Tanks

A minimum fuel oil inventory sufficient to ensure 19,000 gallons available to the diesel generators shall be maintained at all times in the Unit 2 diesel generator fuel oil storage tank and an additional 15,000 gallons available to the diesel generators shall be maintained at all times in either the Unit 1 I-C turbine fuel oil storage tanks or a combination of the Unit 1 I-C turbine fuel oil storage tanks and the Unit 2 diesel generator fuel oil storage tank.

A12

4.6.3 Station Batteries

See 3.8.6

4.6.3.1 The voltage and temperature of a pilot cell in each battery shall be measured and recorded daily, 5 days/week.

4.6.3.2 The specific gravity and voltage to the nearest 0.01 volt, the temperature reading of every fifth cell, the height of electrolyte and the amount of water added to each cell shall be measured and recorded monthly.

4.6.3.3 Each battery shall be subjected to an equalizing charge annually. The requirements in 4.6.3.2 above shall be performed after each equalizing charge.

4.6.3.4 At each time data is recorded, new data shall be compared with old to detect signs of abuse or deterioration.

See 3.9.1

* The minimum and maximum kW values are included as guidance to avoid overloading of the engine. Loads in excess of this range for special testing under direct monitoring of the manufacturer or momentary variations due to changing bus loads shall not invalidate this test.

Add SR 3.8.3.3
SR 3.8.3.4

M9

PAGE 4.6-2a HAS BEEN DELETED

Supplement 1

ITS

4.6.1.5. At each refueling interval, each diesel generator shall be tested by manually initiated start, followed by manual synchronization with other power sources, and verification that each diesel generator is loaded and operates for ≥ 24 hours. During two hours of this test, the load shall be maintained between 2650 kW and 2750 kW*. During the remaining 22 hours of this test, the load shall be maintained between 2400 kW and 2500 kW*. The power factor shall be maintained between 0.8 and 0.9 during the entire test. See 3.8.1

4.6.2 Diesel Fuel Tanks

A minimum fuel oil inventory sufficient to ensure 19,000 gallons available to the diesel generators shall be maintained at all times in the Unit 2 diesel generator fuel oil storage tank and an additional 15,000 gallons available to the diesel generators shall be maintained at all times in either the Unit 1 I-C turbine fuel oil storage tanks or a combination of the Unit 1 I-C turbine fuel oil storage tanks and the Unit 2 diesel generator fuel oil storage tank. See 3.8.3

4.6.3 Station Batteries — Verify battery cell parameters meet Table 3.8.6-1 Category A Limits (M26)

[SR 3.8.6.1] 4.6.3.1 The voltage and temperature of a pilot cell in each battery shall be measured and recorded daily (5 days/week). — 7 days (L6)

[SR 3.8.6.1] 4.6.3.2 The specific gravity and voltage (to the nearest 0.01 volt), the temperature reading of every fifth cell, the height of electrolyte and the amount of water added to each cell shall be measured and recorded monthly. — 7 days (LA7) (M25)

4.6.3.3 Each battery shall be subjected to an equalizing charge annually. The requirements in 4.6.3.2 above shall be performed after each equalizing charge. (L7)

4.6.3.4 At each time data is recorded, new data shall be compared with old to detect signs of abuse or deterioration. (LA7)

* The minimum and maximum kW values are included as guidance to avoid overloading of the engine. Loads in excess of this range for special testing under direct monitoring of the manufacturer or momentary variations due to changing bus loads shall not invalidate this test. See 3.8.1

Add LCO
Applicability
SR 3.8.6.2
SR 3.8.6.3 (M15)

Add RA A.1, A.2, A.3 (L3)

PAGE 4.6-2a HAS BEEN DELETED (A2)

Add RA B.1

Specification 3.4.9

A1

ITS

4.6.3.5 The batteries shall be subjected to a performance test once every five years

4.6.3.6 The batteries shall be subjected to a service test at least once per 18 months, during a shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle. Surveillance 4.6.3.5 may be performed at five year intervals in lieu of this test.

See 3.8.4

4.6.4 Pressurizer Heaters' Emergency Power Supply

[SR 3.4.9.3]

The emergency power supply for the pressurizer heaters shall be demonstrated operable each refueling shutdown by transferring power from normal to the emergency power supply and energizing the heaters.

4.6.5 Battery Chargers

Demonstrate the in-service battery charger is operable by monitoring the output voltage daily, five days per week, and during normal equalizing charges.

