United States Nuclear Regulatory Commission
Attachment IV to Serial: RNP-RA/97-0176
(454 Pages)

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

SUPPLEMENT 7

SUPPLEMENT 7
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)"	
	NA	
b.	Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
	2	2
	-	2a
c.	Part 3, "No Significant Hazards Consideration (NSHC), And Basis for Categorical Exclusion form 10 CFR 51.22	
	NA	
d.	Part 4, "Markup of NUREG-4131, Revision 1, Standard Technical Specifications-Westinghouse Plant, (ISTS)"	
	NA	
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	NA	
f.	Part 6, "Markup of ISTS Bases"	
	NA	
g.	Part 7, "Justification of Differences (JFDs) to ISTS Bases"	
	NA	
h.	Part 8, "Proposed HBRSEP, Unit No. 2 ITS"	
	NA	
i.	Part 9, "Proposed Bases to FHBRSEP, Unit No. 2 ITS Bases"	
	NA	
j.	Part 10, "ISTS Generic Changes"	
	NA	

K_{eff} = 1.0" without any specification regarding power level. The ITS translates these two operational conditions to MODEs 1 and 2 respectively. MODE 1 is specified in ITS as $K_{eff} \geq 0.99$ and % RATED THERMAL POWER > 5% while MODE 2 is specified in ITS as $K_{eff} \geq 0.99$ and % RATED THERMAL POWER ≤ 5%. The ITS adds a footnote to state that the RATED THERMAL POWER limits in Table 1.1-1 exclude decay heat. The specific impact of this change is discussed in the applicable LCOs when the utilization results in a more or less restrictive change.

The ITS is silent regarding the specific method to measure reactor power. Since neutron instrumentation is normalized to thermal power calculations, the lack of specificity regarding the measurement of reactor power is inconsequential and thus has no adverse impact on safety. The change from 2% to 5% RTP less decay heat will permit operation at a greater power level prior to entry into ITS MODE 1 than permitted by CTS prior to entry into the Power Operating Condition. The specific impact of the change regarding the ITS MODE 1 and 2 definitions is evaluated for each relevant LCO. Therefore, this change has no adverse impact on safety.

A6 During the ITS development certain definitions which are not part of the CTS are adopted from the ISTS. The definitions are:

ACTUATION LOGIC TEST
LEAKAGE
MODE
SHUTDOWN MARGIN (SDM)
THERMAL POWER
AXIAL FLUX DIFFERENCE (AFD)
MASTER RELAY TEST
PHYSICS TESTS
SLAVE RELAY TEST
TRIP ACTUATING DEVICE OPERATIONAL TEST (TADOT)

The adoption of these definitions results in no technical changes (either actual or interpretational) to the CTS. Therefore, this is an administrative change and has no adverse impact on safety.

A7 The CTS defines Refueling Operation as, "Any operation involving movement of core components when there is fuel in the containment vessel and the pressure vessel head is unbolted or removed." The ITS definition for CORE ALTERATION is the movement of any fuel, sources, or reactivity control components within the reactor vessel with the vessel head removed and fuel in the vessel. The ITS definition for CORE ALTERATION adds additional details regarding what constitutes "movement of core components". Additionally, the ITS definition for CORE ALTERATION excludes restriction on movement of non-fuel core components with the reactor vessel head not fully tensioned when there is no fuel in the reactor vessel but there is fuel in the containment. The specific impact of these changes is discussed with applicable LCOs when the utilization results in a more or less restrictive change.

A8 Selected CTS definitions are deleted because the CTS that use these definitions are not retained in the ITS or the equivalent ITS Specification will not use the defined term. Discussions of the

SUPPLEMENT 7
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)"	
	3.10-1 (3.1.6)	3.10-1 (3.1.6)
b.	Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
	7, 13 and 14	7, 13 and 14
c.	Part 3, " No Significant Hazards Consideration (NSHC), And Basis for Categorical Exclusion from 10 CFR 51.22	
	8 through 10	8 through 10
d.	Part 4, "Markup of NUREG-4131, Revision 1, Standard Technical Specifications-Westinghouse Plants, (ISTS)"	
	3.1-14 (3.1.6)	3.1-14 (3.1.6)
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	2 and 3	2 and 3
f.	Part 6, "Markup of ISTS Bases"	
	B 3.1-43 (B 3.1.6)	B 3.1-43 (B 3.1.6)
g.	Part 7, "Justification for Differences (JFDs) to ISTS Bases"	
	4	4
h.	Part 8, "Proposed HBRSEP, Unit No. 2 ITS"	
	3.1-12 (3.1.6)	3.1-12 (3.1.6)
i.	Part 9. "Proposed Bases to HBRSEP, Unit No. 2 ITS Bases"	
	B 3.1-39, B 3.1-40 (B 3.1.6)	B 3.1-39, B 3.1-40 (B 3.1.6)
j.	Part 10. "ISTS Generic Changes"	
	NA	

ITS

Specification 3.1.6

3.10 REQUIRED SHUTDOWN MARGINS. CONTROL ROD. AND POWER DISTRIBUTION LIMITS (A1)

Applicability

Applies to the required shutdown margins. operation of the control rods. and power distribution limits.

Objective

To ensure (1) core subcriticality after a reactor trip and during normal shutdown conditions. (2) limited potential reactivity insertions from a hypothetical control rod ejection. and (3) an acceptable core power distribution during power operation.

Specification

3.10.1 Full Length Control Rod Insertion Limits

3.10.1.1 (Deleted by Change No. 21 issued 7/6/73)

3.10.1.2 When the reactor is critical. except for physics tests and full length control rod exercises. the shutdown control rods shall be limited in physical insertion as specified in the CORE OPERATING LIMITS REPORT (COLR). (see 3.1.5 + 3.1.8)

[Applicability] (MODE 1, MODE 2 with $K_{eff} \geq 1.0$) (BANKS)

3.10.1.3 When the reactor is critical except for physics tests (see 3.1.8) and full length control rod exercises. the control rods shall be limited in (within) physical insertion as specified in the COLR. Control rod bank insertion beyond the limits specified in the COLR shall be corrected within the time criteria established by the axial power distribution methodology or within one (1) hour. whichever occurs sooner. If bank insertion is not restored to the specified limits (i.e., within one (1) hour or within the time criteria established by the axial power distribution methodology, whichever is sooner) the reactor shall be placed in the hot shutdown condition utilizing normal operating procedures within six (6) hours. (LA2)

[LCO 3.1.6]

[RA A.2]

[RA C.1]

3.10.1.4 At 50 percent of the cycle as defined by burnup. the limits shall be adjusted to the end-of-core values as specified in the COLR. (LA1)

the insertion, sequence and overlap (M16)

Add RAs A.1.1, A1.2, B.1.1, B.1.2 + B.2 (M17)

Add SRs 3.1.6.1, 3.1.6.2, 3.1.6.3 (M18)

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 1 hour. 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 1 hour 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 Not used.

Time is based on the low probability of an accident occurring during this period and takes into consideration the fact that as cycle burnup is increased, RCS boron concentration is reduced which causes MTC to become more negative. This change also provides the benefit of not hastily inducing a plant shutdown transient while in a condition where unit response during postulated events may not be as predicted (due to MTC not being within the upper limit).

With MTC outside the limits provided in the COLR, CTS 3.1.3.3 mandates being subcritical by an amount equal to the potential reactivity insertion due to depressurization. With MTC outside the upper limit, ITS 3.1.3 RA B.1 mandates, assuming ITS 3.1.3 RA A.1 and associated completion time not met, being in MODE 2 with $K_{eff} < 1.0$. In this condition, the SDM requirements of ITS LCO 3.1.1 are applicable requiring the SDM be within the limits provided in the COLR. The COLR includes appropriate SDM limits for this condition. Therefore this aspect of the change is administrative in nature.

L3 CTS Table 4.1-3, Item 2 requires verification of each control rods freedom of movement every 14 days during reactor critical operations. ITS SR 3.1.4.2 requires this surveillance to be performed at a 92 day Frequency and excludes control rods that are fully inserted. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because the 92 day Frequency takes into consideration other information available to the operator in the control room, and performance of SR 3.1.4.1, which verifies that individual rod positions are within alignment limits every 12 hours and adds to the determination of OPERABILITY of the rods. In addition, not requiring fully inserted rods to be exercised is less restrictive than the CTS which does not have this exception. The intent of the exercise test is to provide assurance that the rod remains trippable (i.e., the rod is not stuck in the withdrawn position); thereby helping to assure that adequate Shutdown Margin is maintained. Not requiring fully inserted rods to be exercised is considered acceptable since with the rod in the fully inserted, it is not possible for the rod to be stuck in the withdrawn position. Therefore, elimination of the requirement to exercise fully inserted rods has no impact on the ability to maintain adequate Shutdown Margin. This change is consistent with NUREG-1431.

L4 Not Used.

L5 With the MTC outside the limits provided in the COLR, CTS 3.1.3.3 requires the reactor be made subcritical by an amount greater than or equal to the potential reactivity insertion due to depressurization. Since no completion time is explicitly stated, this specification implies completion as soon as practical. (Although not directly applicable, CTS 3.0 requires hot shutdown within 8 hours. Without an explicit statement of completion time, the comparable completion time of 8 hours in CTS 3.0 is considered implicitly binding.) With MTC not within the lower limit, ITS 3.1.3 RA C.1 mandates being in MODE 4 with a completion time of 12 hours. This completion time is more than the implicit completion time for CTS 3.1.3.3. This change allows for a more controlled shutdown which reduces thermal stress on components and also reduces the chances for a plant transient which could challenge safety systems. The additional 4 hours to reach MODE 4 is considered reasonable, based on operating experience, to reach MODE 4 from full power conditions in an orderly manner and without challenging plant systems. The requirement to be in MODE 4 is more restrictive than the CTS 3.1.3.3 requirement to be subcritical by an amount greater than or equal to the potential reactivity insertion due to depressurization. This change is consistent with NUREG-1431.

L6 In the event the rod position indication requirements of CTS Table 4.1-1 items 9 and 10 are not satisfied, the CTS 3.10.1.5 actions associated with a misaligned rod are required to be taken within 2 hours. Rod position indication instruments do not necessarily relate directly to rod OPERABILITY (e.g. rods aligned within limits) or the ability to maintain rods within alignment limits. As such, it is overly restrictive to assume that rods are misaligned when rod position indication is inoperable. Therefore, ITS 3.1.4 is added to require the Analog Rod Position Indication (ARPI) System and the Demand Position Indication System to be OPERABLE in MODES 1 and 2 and provide alternate ACTIONS to determine rod position or reduce power to ≤ 50% RTP in the

preferable to mandating a unit shutdown with the increased risk for shutdown transients. Therefore, this change does not involve a significant reduction in a margin of safety.

L3 Change

Carolina Power & Light Company has evaluated the 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 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 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 Frequency of performance of the surveillance does not increase the probability of occurrence of any analyzed event, since the function of the equipment, or limit for the parameter does not change. Further, the Frequency of performance of a surveillance does not increase the consequences of an accident because a change in surveillance frequency does not change the assumed response of the equipment to perform its specific mitigation functions. 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 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 change will still ensure compliance with the limiting condition for operation is maintained. 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 any safety analysis, that are dependent upon the change. The change increases a surveillance interval. Exercising each rod every 92 days provides confidence that rods continue to be trippable. The 92 day Frequency takes into consideration other information available to the operator in the control room and SR 3.1.4.1, which is performed more frequently and adds to the determination of OPERABILITY of the rods. Therefore, this change does not involve a significant reduction in a margin of safety.

L4 Change

Not Used.

L5 Change

Carolina Power & Light Company has evaluated the 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 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 change does not involve any physical alteration of plant systems, structures or components, changes in parameters governing normal plant operation, or methods of operation. Changing the completion time for entering MODE 4, for the MTC out of limits, from an implicit 8 hours in the CTS to 12 hours in the ITS does not increase the probability of occurrence of any analyzed event, since the function of the equipment, or limit for the parameter does not change. Further, the increase in time to place the plant in MODE 4 does not increase the consequences of an accident because a change in time to reduce power does not change the assumed response of equipment to perform its specific mitigation functions. 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 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 change will still ensure compliance with the limiting condition for operation is maintained. 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 any safety analysis that is dependent upon the change. The change increases the time allowed to place the plant in MODE 4 from an implicit 6 hours to 12 hours. Increasing the time to place the plant in MODE 4 when the MTC is out of limit provides additional time to place the plant in a condition outside the MODE of applicability in a controlled manner. Therefore, this change does not involve a significant reduction in a margin of safety.

CTS

3.1 REACTIVITY CONTROL SYSTEMS

[3.10.1] 3.1.7 (6) Control Bank Insertion Limits

[3.10.1.3] LCO 3.1.8 (6) Control banks shall be within the insertion, sequence, and overlap limits specified in the COLR.

APPLICABILITY: MODE 1.
MODE 2 with $k_{eff} \geq 1.0$.

-----NOTE-----
[3.10.1.6] This LCO is not applicable while performing SR 3.1.8.2. (4)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
[M17] A. Control bank insertion limits not met.	A.1.1 Verify SDM is ≥ [1.6]% Δk/k within the limits provided in the COLR OR	1 hour (2)
	A.1.2 Initiate boration to restore SDM to within limit.	1 hour
	AND	
[3.10.1.3]	A.2 Restore control bank(s) to within limits.	2 hours 1 hour (11)

(continued)

Supplement 7

≤70% RTP, consistent with current licensing basis.

7 ITS SR 3.1.4.3 is modified to reflect a minimum T_{avg} of 540°F for verification of rod drop times, consistent with current licensing basis.

8 The word, "more," is changed to the word, "both," because plant design includes two shutdown banks.

9 ITS Specification 3.1.7, Required Action B.1, requires verification of rod position using the movable incore detectors for rods with inoperable position indications that have moved in excess of 24 steps since the last determination of rod position. The bracketed Completion Time of 4 hours is modified to 6 hours. Since the CTS does not include a comparable requirement, there is no current licensing basis for this value. A Completion Time of 6 hours is considered to be a reasonable time in which to perform the required flux mapping and data analysis. A Completion Time of 6 hours still provides sufficient time to complete alternate Required Action B.2, reduction of THERMAL POWER to ≤ 50% RTP within 8 hours.

10 ISTS Specification 3.1.8, Required Action C.1.2, is modified to provide two actions (ITS 3.1.7 Required Action C.1.2 and C.1.3) to address bank positions < 200 steps and bank positions ≥ 200 steps. This change is necessary to address the two different acceptance criteria associated with bank positions provided in ITS Specification 3.1.4 (for bank demand positions ≥ 200 steps, each rod shall be within 15 inches of its bank demand position; and for bank demand position < 200 steps, each rod shall be within 7.5 inches of the average of the individual rod positions in the bank) and the current licensing basis approved in HBRSEP Unit 2 Amendment No. 48.

11 ISTS Specification 3.1.6, "Control Bank Insertion Limits" are modified to be consistent with the current licensing basis.

12 ISTS Specification 3.1.9, "PHYSICS TEST Exceptions - MODE 1," is not adopted in the ITS. These physics tests are not performed during post-refueling startup testing. ISTS Specification 3.1.11, "SDM Test Exceptions," is not adopted in the ITS. The use of other rod worth measurement techniques will maintain the shutdown margin during the entire measurement process and still provide the necessary physics data verification. Since the N-1 measurement technique is no longer used, the SDM test exception is not necessary. Subsequent Specifications are renumbered accordingly.

13 ISTS SR 3.1.10.1 (ITS SR 3.1.8.1) is revised to require performance of the required CHANNEL OPERATIONAL TESTS within "7 days" prior to initiation of PHYSICS TESTS instead of within "12 hours" prior to initiation of PHYSICS TESTS. The current licensing basis reflected in

the CTS does not currently require performance of a CHANNEL FUNCTIONAL TEST (an ITS CHANNEL OPERATIONAL TEST) on power range and intermediate range channels within a specified time period prior to initiating PHYSICS TESTS. CTS Table 4.1-1 requires performance of the CHANNEL FUNCTIONAL TEST of the intermediate range channels prior to startup and performance of the CHANNEL FUNCTIONAL TEST of the power range channels bi-weekly. However, current plant practice is perform CHANNEL FUNCTIONAL TESTs of these channels within 7 days prior to initiation of PHYSICS TESTS. This 7 day Frequency has been determined to be sufficient for verification that the power range and intermediate range monitors are properly functioning.

14 ISTS SR 3.1.8.1 requires verification that each [D]RPI agrees within [12] steps of the group demand position for the [full indicated range] of rod travel once per [18 months]. This Surveillance Requirement is not included in the HBRSEP Unit No. 2 ITS. Instead, ITS 3.1.7 (Rod Position Indication) includes SRs 3.1.7.1, 3.1.7.2, 3.1.7.3, and 3.1.7.4. SR 3.1.7.1 requires the performance of a CHANNEL CHECK by comparing analog rod position indication to bank demand position indication. SRs 3.1.7.2 and 3.1.7.3 require a test to be performed to verify the rod position indications read within the required acceptance criteria after moving each full length RCCA bank ≥ 19 steps and returning the banks to their original positions. SR 3.1.7.4 requires the performance of a CHANNEL CALIBRATION of the Analog Rod Position Indication System. These SRs are provided consistent with current plant practice and licensing basis reflected in CTS Table 4.1-1 (items 9 and 10) and approved in HBRSEP Unit 2 Amendment No. 48. Amendment No. 48 approved revised control rod position indication systems misalignment limits and requires the following:

> For bank demand positions ≥ 200 steps, each rod shall be within 15 inches of its bank demand position; and
>
> For bank demand positions < 200 steps, each rod shall be within 7.5 inches of the average of the individual rod positions in the bank.

As such, comparisons between the analog rod position indication and the bank demand position indication are only required for bank positions ≥ 200 steps (ITS SR 3.1.7.1 and ITS SR 3.1.7.3) and the acceptance criteria for the monthly tsts vary depending on whether the bank positions are ≥ 200 steps (ITS SR 3.1.7.3) or < 200 steps (ITS SR 3.1.7.2).

BASES

ACTIONS

A.1.1, A.1.2, A.2, B.1.1, B.1.2, and B.2 (continued)

Similarly, if the control banks are found to be out of sequence or in the wrong overlap configuration, they must be restored to meet the limits.

Operation beyond the LCO limits is allowed for a short time period in order to take conservative action because the simultaneous occurrence of either a LOCA, loss of flow accident, ejected rod accident, or other accident during this short time period, together with an inadequate power distribution or reactivity capability, has an acceptably low probability.

The allowed Completion Time of ② hours for restoring the banks to within the insertion, sequence, and overlaps limits provides an acceptable time for evaluating and repairing minor problems without allowing the plant to remain in an unacceptable condition for an extended period of time.

1 43 43 limits, and 2 hours for restoring the banks to within the

C.1

If (the) Required Actions ~~A.1 and A.2, or B.1 and B.2~~ cannot be completed within the associated Completion Times, the plant must be brought to MODE 3 (utilizing normal operating procedures), where the LCO is not applicable. The allowed Completion Time of 6 hours is reasonable, based on operating experience, for reaching the required MODE from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.1.⑦.1 (③→⑥)

This Surveillance is required to ensure that the reactor does not achieve criticality with the control banks below their insertion limits.

The estimated critical position (ECP) depends upon a number of factors, one of which is xenon concentration. If the ECP was calculated long before criticality, xenon concentration could change to make the ECP substantially in error. Conversely, determining the ECP immediately before criticality could be an unnecessary burden. There are a number of unit parameters requiring operator attention at

(continued)

repeated in the Bases.

35 Demand position indication is not calibrated. The counters are reset to zero when rods are fully inserted prior to startup.

36 The referenced analysis does not include explicit consideration of the effects on core peaking factors of rod position versus power level, and is not retained in the ITS.

37 The Bases for ITS 3.1.7 are revised to reflect changes made to the associated Specification and the current licensing basis approved in HBRSEP Unit No. 2 Amendment No. 48..

38 Not used.

39 HBRSEP is not committed to either Regulatory Guide 1.68 or ANSI/ANS-19.6.1.

40 The word, "more," is changed to the word, "both," because plant design includes two shutdown banks.

41 The boron exchange methodology is the method used at HBRSEP to perform integral and differential rod worth measurements. This method is used to determine the reactivity of individual rod banks, as well as the reactivity of the predicted "worst case" stuck rod.

42 The "average slope method" is used at HBRSEP for measuring isothermal temperature coefficient (ITC).

43 The bases are modified to be consistent with the specification.

44 The referenced reports are not applicable to HBRSEP.

45 Not used.

46 Not used.

47 Bases are modified for consistency with the scope and content of the associated Specification. This change is based on the need to perform the surveillance following plant evolutions that could cause disturbance of the instruments.

3.1 REACTIVITY CONTROL SYSTEMS

3.1.6 Control Bank Insertion Limits

LCO 3.1.6 Control banks shall be within the insertion, sequence, and overlap limits specified in the COLR.

APPLICABILITY: MODE 1,
MODE 2 with $k_{eff} \geq 1.0$.

-----NOTE-----
This LCO is not applicable while performing SR 3.1.4.2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Control bank insertion limits not met.	A.1.1 Verify SDM is within the limits provided in the COLR.	1 hour
	<u>OR</u>	
	A.1.2 Initiate boration to restore SDM to within limit.	1 hour
	<u>AND</u>	
	A.2 Restore control bank(s) to within limits.	1 hour

(continued)

BASES

ACTIONS

A.1.1, A.1.2, A.2, B.1.1, B.1.2, and B.2 (continued)

Similarly, if the control banks are found to be out of sequence or in the wrong overlap configuration, they must be restored to meet the limits.

Operation beyond the LCO limits is allowed for a short time period in order to take conservative action because the simultaneous occurrence of either a LOCA, loss of flow accident, ejected rod accident, or other accident during this short time period, together with an inadequate power distribution or reactivity capability, has an acceptably low probability.

The allowed Completion Time of 1 hour for restoring the banks to within the insertion limits and 2 hours for restoring the banks to within the sequence and overlaps limits provides an acceptable time for evaluating and repairing minor problems without allowing the plant to remain in an unacceptable condition for an extended period of time.

C.1

If the Required Actions cannot be completed within the associated Completion Times, the plant must be brought to MODE 3 (utilizing normal operating procedures), where the LCO is not applicable. The allowed Completion Time of 6 hours is reasonable, based on operating experience, for reaching the required MODE from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.1.6.1

This Surveillance is required to ensure that the reactor does not achieve criticality with the control banks below their insertion limits.

The estimated critical position (ECP) depends upon a number of factors, one of which is xenon concentration. If the ECP was calculated long before criticality, xenon concentration could change to make the ECP substantially in error. Conversely, determining the ECP immediately before

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.1.6.1 (continued)

criticality could be an unnecessary burden. There are a number of unit parameters requiring operator attention at that point. Performing the ECP calculation within 4 hours prior to criticality avoids a large error from changes in xenon concentration, but allows the operator some flexibility to schedule the ECP calculation with other startup activities.

SR 3.1.6.2

With an OPERABLE bank insertion limit monitor, verification of the control bank insertion limits at a Frequency of 12 hours is sufficient to ensure OPERABILITY of the bank insertion limit monitor and to detect control banks that may be approaching the insertion limits since, normally, very little rod motion occurs in 12 hours. If the insertion limit monitor becomes inoperable, verification of the control bank position at a Frequency of 4 hours is sufficient to detect control banks that may be approaching the insertion limits.

SR 3.1.6.3

When control banks are maintained within their insertion limits as checked by SR 3.1.6.2 above, it is unlikely that their sequence and overlap will not be in accordance with requirements provided in the COLR. A Frequency of 12 hours is consistent with the insertion limit check above in SR 3.1.6.2.

REFERENCES

1. UFSAR, Sections 3.1.2.14, 3.1.2.27, 3.1.2.28, 3.1.2.29, 3.1.2.30, 3.1.2.31, and 3.1.2.32.
2. 10 CFR 50.46.
3. UFSAR, Chapter 15.

SUPPLEMENT 7
CONVERSION PACKAGE SECTION 3.2
PAGE INSERTION INSTRUCTIONS

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

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a.	Part 1, "Markup of Current Technical Specifications (CTS)"	
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b.	Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
	NA	
c.	Part 3, " No Significant Hazards Consideration (NSHC), And Basis for Categorical Exclusion from 10 CFR 51.22	
	NA	
d.	Part 4, "Markup of NUREG-4131, Revision 1, Standard Technical Specifications-Westinghouse Plants, (ISTS)"	
	NA	
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	3	3
f.	Part 6, "Markup of ISTS Bases"	
	NA	
g.	Part 7, "Justification for Differences (JFDs) to ISTS Bases"	
	NA	
h.	Part 8, "Proposed HBRSEP, Unit No. 2 ITS"	
	3.2-7 (3.2.3)	3.2-7 (3.2.3)
i.	Part 9. "Proposed Bases to HBRSEP, Unit No. 2 ITS Bases"	
	NA	
j.	Part 10. "ISTS Generic Changes"	
	NA	

CTS

3.2 POWER DISTRIBUTION LIMITS

(PDC-3 Axial Offset Control Methodology) (8)

3.2.3A AXIAL FLUX DIFFERENCE (AFD) (Constant Axial Offset Control (CAOC) Methodology)

LCO 3.2.3 The AFD:

[3.10.2.5] [3.10.2.11]

a. Shall be maintained within the target band about the target flux difference. The target band is specified in the COLR. (allowable values of the ... are) (15)

[3.10.2.4]

---NOTE---

The AFD shall be considered outside the target band when two or more OPERABLE excore channels indicate AFD to be outside the target band.

[3.10.2.7 and 3.10.2.7.a]

b. May deviate outside the target band with THERMAL POWER < 90% RTP (or Ø.9 APL, whichever is less) (9) but ≥ 50% RTP, provided AFD is within the acceptable operation limits and cumulative penalty deviation time is ≤ 1 hour during the previous 24 hours. The acceptable operation limits are specified in the COLR.

[A 13] [3.10.2.2.2]

---NOTE(S)--- (10) INSERT 3.2.3-1

1. Penalty deviation time shall be accumulated on the basis of a 1 minute penalty deviation for each 1 minute of power operation with AFD outside the target band.

[3.10.2.8.a]

c. May deviate outside the target band with THERMAL POWER < 50% RTP.

[3.10.2.8.b]

---NOTE---

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 the target band.

[3.10.2.5] [3.10.2.6] [3.10.2.7]

APPLICABILITY: MODE 1 with THERMAL POWER > 15% RTP.

[3.10.2.9]

---NOTE---

A total of 16 hours of operation may be accumulated with AFD outside the target band without penalty deviation time during surveillance of power range channels in accordance with SR 3.3.1.6, provided AFD is maintained within acceptable operation limits.

---

(2)

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.

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 ISTS Specification 3.2.3.a is modified to state that the allowable values of the target band are specified in the COLR. Actual target band values are determined at each interval during performance of SR 3.2.3.3. This change is in accordance with the PDC-3 methodology and the current licensing basis.

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.

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).

3.2 POWER DISTRIBUTION LIMITS

3.2.3 AXIAL FLUX DIFFERENCE (AFD) (PDC-3 Axial Offset Control Methodology)

LCO 3.2.3 The AFD:

a. Shall be maintained within the target band about the target flux difference. The allowable values of the target band are specified in the COLR.

---------------------------NOTE---------------------------
The AFD shall be considered outside the target band when two or more OPERABLE excore channels indicate AFD to be outside the target band.
----

b. May deviate outside the target band with THERMAL POWER < 90% RTP or 0.9 APL, whichever is less, but ≥ 50% RTP, provided AFD is within the acceptable operation limits and cumulative penalty deviation time is ≤ 1 hour during the previous 24 hours. The acceptable operation limits are specified in the COLR.

---------------------------NOTES---------------------------
1. Penalty deviation time shall be accumulated on the basis of a 1 minute penalty deviation for each 1 minute of power operation with AFD outside the target band.