See 3.8.4

Basis

The tests specified are designed to demonstrate that the diesel generators will provide power for operation of equipment. They also assure that the emergency generator system controls and the control systems for the safety features equipment will function automatically in the event of a loss of all normal 480 V AC station service power.[11]

The test to ensure proper operation of engineered safety features upon loss of AC power is initiated by tripping the breakers supplying normal power to the 480 volt buses and initiating a safety injection signal. This test demonstrates the proper tripping of motor feeder breakers, main supply and tie breakers on the affected bus, operation of the diesel generators, and sequential starting of essential equipment.

A2

Supplement 1

Amendment No 90, 132, 174

Specification 3.8.4

Verify battery capacity is ≥ 80% for the A battery and ≥ 90% for the B battery when [M11] [A5] [A21]

[SR 3.8.4.6] 4.6.3.5 The batteries shall be subjected to a performance test once every five years. [CTS insert 4.6.3.5A] discharge

4.6.3.6 The batteries shall be subjected to a service test at least once per 18 months during a shutdown to verify that the battery capacity is adequate to supply and maintain in OPERABLE status all the actual or simulated emergency loads for the design duty cycle. Surveillance 4.6.3.5 may be performed at five year intervals in-lieu of this test. [A15]

[SR 3.8.4.5 and Note 2] when, required

[SR 3.8.4.5 Note 1]

4.6.4 Pressurizer Heaters' Emergency Power Supply

The emergency power supply for the pressurizer heaters shall be demonstrated operable each refueling shutdown by transferring power from normal to the emergency power supply and energizing the heaters. See 3.4.9

4.6.5 Battery Chargers

[SR 3.8.4.1] Demonstrate the in-service battery charger is operable by monitoring the output voltage daily five days per week and during normal equalizing charges. Verify, terminal, is 130.2 V [M12] 7 days [L4]

Basis

The tests specified are designed to demonstrate that the diesel generators will provide power for operation of equipment. They also assure that the emergency generator system controls and the control systems for the safety features equipment will function automatically in the event of a loss of all normal 480 V AC station service power.[1] [A6]

The test to ensure proper operation of engineered safety features upon loss of AC power is initiated by tripping the breakers supplying normal power to the 480 volt buses and initiating a safety injection signal. This test demonstrates the proper tripping of motor feeder breakers, main supply and tie breakers on the affected bus, operation of the diesel generators, and sequential starting of essential equipment.

Add SR 3.8.4.2
SR 3.8.4.3
SR 3.8.4.4 [M13]

Add SR 3.8.4.6 Note [A16]

Specification 3.8.4

ITS

A1

Each unit as a backup to the normal standby AC power supply is capable of sequentially starting and supplying the power requirement of one complete set of safety features equipment. It can accept full load within 35 seconds after the initial starting signal.[1] and will sequentially start and supply the power requirements of one complete set of safety features equipment in 50 seconds.[2]

The 24 hour full-load test demonstrates the ability of the diesel generators to provide the necessary power to the emergency buses under accident loading conditions. The 2 hour portion of the testing at 110 percent of full-load encompasses the maximum expected analyzed load.

The testing shall be performed for a duration of not less than 24 hours which includes 2 hours at or up to 110 percent of the continuous duty rating of the generator in a 24 hour period. The remainder of the test shall be performed at a load equivalent to 100 percent of the continuous duty rating of the generator. The generator load shall be maintained at a power factor of 0.8 to 0.9 to ensure the diesel generator is tested under load conditions as close to design conditions as possible.

A supply of 19.000 gallons of fuel will ensure the operation of both diesels carrying rated design capacity for at least 48 hours or one diesel for at least 96 hours. An additional 15.000 gallons will be available to assure an adequate fuel supply for at least seven days of operation of a single diesel generator at its rated design capacity. Rated design capacity for this specification is defined as operation at 2500 kW for 22 hours and at 2750 kW for two hours in any 24-hour period.

Station batteries will deteriorate with time. but precipitous failure is extremely unlikely. The surveillance specified is that which has been demonstrated over the years to provide an indication of a cell becoming unserviceable long before it fails.

The equalizing charge. as recommended by the manufacturer. is vital to maintaining the ampere-hour capability of the battery. As a check upon the effectiveness of the equalizing charge. the battery should be loaded rather heavily and the voltage monitored as a function of time. Experience has shown that this test should be repeated at intervals to detect deterioration of cells.[3][4] If a cell has deteriorated or if a connection is loose. the voltage under load will drop excessively indicating replacement or maintenance.