2. The Allowable Power Level (APL) is the limitation placed on THERMAL POWER for the purposes of applying the AFD target flux and operational limit curves. The APL is as follows:

   APL = minimum over Z of $(100\%)(F_Q^{RTP}(Z))(K(Z))/F_Q^V(Z)$
----

c. May deviate outside the target band with THERMAL POWER < 50% RTP.

---------------------------NOTE---------------------------
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 the target band.

SUPPLEMENT 7
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)"	
	2.3-3, 3.5-12, 3.5-13a, 3.5-13b, 3.5-13c, 4.1-6, 4.1-7 (3.3.1), 3.5-15a (3.3.2), 3.5-16 (3.3.6), and 3.4-5 (3.3.8)	2.3-3, 3.5-12, 3.5-13a, 3.5-13b, 3.5-13c , 4.1-6, 4.1-7 (3.3.1), 3.5-15a, 4.1-6, 4.1-7 (3.3.2) 3.5-14, 3.5-16 (3.3.6), and 3.4-5 (3.3.8)
b.	Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
	1 through 55	1 through 57
c.	Part 3, "No Significant Hazards Consideration (NSHC), And Basis for Categorical Exclusion from 10 CFR 51.22"	
	8, 9, 16, 35, 36, 52, 53, 54, 55	8, 9, 16, 35, 36, 52, 53, 54, 55, and 56
d.	Part 4, "Markup of NUREG-1431, Revision 1, Standard Technical Specifications Westinghouse Plants, (ISTS)"	
	3.3-17, 3.3-19a (3.3.1), 3.3-23, 3.3-23a, 3.3-24, 3.3-26 (3.3.2) 3.3-49 (3.3.5) 3.3-54 (3.3.6) 3.3-55, 3.3-55a, 3.3-56 (3.3.7) Insert 3.3.8-1(pages 1, 2, and 4)(3.3.8)	3.3-17, 3.3-19a (3.3.1), 3.3-23, 3.3-23a, 3.3-24, 3.3-26 (3.3.2) 3.3-49 (3.3.5) 3.3-54 (3.3.6) 3.3-55, 3.3-55a, 3.3-56 (3.3.7) Insert 3.3.8-1(pages 1, 2, and 4)(3.3.8)
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	3, 4, 5, 11, 12, and 15	3, 4, 5, 11, 12, and 15
f.	Part 6, "Markup of ISTS Bases"	
	B 3.3-1, B 3.3-5, B 3.3-22, B 3.3-23, B 3.3-54(B 3.3.1), B 3.3-104, B 3.3-104a, B 3.3-106, B 3.3-110 (B 3.3.2), B 3.3-144, B 3.3-145 (B 3.3.5), B 3.3-152, B 3.3-153 (B 3.3.6), B 3.3-161, B 3.3-163 (B 3.3.7) Insert B 3.3.8(pages 6-8)(B 3.3.8)	B 3.3-1, B 3.3-5, B 3.3-22, B 3.3-23, B 3.3-54 (B 3.3.1), B 3.3-104, B 3.3-104a, B 3.3-106, B 3.3-110 (B 3.3.2), B 3.3-144, B 3.3-145 (B 3.3.5), B 3.3-152, B 3.3-153 (B 3.3.6), B 3.3-161, B 3.3-163 (B 3.3.7) Insert B 3.3.8(pages 6-8)(B 3.3.8)

SUPPLEMENT 7
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
g.	Part 7, "Justification for Differences (JFDs) to ISTS Bases"	
	14 and 15	14 and 15
h.	Part 8, "Proposed HBRSEP, Unit No.2 ITS"	
	3.3-13, 3.3-15, 3.3-17(3.3.1),	3.3-13, 3.3-15, 3.3-17(3.3.1),
	3.3-20, 3.3-21, 3.3-22(3.3.2),	3.3-20, 3.3-21, 3.3-22(3.3.2),
	3.3-38(3.3.5)	3.3-38(3.3.5),
	3.3-41(3.3.6)	3.3-41(3.3.6),
	3.3-42, and 3.3-43(3.3.7	3.3-42, 3.3-43(3.3.7),
	3.3-47, 3.3-48, 3.3-49, 3.3-50(3.3.8)	3.3-47, 3.3-48, 3.3-49, 3.3-50(3.3.8)
i.	Part 9, "Proposed Bases to HBRSEP, Unit No. 2 ITS"	
	B 3.3-1, B 3.3-5, B 3.3-20, B 3.3-21,	B 3.3-1, B 3.3-5, B 3.3-20, B 3.3-21,
	B 3.3-50 (B 3.3.1)	B 3.3-50, B 3.3-50a (B 3.3.1)
	B 3.3-77, B 3.3-78, B 3.3-79, B 33-82	B 3.3-77, B 3.3-78, B 3.3-79, B 3.3-82
	(B 3.3.2)	(B 3.3.2)
	B 3.3-112, B 3.3-113 (B 3.3.5)	B 3.3-112, B 3.3-113 (B 3.3.5)
	B 3.3-120 (B 3.3.6)	B 3.3-120 (B 3.3.6)
	B 3.3-127, B 3.3-127a, B 3.3-128	B 3.3-127, B 3.3-127a, B 3.3-128
	(B 3.3.7)	(B 3.3.7)
	B 3.3-135, B 3.3-136, B 3.3-137,	B 3.3-135, B 3.3-136, B 3.3-137,
	B 3.3-138, B 3.3-139 (B 3.3.8)	B 3.3-138, B 3.3-139 (B 3.3.8)
j.	Part 10, "ISTS Generic Changes"	
	NA	

ITS

[T3.3.1-1 (5)] [NOTE 1]

(3) For each percent that the magnitude of $(q_t - q_b)$ exceeds -17% in the negative direction, the ΔT trip setpoint shall be automatically reduced by 2.4% of the value of ΔT at rated power (2300 Mwt). A1

2.4 $(q_b - q_T)$ - 17 percent A2

[T3.3.1-1 (6)] [NOTE 2]

e. Overpower Δ T

$$\leq \Delta T_o \left\{ K_4 - K_5 \left[\frac{\tau_3 S}{1 + \tau_3 S} \right] T - K_6 (T - T') - f(\Delta I) \right\}$$

The OPΔT Function Allowable Value shall not exceed the following Trip Setpoint by more than 3.17% of ΔT span. L1

where:

ΔT_o = Indicated ΔT at rated thermal power, °F;

T = Average temperature, °F;

T′ = (≤) 575.4°F Reference T_{avg} rated thermal power; M1

K_4 = 1.07; (≤ 1.06) L2

K_5 = (≥) 0.0 for decreasing average temperature, 0.02 sec/°F for increasing average temperature;

K_6 = (≥) 0.00277 for T > T′ and 0 for T ≤ T′;

S = Laplace transform operator, sec^{-1};

$\frac{\tau_3 S}{1 + \tau_3 S}$ = The function generated by the rate-lag controller for T_{avg} dynamic compensation; LA1

τ_3 = Time constant utilized in the rate-lag controller for T_{avg}, τ_3 = 10 seconds; (≥ 9) L2

f(ΔI) = As defined in d. above M1

[T3.3.1-1 (9)] f. Low reactor coolant loop flow ≥ 90% (94.26) of normal indicated flow. (a. Single loop b. Two loops) A3

[T3.3.1-1 (12)] g. Low reactor coolant pump frequency ≥ 57.5 (58.2) Hz.

[T3.3.1-1 (11)] h. Undervoltage ≥ 70% of normal voltage (3120).

2.3.1.3 Other Reactor Trips

[T3.3.1-1 (8)] a. High pressurizer water level ≤ 92% (91) of span. M1

[T3.3.1-1 (13)] b. Low-low steam generator water level ≥ 14% (16) of narrow range instrument span.

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 2 (C)	Reactor Critical (MODES 1, 2) Hot/Cold Shutdown* (Modes 3, 4, 5) (a)
[T3.3.1-1(2)] 2.	Nuclear Flux Power Range*				(A30)
	A. High Setpoint	4	3	ACTION 2 (D)	Reactor Critical (MODES 1, 2)
	B. Low Setpoint	4	3	ACTION 2 (E)	Reactor Critical** (b) (c)
[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				(A31) (d) (e)
	A. Startup	2	2	ACTION 4 (I) (L)	Reactor Critical*** (MODE 2)
	B. Shutdown	2 (1)	1	ACTION 5	Hot/Cold Shutdown
	C. Shutdown	2	2	ACTION 8 (K)	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			(N) (M50)	
	A. Single Loop	3/loop	2/loop	ACTION 6	≥45% of rated power (MODE 1 (g))
	B. Two Loop	3/loop	2/loop	ACTION 6	**** (MODE 1 (h))

Add ACTIONS (M49)

Amendment No. ~~85~~, 175

Supplement 7

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

A27

A1

ITS

TABLE 3.5-2 (Continued)

REACTOR TRIP INSTRUMENTATION LIMITING OPERATING CONDITIONS

TABLE NOTATIONS

(and either 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. A30

Add Note (c) — A31

ACTION STATEMENTS

Add Note (e)

[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 12 (48) 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

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

[ACTION D] 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. (be in MODE 3 in 12 hours) M6

[ACTION E]

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

With the number of channels OPERABLE one or two less than the Minimum Channels OPERABLE L38

ITS

TABLE 3.5-2 (Continued)

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 M] [ACTION N] [ACTION P] 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) (L.4) (M4) (L3) (L.4)

[ACTION N] <P8 in 10 hrs [ACTION P] [ACTION M] <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, 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 (A40) (L.4) (L.10)

[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)

(A1)

ITS

TABLE 4.1-1 (Continued)

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

See ITS 3.1.7

	Channel Description	Check	Calibrate	Test	Remarks
9.	Analog Rod Position	S (1,2)	R	M	(1) With step counters (2) Following rod motion in excess of six inches when the computer is out of service
10.	Rod Position Bank Counters	S (1,2)	N.A.	N.A.	(1) Following rod motion in excess of six inches when the computer is out of service (2) With analog rod position
[T3.3.1-1 (13)] 11.	Steam Generator Level	S SR 3.3.1.1	R SR 3.3.1.10	M SR 3.3.1.7	L16
12.	Charging Flow	N.A.	R	N.A.	
13.	Residual Heat Removal Pump Flow	N.A.	R	N.A.	
14.	Boric Acid Tank Level	D (1)	R	N.A.	(1) Bubbler tube rodded weekly
15.	Refueling Water Storage Tank Level	W	R	N.A.	LA4
16.	Deleted				
17.	Volume Control Tank Level	N.A.	R	N.A.	
18.	Containment Pressure	D	R	B/W (1)	(1) Containment isolation valve signal
19.	Deleted by Amendment No. 85				
20.	Boric Acid Makeup Flow Channel	N.A.	R	N.A.	

M14

[T3.3.1-1 (10)] Add SR 3.3.1.14 for RCP Breaker Position

[T3.3.1-1 (16)] Add SR 3.3.1.14 for SI input from ESFAS

See ITS 3.3.2

A1

Specification 3.3.1

Amendment No. ~~97~~, 116

ITS

TABLE 4.1-1 (Continued)

	Channel Description	Check	Calibrate	Test	Remarks	
	21. Containment Sump Level	N.A.	R	N.A.		See 3.4.15
[T3.3.1-1(15)]	22. Turbine Trip Logic**	N.A.	N.A. SR 3.3.1.10	R SR 3.3.1.15		M17
	23. Accumulator Level and Pressure	S	R	N.A.		LA4
	24. Steam Generator Pressure	S	R	M		See ITS 3.3.2
[T3.3.1-1(17.e)]	25. Turbine First Stage (Impulse) Pressure	S SR 3.3.1.1	R SR 3.3.1.10	M SR 3.3.1.13		L17
	26. DELETED					
[T3.3.1-1(20)]	27. Logic Channel Testing (Automatic Trip)	N.A.	N.A.	M(1) S/U(2) SR 3.3.1.5 on a STAGGERED TEST BASIS	(1) (Applicability MODES 1,2,3,4,5) During hot shutdown and power operations. When periods of reactor cold shutdown and refueling extend this interval beyond one month, this test shall be performed prior to startup. (2) Logic channel testing for nuclear source range channels shall only be required prior to each reactor startup, if not performed within the previous seven (7) days.	M18, M19, L18
	28. DELETED					
[T3.3.1-1(12)]	29. 4 KV (RCPs) Frequency	N.A.	R SR 3.3.1.10	R SR 3.3.1.14		

[T3.3.1-1(15)] ** Stop valve closure or low EH fluid pressure.

[T3.3.1-1(17.a-d)] Add SR 3.3.1.11 and SR 3.3.1.13 for RPS interlocks P-6, P-8, P-10 and SR 3.3.1.13 and SR 3.3.1.14 for RPS interlock P-7 — M14

A1

Supplement

Specification 3.3.1

Amendment No. 83, 106, 122, 127, 133

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 (b)] ## 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 D, ACTION E] 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 (or restore OPERABLE in 6 hours). (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 42 hours

Add ACTIONS "Note" (A5)

TABLE 4.1-1 (Continued)

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

	Channel Description	Check	Calibrate	Test	Remarks
9.	Analog Rod Position	S (1,2)	R	M	(1) With step counters (2) Following rod motion in excess of six inches when the computer is out of service
10.	Rod Position Bank Counters	S (1,2)	N.A.	N.A.	(1) Following rod motion in excess of six inches when the computer is out of service (2) With analog rod position
11.	Steam Generator Level	S	R	M	
12.	Charging Flow	N.A.	R	N.A.	
13.	Residual Heat Removal Pump Flow	N.A.	R	N.A.	
14.	Boric Acid Tank Level	D (1)	R	N.A.	(1) Bubbler tube rodded weekly
15.	Refueling Water Storage Tank Level	W	R	N.A.	
16.	Deleted				
17.	Volume Control Tank Level	N.A.	R	N.A.	
18.	Containment Pressure	D	R	B/W (1)	(1) Containment isolation valve signal
19.	Deleted by Amendment No. 85				
20.	Boric Acid Makeup Flow Channel	N.A.	R	N.A.	

ITS

See ITS 3.1.7

See ITS 3.3.1

SR 3.3.2.1 SR 3.3.2.7 SR 3.3.2.4

12 hours

92 days

L 51

M 52

TABLE 4.1-1 (Continued)

	Channel Description	Check	Calibrate	Test	Remarks
21.	Containment Sump Level	N.A.	R	N.A.	
22.	Turbine Trip Logic**	N.A.	N.A.	R	
23.	Accumulator Level and Pressure	S	R	N.A.	
24.	Steam Generator Pressure	S	R	M	
25.	Turbine First Stage Pressure	S	R	M	
26.	DELETED				
27.	Logic Channel Testing	N.A.	N.A.	M(1) S/U(2)	(1) During hot shutdown and power operations. When periods of reactor cold shutdown and refueling extend this interval beyond one month, this test shall be performed prior to startup. (2) Logic channel testing for nuclear source range channels shall only be required prior to each reactor startup, if not performed within the previous seven (7) days.
28.	DELETED				
29.	4 Kv Frequency	N.A.	R	R	

** Stop valve closure or low EH fluid pressure.

Specification 3.3.6

TABLE 3.5-3

ENGINEERED SAFETY FEATURES INSTRUMENTATION LIMITING OPERATING CONDITIONS

ITS T3.3.6-1 Item 4

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				
A.	Manual	2	2	ACTION 11	>200°F
B.	High Containment Pressure (Hi Level)	3	2	ACTION 12	>200°F
C.	High Differential Pressure between Any Steam Line and the Steam Header	3/Steam Line	2/Steam Line	ACTION 12	#
D.	Pressurizer Low Pressure	3	2	ACTION 12	#
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	≥350°F ##
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	≥350°F ##
2.	CONTAINMENT SPRAY				
A.	Manual	2	2	ACTION 13	>200°F
B.	High Containment Pressure (Hi Hi Level)	3/Set	2/Set	ACTION 12	>200°F

See 3.3.2

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 3.3.2
	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)
[T 3.3.6-1 (3a)]	i. High Containment Activity. Gaseous	1	0	ACTION 15 (A)	During Containment Purge
[T 3.3.6-1 (3b)]	ii. High Containment Activity. Particulate	1	0	ACTION 15	During Containment Purge (A27)
[T 3.3.6-1 (4)]	iii. Phase A	See Item No. 1.A of Table 3.5-4 for all Phase A initiating functions and requirements			

Add 3.3.6 ACTION A (L46)

Add Table 3.3.6-1 Function 2 (M41)

Amendment No. ~~85~~, 175

Supplement 7

TABLE 3.4-1

AUXILIARY FEEDWATER FLOW AUTOMATIC INITATION*

ITS

place channel in trip - 6 hrs, or MODE 3 - 12 hrs, and MODE 4 - 18 hrs

	NO.	FUNCTIONAL UNIT	1 MINIMUM CHANNELS OPERABLE	2 MINIMUM DEGREE OF REDUNDANCY	3 OPERATOR ACTION IF CONDITIONS OF COLUMN 1 OR 2 CANNOT BE MET
[T3.3.8-1(1)] [ACTION C]	1.	Steam Gen. Water Level-low-low			
		a. Start Motor-Driven Pumps	2/Steam Generator (M51: 3)	1/Steam Generator	Maintain Hot Shutdown (L32)
		b. Start Turbine-Driven Pump	2/Steam Generator	1/Steam Generator	Maintain Hot Shutdown
[T3.3.8-1(4)]	2.	Undervoltage-4KV Busses 1 & 4 Start Turbine-Driven Pump (15 Second Time Delay Pickup)	2 Per Bus	0	Note 1
[T3.3.8-1(2)]	3.	S.I. Start Motor-Driven Pumps	See Table 3.5-3, Item No.1		
[T3.3.8-1(3)]	4.	Station Blackout Start Motor-Driven Pumps (40 Second Time Delay Prior to Starting MD AFW Pumps on Blackout Sequence)	2 Per Bus	0	Note 2
[T3.3.8-1(5)]	5.	Trip of Main Feedwater Pumps Start Motor-Driven Pumps	1/Pump	0	Note 2

A27

[MODES 1,2,3] [MODES 1,2]

* This table is applicable whenever the RCS is > 350°F except Item 5. Item 5 is applicable only when the RCS is at normal operating temperature and the reactor is critical.

Note 1: 4KV Busses 1, 2, and 4 each have two undervoltage relays. One relay on each of the three busses provides an input to the reactor trip logic. Both relays on Busses 1 and 4 provide inputs to the SD AFW pump start logic. If the undervoltage relay on Busses 1 or 4 that provides the input to the reactor trip logic fails, follow the requirements of Table 3.5-2 Item 14 in addition to the following. If either 4KV undervoltage relay on Busses 1 or 4 fails, within 4 hours insert the equivalent of an undervoltage signal from the affected relay in the SD AFW pump start circuit and repair the affected relay within 7 days. If the affected relay is not repaired in the 7 days, then commence a normal plant shutdown to hot standby. (A21) [ACTION B] (or) (M48) (MODE 3 in 10 hours, MODE 4 in 16 hours) (M48)

Note 2: Restore the inoperable channel to operable status within 48 hours. If the inoperable chanel is not restored to an operable status within 48 hours, then commence a normal plant shutdown and cooldown to ≤ 350°F. [ACTION E] [ACTION D] (M44)

(MODE 3 in 54 hrs.) (MODE 4 in 60 hrs)

Supplement I 3.3.8

Amendment No. 86

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 Specification 2.3.1.2.d describes in words, the amount by which the over temperature ΔT trip setpoint is automatically reduced. ITS Specification 3.3.1 provides, instead, the mathematical expression for this reduction. This change is administrative, and has no adverse impact on safety.

A3 CTS Specification 2.3.1.2.f requires that the reactor be tripped on low reactor coolant flow. ITS Specification 3.3.1 has the same requirement, but identifies single loop low flow and two loop low flow separately. Since these numbers are identical, this change is administrative, and has no adverse impact on safety.

A4 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.

A5 The CTS is revised to adopt ISTS ACTIONS "Note," and/or Surveillance Requirements "Note." The ACTIONS "Note" provides for separate Condition entry for each function. The CTS is silent with regard to separate Condition entry, neither specifically permitting, nor disallowing. The Surveillance Requirements "Note" refers the reader to the specified ITS Table to determine which Surveillance Requirements apply for each Function. This change is administrative, and has no adverse impact on safety.

A6 CTS Table 3.5-2, Item 4.B is revised to add ITS footnote "e" to the Applicable Conditions of "Hot/Cold Shutdown." Footnote "e" basically notes that this Specification applies in those MODES when the reactor trip breakers are open. Item 4.C is specifically Applicable when the reactor trip breakers are closed. This change is therefore administrative, and has no adverse impact on safety.

A7 CTS Table 4.1-1 contains descriptive comments in the "Remarks" column. These remarks are not retained in the ITS. Deletion of these remarks does not result in any technical alteration of the Specifications. Therefore, this change is administrative and has no adverse impact on safety.

A8 Not used.

A9 Not used.

A10 The CTS is revised to adopt the SR 3.3.2.6 "Note," which states that verification of setpoints is not required for manual initiation Functions. The CTS and ITS Table 3.3.2-1 do not specify setpoints or allowable values for the manual ESFAS initiation functions. This is considered to be acceptable since these functions are not credited in safety analyses. Since these manual functions do not have Technical Specification acceptance criteria associated with the setpoint or allowable value, not requiring verification of the setpoint during the TRIP ACTUATING DEVICE OPERATIONAL TEST is considered to be administrative.

A11 CTS Table 3.5-3, Functional Units "E," High Steam Flow coincident with Low T_{avg}, and "F," High Steam Flow coincident with Low Steam Pressure, have Applicability at a temperature ≥ 350°F. ITS Table 3.3.2-1 has Applicability for the same Functional units in MODES 1, 2 and 3. Therefore, this change is administrative, and has no adverse impact on safety.

A12 The CTS is revised to adopt ITS Specification 3.3.3 ACTION F. This Required Action is simply an instruction to enter the Condition referenced in Table 3.3.3-1 if other Required Actions and associated Completion Times are not met. This change is administrative, and has no adverse impact on safety.

A13 Not used.

A14 CTS Table 3.5-5, amended Note 7 is not adopted in the ITS. This amended Note was issued as a one-time requirement, which was applicable during the balance of Cycle 13 and Cycle 14. This change is administrative and has no adverse impact on safety.

A15 The CTS is revised by adopting the ITS Specification 3.3.3 Surveillance Requirement "Note," which merely states that SR 3.3.3.1 and SR 3.3.3.2 apply to each Post Accident Monitoring (PAM) Function in Table 3.3.3-1, except for Function 9, Containment Isolation Valve Position, which is addressed in SR 3.3.3.3. This change is administrative and has no adverse impact on safety.

A16 The CTS is revised to adopt the Note associated with ITS SR 3.3.3.2, which states that Neutron Detectors are excluded from CHANNEL CALIBRATION. This Note, added to ITS SR 3.3.3.2, is provided as a direct result of adding Functions 1 and 2, Power Range and Source Range Instrumentation, respectively, to ITS Table 3.3.3-1, Post Accident Monitoring Instrumentation. The addition of these Functions to the CTS is addressed in Discussion of Change M32. CTS Table 3.5-5 does not include calibration requirements for these instruments. Therefore, the CTS do not require calibration of the neutron detectors associated with these post accident monitoring functions. As such, adding the Note to ITS SR 3.3.3.2 is consistent with CTS requirements and is administrative.

A17 The CTS Table 3.5-1 footnotes are not retained in the ITS. These footnotes only provide descriptive information of a textbook nature related to specific Engineered Safety Feature (ESF) functional units, and need not be repeated in the ITS. This change is administrative, and has no adverse impact on safety.

A18 CTS Specification 3.10.5.1.a is revised to incorporate the phrase, "with undervoltage and shunt trip mechanisms," as part of Reactor Trip Breaker (RTB) OPERABILITY. Since the undervoltage and shunt trip mechanisms are considered to be a part of the RTB, this change only provides clarity, and is therefore administrative and has no adverse impact on safety.

A19 The footnotes in CTS Tables 3.5-5 and 4.1-1 are deleted. These footnotes only provide a reference to the source of a requirement in the Table, and need not be incorporated in the ITS. This change is administrative and has no adverse impact on safety.

A20 The CTS is revised by the addition of LCO 3.3.8, which simply makes the statement that the Auxiliary Feedwater (AFW) instrumentation in Table 3.3.8-1 must be OPERABLE. Therefore, this change is administrative and has no adverse impact on safety.

A21 CTS Table 3.4-1, Note 1, discussion of 4kV bus undervoltage relays and logic is not adopted in the ITS. This is descriptive information and direction of which requirements to follow if a relay fails. It is not necessary to repeat this information in the ITS, because the ITS is clear with respect to which requirements apply. This change is administrative and has no adverse impact on safety.

A22 CTS Table 4.8-1, Function "a" (Steam Generator Water Level - Low Low) and Function "d" (Station Blackout - E1 and E2 busses), are revised to require that a CHANNEL CHECK be performed at a Frequency of 12 hours, and a CHANNEL CALIBRATION be performed at a Frequency of 18 months, respectively. Since CTS Table 4.1-1, Item 11 and Item 32.a already require that these Surveillances be performed at the same Frequencies, this change is administrative and has no adverse impact on safety.

A23 Not used.

A24 Portions of the "Notes" in Table Notation to CTS Table 3.5-5 are not retained in the ITS. The portions that are deleted contain descriptive information related to the instrumentation in Table 3.5-5, and other clarification, which is not necessary to be repeated in the ITS. Since the deleted information does not contain any requirements, it is an administrative change which has no adverse impact on safety.

A25 CTS Table 4.1-1 is revised to add SRs 3.3.1.1, 3.3.1.2, 3.3.1,3, 3.3.1.4, 3.3.1.5, 3.3.1.6, 3.3.1.7, 3.3.1.8, 3.3.1.9, 3.3.1.10, 3.3.1.11, 3.3.1.12, 3.3.1.13, 3.3.1.14, and 3.3.1.15 into ITS. The addition of the surveillance text neither adds nor deletes requirements. The specific impact of the surveillance is discussed in each function for which the SR applies as shown in ITS Table 3.3.1-1. Therefore, this change is administrative, and has no impact on safety.

A26 Not used.

A27 CTS Table 3.5-2 is revised to delete Column 2, "Minimum Channels Operable," and the number of channels for Function 4.b in Column 1, "Total Number of Channels," is revised from two (2) to one (1). The Required Actions in the CTS refer to the total number of channels with few exceptions and the total number of channels is retained in the ITS Table 3.3.1-1. For the remaining Required Actions in the CTS that refer to the minimum channels OPERABLE, the minimum channels OPERABLE are the same number of channels as the total number of channels, with the exception of CTS Table 3.5-2, Function 4.b. The total number of channels for the source range with the reactor trip breakers open is changed from two (2) to (1), consistent with retention of CTS Required Action 5 in ITS as Required Action L.

CTS Tables 3.5-3 and 3.5-4 are revised to delete Column 2, "Minimum Channels Operable." The Required Actions in the CTS refer to the total 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.

A30 CTS Table 3.5-2 identifies that the Applicability of the Intermediate Range Neutron Flux channels is when the reactor is critical below the P-10 interlock. The CTS Table 3.5-2 ACTION 3 splits the actions based on whether power is below or above the P-6 interlock setpoint (ITS Table 3.3-1 Function 3 and Notes (c) and (d)). The only difference in the requirements when above or below the P-6 interlock is in the applicable ACTIONS of ITS 3.3.1. Therefore, the change (including the addition of Note (c)) is considered to involve a presentation preference for consistency with NUREG-1431 and is administrative.