A6

References

(1) FSAR Section 8.2
(2) FSAR Table 8.2-4
(3) AEC Information Letter ROE: 67-1. January 31. 1967
(4) FSAR Section 8.3.2

ITS

(A1)

4.8 AUXILIARY FEEDWATER SYSTEM

Applicability

Applies to periodic testing requirements of the turbine-driven and motor-driven auxiliary feedwater pumps.

Objective

To verify the operability of the auxiliary feedwater system and its ability to respond properly when required.

Specification

31 days on a STAGGERED TEST BASIS (L6)

[SR 3.7.4.2] 4.8.1 Each motor driven auxiliary feedwater pump will be started at monthly intervals, run for 15 minutes, and determined that it is operable. developed head ≥ req'd head (L20) (M11)

[SR 3.7.4.2] 4.8.2 The steam turbine driven auxiliary feedwater pump by using motor operated steam admission valves will be started at monthly intervals, run for 15 minutes, and determined that it is operable when the reactor coolant system is above the cold shutdown condition. When periods of reactor cold shutdown extend this interval beyond one month, the test shall be performed within 24 hours of achieving stable plant conditions at ≥1000 psig in the steam generator following plant heatup. (L20) (A11)

[SR 3.7.4.2 NOTE]

[SR 3.7.4.3] 4.8.3 The auxiliary feedwater pumps discharge valves will be tested by operator action at monthly intervals. automatic (M12) 18 (L7)

4.8.4 These tests shall be considered satisfactory if control board indication and subsequent visual observation of the equipment demonstrate that all components have operated properly. (A12)

Actual or simulated actuation signal (A13)

that are not locked, sealed, or otherwise secured in position (M12)

Add SR 3.7.4.1
SR 3.7.4.4
SR 3.7.4.5
SR 3.7.4.6
(M13)

Specification 3.7.10

(A.1)

ITS

2. Verifying, within 31 days of removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, by showing a methyl iodide penetration of less than 1% when tested at a temperature of 30 degree C and at a relative humidity of 70% in accordance with ASTM D3803.

(See 5.5.11)

e. After every 720 hours of carbon adsorber operation, by verifying with 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, by showing a methyl iodide penetration of less than 1% when tested at a temperature of 30 degrees C and at a relative humidity of 70% in accordance with ASTM D3803.

[SR 3.7.10.1] f. At least once per 18 months by:

1. Verifying the following for the air cleaning unit:

   a. The overall different pressure is less than or equal to 3.4 inches water gauge,

   b. Air flow through the unit is greater than or equal to 3300 ACFM and less than or equal to 4150 ACFM and

[SR 3.7.10.1] 2. Verifying the following for the air handling unit:

   a. ~~Air flow through the unit is greater than or equal to 5200 ACFM and less than or equal to 5800 ACFM.~~

3. Verifying that, on either a safety injection test signal or a high radiation test signal, the system automatically switches into the emergency pressurization operating mode with flow through the HEPA filters and carbon adsorber bank;

(See 3.7.9)

4. Verifying that the system maintains the Control Room at a positive pressure relative to the outside atmosphere at less than or equal to a pressurization rate of 400 ACFM during the emergency pressurization operating mode;

Each CREATC WCCU train has the capability to remove the assumed heat load (M32)

ITS

Specification 3.7.14

5.4 FUEL STORAGE

5.4.1 SPENT FUEL PIT

The new and spent fuel pit structures are designed to withstand the anticipated earthquake loadings as Class I structures. The spent fuel pit has a stainless steel liner to ensure against loss of water.[1]

5.4.2 CRITICALITY

See 4.3.1

5.4.2.1 NEW FUEL STORAGE RACKS

Due to the new fuel storage rack design, a nominal 21-inch center-to-center distance is maintained between fuel assemblies. To permit storage of fuel with a maximum assembly axial plane enrichment of 4.95 + 0.05 (nominal 4.95) weight percent U-235, additional separation is maintained by use of the storage rack secured location restrictions below[2] in order to establish a geometry which ensures that k_{eff} is less than 0.95 assuming that new fuel storage racks are flooded with unborated water and which assures that k_{eff} is less than 0.98 in an optimum moderation event.

[T 3.7.14-1] The secured location restrictions provide fuel storage locations which are secured to prevent fuel storage in those locations.

Secured Location Restrictions:

C4,5,6,7,8,9 / D4,5,8,9 / E4,5,8,9 / F1,4,5,8,9 / G1,4,5,8,9
H1,4,5,6,7,8,9 / J1 / K1

LA6

Add LCO 3.7.14
Applicability
Action A
SR 3.7.14.1

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Supplement 1