A31 CTS Table 3.5-2 identifies that the Applicability of the Source Range Neutron Flux channels in Function 4.B is Hot/Cold Shutdown (ITS MODES 3, 4, and 5). CTS Table 3.5-2 identifies that the Applicability of the Source Range Neutron Flux channels in Function 4.C is Hot/Cold Shutdown (ITS MODES 3, 4, and 5) with the reactor trip breakers closed. ITS Table 3.3-1 Function 4 and Notes (a) and (e) identify the Applicability of the Source Range Neutron Flux channels as MODES 3, 4, and 5 with the reactor trip breakers closed and rods not fully inserted or the Rod Control System capable of rod withdrawal, and MODES 3, 4, and 5 with the reactor trip breakers open. Note (e) also clarifies that in MODES 3, 4, and 5 with the reactor trip breakers open, the source range Function does not provide a reactor trip but does provide indication and alarm. (The change associated with Note (a) is addressed in Discussion of Change L35.) The Notes associated with the Applicability of Source Range Neutron Flux channels ensure that the MODE 3, 4, and 5 requirements for Source Range Neutron Flux channels are applied consistent with the intent of the CTS Table 3.5-2 Applicability for the Source Range Neutron Flux channels in Functions 4B and 4C. Therefore, this change is administrative.

A32 CTS 3.10.5.1.a requires two reactor trip breakers to be operable. CTS 3.10.5.2.c allows one reactor trip bypass breaker to be racked in and closed for a limited period of time and CTS Table 4.1-1 Item 47 requires performance of testing to demonstrate the operability of the reactor

trip bypass breaker when placing the reactor trip bypass breaker in service (i.e., racked in and closed). ITS Table 3.3.1-1 Function 18 Note (i) explicitly identifies that the Reactor Trip Breaker (RTB) requirements include any reactor trip bypass breakers that are racked in and closed for bypassing an RTB. Therefore, the change associated with adding Note (i) is considered to involve a presentation preference for consistency with NUREG-1431 and is administrative.

A33 Remark 1 of CTS Table 4.1-1 Item 1, Nuclear Power Range, describes that the calibration of the Nuclear Power Range instrumentation is performed by comparison to thermal power calculations during power operations. ITS SR 3.3.1.2 requires that this requirement be satisfied by comparing the results of a calorimetric heat balance to the instrumentation channel output and adjust the channel if the absolute difference is > 2% (ITS SR 3.3.1.2 Note 1). Note 2 to ITS SR 3.3.1.2 states that the SR is not required to be performed until 12 hours after THERMAL POWER is ≥ 15% RTP. With THERMAL POWER ≥ 15% RTP, the reactor is in power operation as defined in ITS Table 1.1-1 (the allowance to not perform the SR until 12 hours after THERMAL POWER is ≥ 15% RTP is addressed in Discussion of Change L40). Since this change is consistent with current interpretation of the daily calibration required by Item 1 of CTS Table 4.1-1, the change is considered to be administrative.

A34 CTS Table 4.1-1 Item 4, Reactor Coolant Temperature, requires the calibration of the Reactor Coolant Temperature instrumentation. ITS SR 3.3.1.3 requires that this requirement be satisfied by comparing the results of incore detector output measurements to NIS AFD and adjust the channel if the absolute difference is > 3% (Note 1 to ITS SR 3.3.1.3). Since Item 4 of CTS Table 4.1-1 is interpreted as requiring the same comparison and adjustment as ITS SR 3.3.1.3, the change is considered to be administrative.

A35 CTS Table 4.1-1 Item 47, Reactor Trip Bypass Breakers, Remark 3 requires performance of a test of the reactor trip bypass breakers when placing the bypass breakers in service. The Note to ITS SR 3.3.1.4 requires performance of a TADOT of the reactor trip bypass breakers prior to placing the reactor trip bypass breakers in service. Since this change is consistent with current interpretation of the requirements of CTS Table 4.1-1 Item 47, the change is considered to be administrative.

A36 CTS Table 4.1-1, Items 1, 2, and 3 (Nuclear Power Range, Nuclear Intermediate Range, and Nuclear Source Range instrumentation), requires testing of the channels to be performed. ITS SR 3.3.1.8 applies to this same instrumentation and is modified by a Note which states that this CHANNEL OPERATIONAL TEST shall include verification that interlocks P-6 and P-10 are in their required state for existing unit conditions. Explicitly adding this Note in the ITS is consistent with current interpretation of the testing requirements and the definition of OPERABILITY as it relates to these instruments. Therefore, this change is administrative.

A37 CTS Table 4.1-1, Items 8, 22, 29, 46, and 47 (4 kV Voltage, Turbine Trip Logic, 4 kV Frequency, Manual Reactor Trip and Reactor Trip Bypass Breakers), requires testing of the channels to be performed. ITS SR 3.3.1.9, SR 3.3.1.14, and SR 3.3.1.15 apply to this instrumentation, as applicable, and are modified by Notes which state that verification of setpoint is not required during these TRIP ACTUATING DEVICE OPERATIONAL TESTS. Explicitly adding these Notes in the ITS is consistent with current interpretation of these testing requirements. Therefore, this change is administrative.

A38 CTS Table 4.1-1, Items 4, 5, 6, 7, 8, 11, 25, 29, 39, and 40 (Reactor Coolant Temperature, Reactor Coolant Flow, Pressurizer Water Level, Pressurizer Pressure, 4 kV Voltage, Steam Generator Level, Turbine First Stage Pressure, 4 kV Frequency, Steam/Feedwater Flow Mismatch and Low Steam Generator Water Level), requires calibration of the channels to be performed. ITS SR 3.3.1.10 and SR 3.3.1.12 apply to this instrumentation, as applicable, and are modified by Notes which state that verification of that time constants are set to required values during these CHANNEL CALIBRATIONS. Explicitly adding these Notes in the ITS is consistent with current interpretation of these testing requirements. Therefore, this change is administrative.

A39 CTS Table 4.1-1, Items 35, 36, and 37 (PORV Position Indicator, PORV Blocking Valve Position Indicator, and Safety Relief Valve Position Indicator) require testing of the valve position indicators to be performed. The current interpretation of this testing requirement, reflected in procedures that implement the testing requirement, is to verify that the valve position indication is in agreement with the actual position of the associated valve. Therefore, the appropriate surveillance for these Functions is the performance of a TADOT (ITS SR 3.3.3.3) since it will verify that the affected valve position indication agrees with the actual position of the associated valve. Setpoint verification is excluded from the TADOT since the affected valve position indication Functions have no associated setpoints. Since this change is consistent with current interpretation of the testing requirement, the change is considered to be administrative.

A40 The Table Notation of CTS Table 3.5-2, Reactor Trip Instrumentation Limiting Operating Conditions, includes ACTION 7. CTS Table 3.5-2 does not include any requirements to enter ACTION 7 in the event of an instrumentation function inoperability. Therefore, CTS Table 3.5-2 ACTION 7 is deleted from the Technical Specifications as an administrative change and has no adverse impact on safety.

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. If the inoperable channel is not placed in trip within 1 hour, CTS 3.0 requires the plant to be placed in Hot Shutdown in the next 8 hours. 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. Due to the construction of the NUREG-1431 Specification 3.3.1 ACTIONS, the 12 hour period is based on allowing 6 hours to place the channel in trip and, if the channel is not placed in trip in 6 hours, allowing an additional 6 hours to be in MODE 3 (i.e, the Completion Time clock does not reset since the Condition is not exited). (The 6 hour time to place the channel in trip is addressed in Discussion of Change L3.) 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 reduces the time allowed to place the plant in MODE 3 from the CTS 3.0 time of 8 hours to the ITS time of 6 hours. This change represents an additional restriction on plant operation necessary to ensure the plant is placed in a non-applicable MODE in a timely manner when the inoperable channel is not placed in the tripped condition within the required time period.

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. ITS Specification 3.3.1

ACTION E requires either the inoperable channel be placed in trip within 6 hours or be in MODE 3 within 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[(a)], 4[(a)], and 5[(a)], including Required Actions C and V, with Note (a) as the RTBs closed and either rods not fully inserted, or rod control system capable of rod withdrawal. 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 MODES 3[(a)], 4[(a)], and 5[(a)], these RPS trip Functions must be OPERABLE when the RTBs and associated bypass breakers are closed and either the rods not fully inserted or the rod control system capable of rod withdrawal. 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 input. 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 input 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, Safety Injection (SI) Input from ESFAS Functions and RPS P-7 interlock. 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-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, except that ITS 3.3.2 Required Actions C.1 and G.1 require restoration of the channel rather than tripping the channel (which is a more restrictive change through the elimination of the option to trip the affected channel). However, ITS Conditions D and G specify that, if the inoperable channel is not restored or placed in trip (as applicable) within the allotted time, the unit must be in MODE 3 in 12 hours and in MODE 4 within 18 hours, and Conditions C and E specify that, if the inoperable channel is not restored or placed in trip (as applicable) within the allotted time, the unit be placed in MODE 3 within 12 hours and in MODE 5 within 42 hours. In the CTS, if the inoperable channel is not placed in trip within 1 hour, CTS 3.0 requires the plant to be placed in Hot Shutdown in the next 8 hours and in Cold Shutdown within the following 30 hours. Due to the construction of the NUREG-1431 Specification 3.3.2 ACTIONS, the time periods to be in MODE 3, MODE 4, and MODE 5 (12 hours, 18 hours, and 42 hours, respectively), are based on allowing 6 hours to restore or place the channel in trip and, if the channel is not restored or placed in trip in 6 hours, allowing an additional 6 hours to be in MODE 3 (i.e, the Completion Time clock does not reset since the Condition is not

exited) and subsequently MODE 4 and MODE 5, as applicable. (The 6 hour time to restore or place the channel in trip is addressed in Discussion of Change L21.) If the channel is not restored or tripped as specified, placing the unit in MODE 3 and subsequently MODE 4 and MODE 5, as applicable, is necessary to place the unit in a MODE where the LCO is no longer applicable. Therefore, this change reduces the time allowed to place the plant in a non-applicable MODE (e.g., in MODE 3 and MODE 5 from the CTS 3.0 time of 8 hours and 38 hours to the ITS time of 6 hours and 36 hours). This change represents an additional restriction on plant operation necessary to ensure the plant is placed in a non-applicable MODE in a timely manner when the inoperable channel is not placed in the tripped condition within the required time period.

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 Table 4.1-3 item 5 requires testing of the containment isolation trip function each refueling. The CTS do not explicitly limit the refueling interval to a finite time period. ITS Surveillance Requirement SR 3.3.2.6 requires performance of this testing at an 18 month Frequency. SR 3.3.2.6 ensures that the containment isolation trip function remains capable of performing it required isolation function. 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 (for ITS Table 3.3.2-1 Functions

other than Function 1.c, 1.e, 1.g, 2.c, 3.a(3), 3.b(3), 4.c, and 4.e), SR 3.3.2.3, SR 3.3.2.4 (for ITS Table 3.3.2-1 Functions other than Functions 1.e, 1.g, 3.a(3), 3.b(3), and 4.e), SR 3.3.2.5, and SR 3.3.2.7 (for ITS Table 3.3.2-1 Functions other than Function 1.c, 1.e, 1.g, 2.c, 3.a(3), 3.b(3), 4.c, and 4.e); 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 operating experience which has shown that these components usually pass Surveillance when performed on this frequency, 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 Not Used.

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. In addition, ACTIONS and Surveillance Requirements (including ITS SR 3.3.3.3) are provided for each of the added Functions. 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 Not used.

M35 The CTS is revised to adopt ITS Specification 3.3.4, "Remote Shutdown System," in the ITS. 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 Functions in ITS Table B 3.3.4-1, Remote Shutdown System Instrumentation and Controls,

are revised to reflect the HBRSEP Unit No. 2 current licensing basis (as identified in UFSAR Section 7.4.1.1 and Table 9.5.1.C-2 and the plant procedure associated with shutdown from outside the control room) associated with the capability to place and maintain the plant in Hot Shutdown from outside the control room. 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 CTS 3.5.1.4 requires the containment ventilation isolation function only when containment integrity is required and is referring to CTS Table 3.5-4 Isolation Functions. CTS 3.6.1.a requires containment integrity unless the reactor is in cold shutdown. CTS Table 3.5-4 includes Phase A and Phase B Containment Isolation Functions and the Containment Ventilation Isolation Function with specified Applicable Conditions. The CTS Table 3.5-4, Ventilation Isolation Function, has an Applicability of "during containment purge." Therefore, the current plant interpretation of this requirement is that the Containment Ventilation Isolation Radiation Monitoring Function (ITS 3.3.6-1 Functions 3.a and 3.b) is only required to be OPERABLE "During Purging." 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. ITS Table 3.3.6-1 defines the Applicability for the required Functions. The Manual Initiation and Automatic Actuation Relays Functions are required to be OPERABLE MODES 1, 2, 3, and 4, and during CORE ALTERATIONS, or movement of irradiated fuel assemblies within containment. The Containment Radiation Function is 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. While in MODES 5 and 6 without fuel handling or purging 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 Function 2, which specifies OPERABILITY requirements for Automatic Actuation Logic and Actuation Relays including associated Surveillance Requirements SR 3.3.6.2 (ACTUATION LOGIC TEST), SR 3.3.6.3 (MASTER RELAY TEST), AND SR 3.3.6.5 (SLAVE RELAY TEST). These requirements ensure that the instrumentation necessary to 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 3.3.6.4, SR 3.3.6.6 (and Note), and SR 3.3.6.7, 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 3.3.6.4 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 3.3.6.6 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 3.3.6.7 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, Conditions D and E require 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 Not used.

M46 Not used.

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 The shutdown actions associated with CTS Table 3.4-1, Note 1, require if the applicable instrument channel is not restored to within the required time period a normal plant shutdown to hot standby to commence. The term "hot standby" as used in CTS Table 3.4-1 is interpreted by HBRSEP Unit No. 2 as whenever the RCS is > 350 F (ITS MODE 3). The basis of this interpretation is the asterisk note to CTS Table 3.4-1 (which states this table is applicable whenever the RCS is > 350 F) and the concept of shutdown actions requiring the plant to be placed in a MODE or condition outside the Applicability. ITS Specification 3.3.8, ACTION B, requires under similar conditions, the plant to be in MODE 3 in 10 hours, and MODE 4 in 16 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. Specifying explicit Completion Times to be in shutdown conditions and requiring a shutdown to MODE 4 constitute more restrictive requirements, and have no adverse impact on safety.

In addition, ITS Condition B specifies that, if the inoperable channel is not placed in trip within the allotted time, the unit must be in MODE 3 in 10 hours and in MODE 4 within 16 hours. In the CTS, if the inoperable channel is effectively not placed in trip (i.e., inserting the equivalent of an undervoltage signal) within 4 hours, CTS 3.0 requires the plant to be placed in Hot Shutdown (ITS MODE 3) in the next 8 hours. Due to the construction of the NUREG-1431 Specification 3.3.2 ACTIONS (from which ITS 3.3.8 ACTIONS were developed), the time periods to be in MODE 3 and MODE 4 (10 hours and 16 hours, respectively), are based on allowing 6 hours to place the channel in trip and, if the channel is not placed in trip in 6 hours, allowing an additional 6 hours to be in MODE 3 (i.e, the Completion Time clock does not reset since the Condition is not exited) and subsequently MODE 4. If the channel is not restored or tripped as specified, placing the unit in MODE 3 and subsequently MODE 4 is necessary to place the unit in a MODE where the LCO is no longer applicable. Therefore, this change reduces the time allowed to place the plant in a non-applicable MODE (e.g., in MODE 3 from the CTS 3.0 time of 8 hours to the ITS time of 6 hours) and also requires the plant to be placed in MODE 4 rather than only MODE 3. This

change represents an additional restriction on plant operation necessary to ensure the plant is placed in a non-applicable MODE in a timely manner when the inoperable channel is not placed in the tripped condition within the required time period.

M49 CTS Table 3.5-2 requires Actions 4, 5, or 8 (as applicable) to be taken if one or two Neutron Flux Source Range channels are inoperable. CTS Table 3.5-2 Actions 4, 5, and 8 only address the condition of one channel inoperable. As a result, a shutdown in accordance with CTS 3.0 would be required if two Neutron Flux Source Range channels are inoperable. CTS 3.0 requires the plant to be placed in Hot Shutdown within 8 hours and in Cold Shutdown within the next 30 hours or the reactor placed in a non-applicable Mode or condition. ITS 3.3.1 Condition J addresses the inoperability of two Neutron Flux Source Range channels and ITS 3.3.1 Required Action J.1 requires immediate opening of the reactor trip breakers. Opening the reactor trip breakers places the plant in a non-applicable condition in less time than is currently required by CTS 3.0. This change represents an additional restriction on plant operation necessary to ensure the reactor is placed in a more stable condition when the protective and monitoring function of the Neutron Flux Source Range channels is lost.

M50 The Applicability of CTS Table 3.5-2, Function 10A, Low Reactor Coolant Flow Single Loop, is "> 45% of rated power." The Applicability in ITS Table 3.3.1-1, Function 9.a, Reactor Coolant Flow - Low, Single Loop, is identified in footnote (g) as, "Above the P-8 (Power Range Neutron Flux) interlock." P-8 is actuated at approximately 40% power. A result of this change restricts bypassing the single-loop-loss-of-flow trip to power levels below 40% rather than below 45%. Requiring the Reactor Coolant Flow - Low, Single Loop Function to be OPERABLE in MODE 1 above the P-8 interlock setpoint represents an additional restriction on plant operation necessary to ensure that a loss of flow in one RCS loop, when above the P-8 interlock setpoint, does not result in DNB conditions in the core.

M51 The "Minimum Channels Operable" column of CTS Table 3.4-1 Function 1, Steam Generator Water Level-Low-Low, requires 2 channels per Steam Generator (SG) to be OPERABLE. In addition in accordance with CTS 1.0 definition of "degree of redundancy", the "Minimum Degree of Redundancy" column of CTS Table 3.4-1 Function 1 indicates that 1 channel per SG is allowed to be inoperable on an indefinite basis. As a result of the change to ITS Table 3.3.8-1 Function 1, the total number of Steam Generator Water Level-Low-Low channels required to be OPERABLE is 3 per SG (which is included as the "REQUIRED CHANNELS" for Function 1 in ITS Table 3.3.8-1). Since action is required in ITS 3.3.8 if a single channel per SG of the SG Water Level-Low-Low Function is inoperable, this change represents an additional restriction on plant operation. This change is necessary to assure Auxiliary Feedwater (AFW) actuation

capability of the motor driven AFW pumps from the SG Water Level-Low-Low Function is maintained in the event of a single failure.

M52 CTS Table 4.1-1 item 18 requires a CHANNEL CHECK of the containment pressure instrumentation to be performed once per 24 hours. This instrumentation is addressed in ITS Table 3.3.2-1 by Functions 1.c, 2.c, 3.a(3), 3.b(3), and 4.c. ITS SR 3.3.2.1, which applies to these Functions, requires a CHANNEL CHECK to be performed once per 12 hours. The purpose of a CHANNEL CHECK is to detect gross channel failure between each CHANNEL CALIBRATION. This change reduces the Surveillance interval from once per 24 hours to once per 12 hours and represents an additional restriction on plant operation necessary to achieve consistency with other instrumentation CHANNEL CHECK requirements and NUREG-1431, Revision 1.

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA1 CTS Specification 2.3.1.2.d provides a descriptive definition of a function generated by the lead-lag controller for T_{avg} dynamic compensation, a discussion of the definition of f(ΔI), and how the permissible flux difference range is extended for variations in power level, all in the overtemperature ΔT calculation. CTS Specification 2.3.1.2.e provides a descriptive definition of a function generated by the rate-lag controller for T_{avg} dynamic compensation, and definition of a time constant in the rate-lag controller for T_{avg}, all in the overpower ΔT calculation. This descriptive information of the affected functions is not necessary to ensure the OPERABILITY of the associated RPS instrumentation. Therefore, this descriptive information related to the overtemperature ΔT and overpower ΔT functions is to be relocated to Bases. The requirements of ITS 3.3.1 and the associated Surveillance Requirements for the RPS instruments are adequate to ensure the instruments are maintained OPERABLE. As such, this relocated information is not required to be in the Technical Specifications to provide adequate protection of the public health and safety. Changes to the ITS Bases will be controlled by the provisions of the Bases Control Program described in Chapter 5 of the Technical Specifications.

LA2 CTS Specification 2.3.3 requires that the RCS narrow range temperature sensor response time be less than or equal to a 4.0 second lag time constant. 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 the RCS temperature sensors. 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 3.10.5.1.b, requires that the reactor not be made critical unless the reactor trip bypass breakers are racked out or removed. This detail, related to the OPERABILITY of a Reactor Trip Breaker (RTB) train, is to be relocated to Bases. These details are not necessary to ensure the OPERABILITY of the RTB trains. The requirements of ITS 3.3.1 (RPS Instrumentation),the ACTIONS associated with bypassing a RTB train, and LCO 3.0.4 are adequate to ensure the RTB trains are maintained OPERABLE and that the reactor trip bypass breakers are racked out or removed prior criticality. As such, this relocated detail is not required to be in the Technical Specifications to provide adequate

protection of the public health and safety. Changes to the ITS Bases will be controlled by the provisions of the Bases Control Program described in Chapter 5 of the Technical Specifications.

LA4 CTS Table 4.1-1 contains instrument channel surveillance requirements for Charging Flow, Residual Heat Removal (RHR) Pump Flow, Boric Acid Tank Level, Refueling Water Storage Tank (RWST) Level, Volume Control Tank Level, Boric Acid Makeup Flow Channel, and Accumulator Level and Pressure. These instruments do not necessarily relate directly to OPERABILITY of the associated system or the ability to maintain the affected parameters within limits. In general the Improved Standard Technical Specifications, NUREG-1431, do not specify indication-only or test equipment to be OPERABLE to support OPERABILITY of a system or component. Control of the availability of, and necessary compensatory activities, for indication instruments, monitoring instruments, alarms, and test equipment are addressed by plant procedures and policies. Therefore, the Charging Flow, Residual Heat Removal (RHR) Pump Flow, Boric Acid Tank Level, Refueling Water Storage Tank (RWST) Level, Volume Control Tank Level, Boric Acid Makeup Flow Channel, and Accumulator Level and Pressure instrument channel Surveillances are not required to be in the Technical Specifications to provide adequate protection of the public health and safety. The Charging Flow, Residual Heat Removal (RHR) Pump Flow, Boric Acid Tank Level, Refueling Water Storage Tank (RWST) Level, Volume Control Tank Level, Boric Acid Makeup Flow Channel, and Accumulator Level and Pressure instrument channel Surveillances are to be relocated to Technical Requirements Manual (TRM). This approach provides an effective level of regulatory control and provides a more appropriate change control process. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of this detail is acceptable.

LA5 Not used.

LA6 CTS Table 3.5-5, Note 5, requires a pre-planned alternate method of monitoring be available before the Required Action to restore both inoperable post accident monitoring channels to OPERABLE status within 7 days is allowed. 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, because the ITS still retains the allowed outage times and requirements for OPERABILITY of the post accident monitoring channels. 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 3.5-2, Item 15 and associated Actions 9 and 10 provide requirements for the Control Rod Misalignment Monitor consisting of an ERFIS Rod Position Deviation Monitor and a Quadrant Power Tilt Monitor and are to be relocated to the Technical Requirements Manual (TRM). The ERFIS Rod Position Deviation Monitor provides continuous monitoring capability and alarms at a preset value to alert the operator of a potential control rod misalignment and the Quadrant Power Tilt Monitor provides continuous monitoring and alarms at a preset value to alert the operator of a potential Quadrant Power Tilt Ratio (QPTR) limit violation. These instruments do not necessarily relate directly to OPERABILITY of the associated system or the ability to maintain the affected parameters within limits. In general the Improved Standard Technical Specifications, NUREG-1431, do not specify indication/alarm-only or test equipment to be OPERABLE to support OPERABILITY of a system or component. Control of the availability of, and necessary compensatory activities, for indication instruments, monitoring instruments, alarms, and test equipment are addressed by plant procedures and policies. In addition, if one or both of these monitors are inoperable, the frequency of performance of surveillances associated with rod group alignment limits and QPTR limits, as applicable, are increased as required by ITS SR 3.1.4.1 and ITS SR 3.2.4.1, respectively. Therefore, the requirements for the ERFIS Rod Position Deviation Monitor and a Quadrant Power Tilt Monitor are not required to be in the Technical Specifications to provide adequate protection of the public health and safety. This approach provides an effective level of regulatory control and provides a more appropriate change control process. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of this detail is acceptable.

LA8 Remark 4 to CTS Table 4.1-1, Item 4, Reactor Coolant Temperature, requires the refueling outage calibration to include a narrow range RTD cross calibration and remark 1 to CTS Table 4.1-1, Item 30, Reactor Trip Breakers, requires the monthly trip actuating device operational test to verify the operability of the UV trip attachment and the shunt trip attachment individually. These details of the methods for performing the calibration of reactor coolant temperature instrumentation and testing of the reactor trip breakers are to be relocated to ITS 3.3.1 Bases. These details are not necessary to ensure the OPERABILITY of the RPS instrumentation. The requirements of ITS 3.3.1 and the associated Surveillance Requirements are adequate to ensure the RPS instrumentation is maintained OPERABLE. As such, these relocated details are not required to be in the Technical Specifications to provide adequate protection of the public health and safety. Changes to the ITS Bases will be controlled by the provisions of the Bases Control Program described in Chapter 5 of the Technical Specifications.

LA9 CTS Table 3.5-1 for the Loss of Power Functions describes, in the "CHANNEL ACTION" column, the action that occurs when the associated Loss of Power Function actuates (i.e., trip the normal supply breaker). This design detail is to be relocated to the UFSAR. Details relating to system design and operation are unnecessary in the LCO. These details are not necessary to ensure the OPERABILITY of the Loss of Power Instrumentation. The requirements of ITS 3.3.5 and the associated Surveillance Requirements are adequate to ensure the Loss of Power instruments are maintained OPERABLE. As such, the relocated details are not required to be in Technical Specifications to provide adequate protection of the public health and safety. This approach provides an effective level of regulatory control and provides a more appropriate change control process. 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 The CTS is revised to adopt the "ALLOWABLE VALUE" column from ISTS Table 3.3.1-1 and Table 3.3.2-1. This column is added to provide an allowance for calibration tolerances, instrumentation uncertainties, instrument drift, and severe environment errors for those RPS and ESFAS channels that must function in harsh environments. The Allowable Values specified in Table 3.3.1-1 and Table 3.3.2-1 are conservatively set with respect to the analytical limits. In establishing these allowable values, some have been determined to be less conservative than the CTS trip setpoint limits. The less conservative parameters, which include power range neutron flux (high and low), OTΔT, OPΔT, low pressurizer pressure, and RCS loop low flow, are considered to be a relaxation of requirements, which is less restrictive.

This change is acceptable, however, because the actual nominal trip setpoint is more conservative than that specified by the Allowable Value to account for changes in random measurement errors, such as drift during a surveillance interval. Setpoints in accordance with the Allowable Value ensure that safety limits are not violated during abnormal operational occurrences (AOOs), and that the consequences of design basis accidents (DBAs) will be acceptable, providing the unit is operated from within the LCOs at the onset of the AOO or DBA and the equipment functions as designed. The Allowable Values listed in Table 3.3.1-1 and Table 3.3.2-1 are conservatively set with respect to the analytical limits, and are based on the methodology described in the company setpoint methodology procedure. The magnitudes of uncertainties are factored into the determination of each trip setpoint. All field sensors and signal processing equipment for these channels are assumed to operate within the allowances of these uncertainty magnitudes. This change is consistent with NUREG-1431.

L2 CTS Specifications 2.3.1.2.d and 2.3.1.2.e set the values of certain OTΔT and OPΔT parameters as being "=" to specific values. the specific values in CTS are normal values with an instrument tolerance of ± 10%. ITS Table 3.3.1-1, Note 1 modifies the OTΔT values to $\tau_1 \geq 20.08$ seconds and $\tau_2 \leq 3.08$ seconds and includes the 10% instrument tolerance. ITS Table 3.3.1-1 Note 2 modifies the OPΔT values to $\tau_3 \geq 9$ seconds and includes the 10% instrument tolerance. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because these parameter settings are cycle specific and only permit installation of a more restrictive setpoint in the actual hardware. In addition, the instrument tolerance was evaluated against the analysis associated with RPS instrument time constants and found to be acceptable. Although these parameters normally do not change, they are subject to modification as a result of a reload safety analysis. This change is consistent with NUREG-1431.

L3 CTS Table 3.5-2 Table Notation ACTION 6 permits operation to proceed until performance of the next required operational test, provided that the inoperable channel be placed in the tripped condition within 1 hour. ITS Specification 3.3.1 ACTION E permits instead, unrestricted continued operation provided that the inoperable channel be placed in trip in 6 hours. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because the 6 hours allowed to place the inoperable channel in trip is consistent with WCAP-10271-P-A, Supplement 2, Rev. 1, June 1990. Additionally, placing the inoperable channel in trip results in a partial trip condition requiring only one-out-of-two logic for actuation. This change is consistent with NUREG-1431.

As required by the NRC Safety Evaluation (dated April 30, 1990) accepting the generic reliability analysis in WCAP-10271-P-A, Supplement 2, Rev.1, CP&L has confirmed that the HBRSEP Unit No. 2 logic design of the affected instrumentation is bounded by that analyzed in the reliability analysis and the conclusions are applicable to the HBRSEP Unit No. 2 design. In addition, CP&L has confirmed that the instrument drift due to extended Surveillance Frequencies, associated with application of the generic reliability analysis to the HBRSEP Unit No. 2 instrumentation, is already properly accounted for in the setpoint calculation methodology.

L4 CTS Table 3.5-2 inoperable channel ACTION for 4kV Undervoltage provides that operation may proceed until performance of the next operational test if the inoperable channel is placed in trip within 1 hour. ITS Table 3.3.1-1 ACTION M for the same function permits unrestricted continued operation provided the inoperable channel is placed in trip in 6 hours, or reducing THERMAL POWER to less than P-7 in 12 hours. This change can be considered a relaxation of requirements and is less restrictive. This change is acceptable, however, because the 6 hour time to place the inoperable channel in trip is consistent with WCAP-10271-P-A, Supplement 2, Rev. 1, June 1990, and considers the redundant capability provided by the remaining OPERABLE channel, and the unlikelihood of occurrence of an event that may require the protection afforded by the function during this period. This change is consistent with NUREG-1431.

As required by the NRC Safety Evaluation (dated April 30, 1990) accepting the generic reliability analysis in WCAP-10271-P-A, Supplement 2, Rev.1, CP&L has confirmed that the HBRSEP Unit No. 2 logic design of the affected instrumentation is bounded by that analyzed in the reliability analysis and the conclusions are applicable to the HBRSEP Unit No. 2 design. In addition, CP&L has confirmed that the instrument drift due to extended Surveillance Frequencies, associated with application of the generic reliability analysis to the HBRSEP Unit No. 2 instrumentation, is already properly accounted for in the setpoint calculation methodology.

L5 CTS Table 3.5-2 Table Notations "****" and "*****" relate to MODE Applicability when certain reactor trip functions are above either the P-10 or P-7 setpoints. ITS Table 3.3.1-1 Footnotes (f) and (h) relate to MODE Applicability when certain reactor trip functions are above only the P-7 setpoint. Elimination of the "or" connector (with P-10) is a relaxation of requirements, which is less restrictive, since the P-10 setpoint can be exceeded without the trip function having MODE Applicability. This change is acceptable, however, since both the P-7 and P-10 setpoints are at 10 percent RTP, and with a reactor trip function above the P-7 setpoint, the unit is in essentially the same condition. This change is consistent with NUREG-1431.

L6 CTS Table 3.5-2 ACTION 1 requires an inoperable manual reactor trip function to be restored to OPERABLE status within 12 hours, or be in hot shutdown within the next 8 hours. ITS Specification 3.3.1 ACTION B requires an inoperable manual reactor trip function to be restored to OPERABLE status within 48 hours, or be in MODE 3 within 54 hours, and the RTBs open in 55 hours. While the adoption of the requirement to open the RTBs in 55 hours is a new, more restrictive requirement, the overall change in Completion Times is a relaxation of requirements, and is less restrictive. The 48 hour Completion Time is acceptable, however, considering that there are two automatic actuation trains and another manual initiation channel OPERABLE, and the low probability of an event occurring during this interval. The 6 additional hours to reach MODE 3 from full power in an orderly manner and without challenging unit systems are reasonable, based on operating experience. This change is consistent with NUREG-1431.

L7 The CTS is revised to adopt ISTS Specification 3.3.1, Required Action D.2.2 "Note." CTS Table 3.5-2, ACTION 2, requires under certain conditions, that the QPTR be monitored every 12 hours. The D.2.2 Note only requires this Surveillance to be performed when the Power Range Neutron Flux input to QPTR is inoperable. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because failure of a component in the Power Range Neutron Flux channel which renders the High Flux Trip Function inoperable may not affect the capability to monitor QPTR. As such, performing the Surveillance using the movable incores is redundant, and not necessary. This change is consistent with NUREG-1431.

L8 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. ITS Specification 3.3.1

ACTION E requires either the inoperable channel be placed in trip within 6 hours or be in MODE 3 within 12 hours. ITS Specification 3.3.1 ACTION E is associated with the Neutron Flux Power Range Low Function (ITS Table 3.3.1-1 Function 2.b) which is only applicable in MODE 1 below the P-10 setpoint and in MODE 2. As a result, ITS 3.3.1 ACTION E is only applicable below 10% RTP. Therefore, for the conditions for which ITS 3.3.1 ACTION E applies, the CTS requirement associated with restricting power to ≤ 75% RTP is always satisfied and the requirement to monitor QPTR is not required since the Applicability of ITS 3.2.4, QUADRANT POWER TILT RATIO (QPTR), is when power is > 50% RTP. 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 least restrictive actions that can be taken in the CTS are to place the channel in trip in 1 hour and monitor QPTR at a Frequency of 12 hours. The least restrictive actions that can be taken in the ITS are to place the channel in trip in 6 hours and monitor QPTR (SR 3.2.4.2) at a Frequency of 12 hours. The ITS Frequency of 6 hours for placing the channel in trip is a relaxation of requirements, and is a less restrictive change. Elimination of the requirement to reduce the power range neutron flux trip setpoint to ≤ 85% is also a less restrictive change. This change is acceptable, however, because the 6 hour Frequency for placing the channel in trip is consistent with WCAP-10271-P-A, Supplement 2, Rev. 1, June 1990, and not reducing the power range neutron flux trip setpoint to ≤ 85% has no adverse impact on the remaining OPERABLE power range neutron flux channels maintaining their capability to prevent the core from operating in an overpower condition. While reduction of the trip setpoint would limit the overshoot in a power excursion, maintaining the power range neutron flux trip at its normal setpoint still provides adequate protection in the event of a power excursion. This change is consistent with NUREG-1431.

As required by the NRC Safety Evaluation (dated April 30, 1990) accepting the generic reliability analysis in WCAP-10271-P-A, Supplement 2, Rev.1, CP&L has confirmed that the HBRSEP Unit No. 2 logic design of the affected instrumentation is bounded by that analyzed in the reliability analysis and the conclusions are applicable to the HBRSEP Unit No. 2 design. In addition, CP&L has confirmed that the instrument drift due to extended Surveillance Frequencies, associated with application of the generic reliability analysis to the HBRSEP Unit No. 2 instrumentation, is already properly accounted for in the setpoint calculation methodology.

L9 The CTS is revised to adopt ISTS Specification 3.3.1 Required Action G in the ITS. The CTS has no specific action requirements in the event two Intermediate Range Neutron Flux channels become inoperable when the unit is operating at a THERMAL POWER >P-6 and <P-10. CTS Section 3.0 would therefore be entered, requiring the unit to be in hot shutdown in 8 hours and in cold shutdown within the next 30 hours or the reactor

placed in a non-applicable Mode or condition. ISTS Required Action G requires, under these conditions, that operations involving positive reactivity additions be suspended immediately, and THERMAL POWER be reduced to <P-6 in 2 hours (i.e., placing the plant in a non-applicable condition). Below P-6, ISTS Required Action H.1 requires restoration of two inoperable Intermediate Range Neutron Flux channels prior to increasing power above the P-6 interlock. (The change associated with two inoperable Intermediate Range Neutron Flux channels when below the P-6 interlock is addressed in Discussion of Change L38.) This change is acceptable, however, because with no intermediate range channels OPERABLE, Required Action G.1 is added to immediately suspend operations involving positive reactivity additions. This will preclude any power level increase when the ability to monitor neutron flux is not available (above the P-6 setpoint and below the P-10 setpoint, the intermediate range performs the neutron flux monitoring function). Power must also be reduced below the P-6 setpoint within 2 hours (Required Action G.2). Below P-6, the Source Range Neutron Flux channels (ISTS Table 3.3.1-1 Function 4) are required to be OPERABLE and will be able to monitor neutron flux. Therefore, since adequate neutron flux monitoring capability and trip capability is provided by the Source Range Neutron Flux channels and positive reactivity additions are required to be suspended, it is not necessary to require a plant shutdown in accordance with CTS 3.0. This change is consistent with NUREG-1431.

L10 CTS Table 3.5-2 inoperable channel ACTION for low pressurizer pressure, high pressurizer water level, low reactor coolant flow (single loop and two loops), and 4kV underfrequency provides that operation may proceed until performance of the next required operational test if the inoperable channel is placed in trip in 1 hour. ITS Specification 3.3.1, Required Actions M and N for the same functions, require the inoperable channel be placed in trip in 6 hours or THERMAL POWER is reduced to less than P-7 and P-8, respectively, in 10 hours. This change can be considered a relaxation of requirements due to the additional time permitted to place the inoperable channel in trip and the addition of the option to reduce power to below P-7 as a Required Action, and is less restrictive. This change is acceptable, however, because the 6 hour time to place the inoperable channel in trip is consistent with WCAP-10271-P-A, Supplement 2, Rev. 1, June 1990, and considers the redundant capability provided by the remaining OPERABLE channel, and the unlikelihood of occurrence of an event that may require the protection afforded by the function during this period. Also, reduction of THERMAL POWER below the P-7 setpoint assures that the Function is out of the Applicability for which the Function is required. This change is consistent with NUREG-1431.

As required by the NRC Safety Evaluation (dated April 30, 1990) accepting the generic reliability analysis in WCAP-10271-P-A, Supplement 2, Rev.1, CP&L has confirmed that the HBRSEP Unit No. 2 logic design of the affected instrumentation is bounded by that analyzed in the

reliability analysis and the conclusions are applicable to the HBRSEP Unit No. 2 design. In addition, CP&L has confirmed that the instrument drift due to extended Surveillance Frequencies, associated with application of the generic reliability analysis to the HBRSEP Unit No. 2 instrumentation, is already properly accounted for in the setpoint calculation methodology.

L11 CTS Table 3.5-2 inoperable channel ACTION for turbine trip on auto stop oil pressure and turbine stop valve closure provides that operation may proceed until performance of the next required operational test if the inoperable channel is placed in trip in 1 hour. ITS Specification 3.3.1 inoperable channel ACTION P for the same functions require the inoperable channel be placed in trip in 6 hours or THERMAL POWER is reduced to less than P-7 in 10 hours. This change can be considered a relaxation of requirements due to the additional time permitted to place the inoperable channel in trip, and is less restrictive. This change is acceptable, however, because the 6 hour time to place the inoperable channel in trip is consistent with WCAP-10271-P-A, Supplement 2, Rev. 1, June 1990, and considers the redundant capability provided by the remaining redundant OPERABLE channel, and the unlikelihood of occurrence of an event that may require the protection afforded by the function during this period. This change is consistent with NUREG-1431

As required by the NRC Safety Evaluation (dated April 30, 1990) accepting the generic reliability analysis in WCAP-10271-P-A, Supplement 2, Rev.1, CP&L has confirmed that the HBRSEP Unit No. 2 logic design of the affected instrumentation is bounded by that analyzed in the reliability analysis and the conclusions are applicable to the HBRSEP Unit No. 2 design. In addition, CP&L has confirmed that the instrument drift due to extended Surveillance Frequencies, associated with application of the generic reliability analysis to the HBRSEP Unit No. 2 instrumentation, is already properly accounted for in the setpoint calculation methodology.

L12 CTS Table 3.5-2 Items 13 (4kV Underfrequency) and 14 (4kV Undervoltage) have Applicability Conditions of "Reactor Critical." ITS Table 3.3.1-1 Items 11 (Undervoltage RCPs) and 12 (Underfrequency RCPs) have Applicability in MODE 1, above the P-7 interlock. Since this change narrows the MODE of Applicability, it is a relaxation of requirements and is less restrictive. This change is acceptable, however, because below the P-7 setpoint, all reactor trips on loss of flow are automatically blocked, since no conceivable power distributions could occur that would cause a DNB concern at that low power level. This change is consistent with NUREG-1431.

L13 CTS Table 3.5-3 is revised to add ITS Table 3.3.2-1 Items 1.b, 2.b, 3.a(2), 3.b(2), 4.b and 5.a, and add ACTIONS C and G. These items relate to the Automatic Actuation Logic and Actuation Relays for various ESFAS Functions. The CTS does not explicitly identify the requirement

for OPERABILITY of Automatic Actuation Logic and Actuation Relays. Consequently, inoperability of the Automatic Actuation Logic and Actuation Relays results in entry into CTS Section 3.0 with the requirement to achieve hot shutdown in 8 hours and cold shutdown within an additional 30 hours. The identification of the Automatic Actuation Logic and Actuation Relays within the LCO, and the addition of Required Actions C and G result in a relaxation of requirements by providing an allowed outage time of 12 hours for the Automatic Actuation Logic and Actuation Relays before a shutdown is required. The overall effect of this change is therefore less restrictive. This change is acceptable, however, because the redundant train provides trip capability during the allowed outage time. Also, the 12 hour Completion Time is further justified based on the unlikelihood of an event occurring during this interval. This change is consistent with NUREG-1431.

Due to the plant design, maintenance of a single channel can not be performed without causing all channels of the associated Function to be inoperable. In many cases, maintenance will also cause the associated train to be inoperable. Therefore, ITS 3.3.2 ACTIONS C.1 and G.1 are adopted to permit a single ESFAS instrumentation train to be inoperable for up to 12 hours provided the other train is OPERABLE.

For repair or replacement of Engineered Safeguard System relays and/or test switches, 12 hours has been determined to be a reasonable Completion Time for restoration of the two most frequently occurring types of failures that occur in the HBRSEP Unit No. 2 Engineered Safeguards System. These two failures are 1) failure of a logic or actuation relay, and 2) failure of the test switches used for the performance of the surveillance testing. A failure of either of these items only causes one portion of the Engineered Safeguards System to be inoperable, but due to the wiring configuration of the system (the common side of the relay power source is "daisy chained" together) the entire train must be considered inoperable once maintenance on the failed item has commenced. In addition, with the test switches in "test" during surveillance testing, all channels in an ESFAS Instrumentation Function are rendered inoperable.

The allowed time of 12 hours for inoperability of a single train on an ESFAS instrumentation train is considered to be acceptable based on the fact that the other ESFAS instrumentation train is available to perform the actuation function and the low probability of an event requiring an ESFAS actuation. In addition, the change provides the potential benefit of the avoidance of a plant shutdown transient by providing a time period to perform required surveillance testing or necessary maintenance prior to requiring a plant shutdown.

L14 CTS Table 4.1-1, Item 1 (Nuclear Power Range) and Item 4 (Reactor Coolant Temperature) require channel functional tests be performed on a bi-weekly frequency. ITS SR 3.3.1.7 and SR 3.3.1.8 require performance

of a COT at a Frequency of 92 days. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because the change from a 31 day to 92 day Frequency is consistent with WCAP-10271-P-A, Supplement 2, Rev. 1, June 1990, and the 14 day CTS Frequency is adequately bounded by the analysis of the 31 day Frequency. This change is consistent with NUREG-1431.

As required by the NRC Safety Evaluation (dated April 30, 1990) accepting the generic reliability analysis in WCAP-10271-P-A, Supplement 2, Rev.1, CP&L has confirmed that the HBRSEP Unit No. 2 logic design of the affected instrumentation is bounded by that analyzed in the reliability analysis and the conclusions are applicable to the HBRSEP Unit No. 2 design. In addition, CP&L has confirmed that the instrument drift due to extended Surveillance Frequencies, associated with application of the generic reliability analysis to the HBRSEP Unit No. 2 instrumentation, is already properly accounted for in the setpoint calculation methodology.

L15 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 if the COT has not been performed in the previous 92 days. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because the change from a 7 day to 92 day Frequency is consistent with WCAP-10271-P-A, Supplement 2, Rev. 1, June 1990, and the 7 day CTS Frequency is adequately bounded by the analysis of the 31 day Frequency. This change is consistent with NUREG-1431.

As required by the NRC Safety Evaluation (dated April 30, 1990) accepting the generic reliability analysis in WCAP-10271-P-A, Supplement 2, Rev.1, CP&L has confirmed that the HBRSEP Unit No. 2 logic design of the affected instrumentation is bounded by that analyzed in the reliability analysis and the conclusions are applicable to the HBRSEP Unit No. 2 design. In addition, CP&L has confirmed that the instrument drift due to extended Surveillance Frequencies, associated with application of the generic reliability analysis to the HBRSEP Unit No. 2 instrumentation, is already properly accounted for in the setpoint calculation methodology.

L16 CTS Table 4.1-1, Items 5 (Reactor Coolant Flow), 6 (Pressurizer Water Level), 7 (Pressurizer Pressure), 8 (4kV Voltage), 11 (Steam Generator Level), 39 (Steam/Feedwater Flow Mismatch), and 40 (Low Steam Generator Water Level) require monthly testing. ITS SR 3.3.1.7 and SR 3.3.1.9 and ITS SR 3.3.8.2 are performed on a Frequency of 92 days. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because the change from a 31 day to 92 day Frequency is consistent with WCAP-10271-P-A, Supplement 2, Rev. 1, June 1990. This change is consistent with NUREG-1431.

As required by the NRC Safety Evaluation (dated April 30, 1990) accepting the generic reliability analysis in WCAP-10271-P-A, Supplement 2, Rev.1, CP&L has confirmed that the HBRSEP Unit No. 2 logic design of the affected instrumentation is bounded by that analyzed in the reliability analysis and the conclusions are applicable to the HBRSEP Unit No. 2 design. In addition, CP&L has confirmed that the instrument drift due to extended Surveillance Frequencies, associated with application of the generic reliability analysis to the HBRSEP Unit No. 2 instrumentation, is already properly accounted for in the setpoint calculation methodology.

L17 CTS Table 4.1-1, Item 25, Turbine First Stage Pressure, requires a functional test on a monthly Frequency. ITS SR 3.3.1.13 requires performance of a COT on an 18 month Frequency. This is a relaxation of requirements and is less restrictive. This change is acceptable, however, since the turbine first stage pressure signal is used only during unit startup to feed the P-7 permissive interlock, which bypasses the high pressurizer level, low pressurizer pressure, RCS low flow, and turbine trip reactor trips below 10% RTP, which is an infrequent operation. A review of the surveillance test history was performed to validate that the impact, if any, on system availability is minimal as a result of the change in the surveillance test interval. This review of the surveillance test history, demonstrates that there are no failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to an 18 month surveillance interval. This change is consistent with NUREG-1431.

L18 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 Surveillance Requirements SR 3.3.1.5 and SR 3.3.2.2 require an ACTUATION LOGIC TEST be performed at a Frequency of 31 days on a STAGGERED TEST BASIS. Since each channel will only be tested every 62 days, this is a relaxation of requirements and is less restrictive. This change is acceptable, however, because the Frequency of 31 days on a STAGGERED TEST BASIS is based on industry operating experience, considering instrument reliability and operating history data. A review of the surveillance test history was performed to validate that the impact, if any, on system availability is minimal as a result of the change in the surveillance test interval. This review of the surveillance test history, demonstrates that there are no failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 31 day on a STAGGERED TEST BASIS surveillance interval. As such, the requirement for the source range channels to be tested within 7 days prior to startup is not necessary since the 31 day on a STAGGERED TEST BASIS surveillance test interval and the requirements of ITS SR 3.0.4 are adequate for ensuring the source range channels are maintained OPERABLE

and that the surveillance is current prior to entering into Applicable MODE or specified condition. This change is consistent with NUREG-1431.

L19 CTS Table 4.1-1, Item 30, Reactor Trip Breakers, requires that a functional test be performed on a monthly frequency. ITS SR 3.3.1.4 requires that a TADOT be performed at a Frequency of 31 days on a STAGGERED TEST BASIS. Since each RTB will now be tested every 62 days, this is a relaxation of requirements and is less restrictive. This change is acceptable, however, because the Frequency of 31 days on a STAGGERED TEST BASIS is based on industry operating experience, considering instrument reliability and operating history data. A review of the surveillance test history was performed to validate that the impact, if any, on system availability is minimal as a result of the change in the surveillance test interval. This review of the surveillance test history, demonstrates that there are no failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 31 day on a STAGGERED TEST BASIS surveillance interval. This change is consistent with NUREG-1431.

L20 CTS Table 4.1-1, Item 47, Reactor Trip Bypass Breakers, requires that a functional test be performed at monthly (M) frequency. ITS SR 3.3.1.4 requires that a TADOT be performed prior to placing the bypass breaker in service. Since the bypass breakers are only placed in service when the RTBs are being tested, and each RTB will now be tested every 62 days, this is a relaxation of requirements and is less restrictive. This change is acceptable, however, because the Frequency of 31 days on a STAGGERED TEST BASIS is based on industry operating experience, considering instrument reliability and operating history data. A review of the surveillance test history was performed to validate that the impact, if any, on system availability is minimal as a result of the change in the surveillance test interval. This review of the surveillance test history, demonstrates that there are no failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 31 day on a STAGGERED TEST BASIS surveillance interval. This change is consistent with NUREG-1431.

L21 CTS Table 3.5-3 ACTION 12 permits power operation to continue until performance of the next required operational test, provided the inoperable channel is placed in trip within 1 hour. ITS Specification 3.3.2, Conditions D and E permit power operation to continue provided the inoperable channel is placed in trip in 6 hours. ITS Specification 3.3.2, Conditions C and G permit power operation to continue provided the inoperable channel is restored in 6 hours. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because of redundancy in the instrumentation design (e.g., Conditions C and D generally apply to functions that operate on two-out-of-three logic, and failure of one channel would place the Function in a two-out-of-two configuration. One channel must be tripped to place the Function in a one-out-of-two configuration, which satisfies redundancy

requirements). Also, the 6 hour Completion Time is further justified based on the unlikelihood of an event occurring during this interval. This change is consistent with NUREG-1431.

L22 CTS Table 3.5-5 is revised by adopting ISTS Specification 3.3.3 Conditions A, B, C, and H. This change will require that, with one containment high range radiation monitoring channel inoperable, the channel be restored to OPERABLE status within 30 days, instead of 7. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, considering the low probability of an event requiring use of this Function during this time interval, and there is an installed OPERABLE redundant channel. This change is consistent with NUREG-1431.

L23 CTS Table 3.5-5, Note 1 requires that, if one AFW flow indicator becomes inoperable, it must be restored to OPERABLE status within 7 days. ITS Specification 3.3.3, Required Action A requires an inoperable AFW flow indicator to be restored to OPERABLE status within 30 days. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because the 30 day Completion Time takes into account the remaining OPERABLE channel (or in the case of a Function that has only one required channel, other non-Regulatory Guide 1.97 instrument channels to monitor the Function), the passive nature of the instrument (no critical automatic action is assumed to occur from the instrument), and the low probability of an event requiring PAM instrumentation during this interval.

L24 CTS Table 3.5-5, Note 6, requires that with both containment hydrogen monitoring channels inoperable, and one channel cannot be restored to OPERABLE status within the specified time, the unit be placed in Hot Shutdown within 6 hours and ≤200°F within the following 30 hours. ITS Specification 3.3.3, Required Action E requires under the same conditions, that the unit be placed in MODE 3 within 6 hours, and in MODE 4 within the following 6 hours. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, considering the backup capability of the Post Accident Sampling System to monitor hydrogen concentration for evaluation of core damage and to provide information for operator decisions; and the unlikelihood of an event that would require use of the hydrogen monitors in the interval. This change is consistent with NUREG-1431.

L25 CTS Table 3.5-5, Note 8 requires that the inoperable thermocouples be restored to OPERABLE status within 7 days, or be in Hot Shutdown within the next 12 hours and < 350°F within the next 30 hours. ITS Specification 3.3.3, Required Actions A and B require that the inoperable channel be restored to OPERABLE status within 30 days, or the reporting requirements of ITS Specification 5.6.6 be initiated immediately. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, considering the

unlikelihood of an event occurring in the extended interval, together with a redundant OPERABLE channel available within the same quadrant. This change is consistent with NUREG-1431.

L26 CTS Table 3.5-5, Note 8 requires that at least one thermocouple be restored to OPERABLE status within 48 hours. ITS Specification 3.3.3, Required Action C requires that one inoperable channel be restored to OPERABLE status within 7 days. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, considering the unlikelihood of an event occurring in the extended interval. This change is consistent with NUREG-1431.

L27 CTS Table 4.1-1 requires that the PORV Position Indication, PORV Block Valve Position Indicator, and Safety Relief Valve Position Indicator, Containment Level, Pressure, Hydrogen and Radiation Monitors be tested at an "R" Frequency. ITS Specification 3.3.3 has no such requirement. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because a CHANNEL CALIBRATION is performed on these channels at an 18 month Frequency. The CHANNEL CALIBRATION encompasses all the testing requirements for these Functions, from sensor to indicator. This change is consistent with NUREG-1431.

L28 CTS Table 3.5-3, Functional Unit 3.A, Action 14 requires that, with the number of OPERABLE Loss of Voltage channels one less than the Total Number of channels, the inoperable channel be placed in block within 1 hour and be restored to OPERABLE status within 48 hours, or the reactor be placed in hot shutdown within the next 8 hours and cold shutdown within the following 30 hours.

ITS 3.3.5 ACTION A requires that, if the Loss of Voltage Function has one or more channels per bus inoperable, the inoperable channel(s) must be restored to OPERABLE status in 1 hour. If that Completion Time is not met, the applicable Condition(s) and Required Action(s) for the associated DG made inoperable by the loss of power instrumentation be entered immediately. This is a relaxation of requirements, and is less restrictive.

ITS 3.3.5 Required Action A.1 provides 1 hour, for the condition of one or more inoperable channels of the Loss of Voltage Function, to attempt to evaluate and repair any discovered inoperabilities. This 1 hour time period is considered to be acceptable because it minimizes risk while providing time for restoration or tripping of channels. This 1 hour period is also consistent with the 1 hour time period provided in ITS 3.0.3. The levels of degradation represented by the inoperability of one or more Loss of Voltage channels would be no more severe than the levels of degradation that would require entry into ITS 3.0.3. The change will provide consistency in ACTIONS for this level of degradation.

If a Required Action and associated Completion Time are not met for Loss of Power Instrumentation, ITS 3.3.5 ACTION D requires the affected diesel generators to be declared inoperable immediately and the applicable Required Actions taken for the inoperable diesel generator. Currently, CTS Table 3.5-3 ACTION 14 requires a plant shutdown if the inoperable channel is not restored to OPERABLE status within 48 hours. Since this instrument is the start signal for the DGs (i.e., it supports DG OPERABILITY), the appropriate action would be to declare the DG inoperable. The current requirements are overly restrictive, in that if the diesel were inoperable for other reasons, a 7 day restoration time is provided; yet currently if an instrument is inoperable, for greater than 48 hours, but the diesel is otherwise fully OPERABLE, a shutdown is required.

L29 CTS Table 3.5-3, Functional Unit 3.B, Action 14 requires that, with the number of OPERABLE Degraded Voltage channels one less than the Total Number of channels, the inoperable channel be placed in block within 1 hour and be restored to OPERABLE status within 48 hours, or the reactor be placed in hot shutdown within the next 8 hours and cold shutdown within the following 30 hours.

ITS Specification 3.3.5 requires that, if the Degraded Voltage Function has one channel per bus inoperable, the inoperable channel be placed in trip in 6 hours. If that Completion Time is not met, the applicable Condition(s) and Required Action(s) for the associated DG made inoperable by the loss of power instrumentation be entered immediately. This is a relaxation of requirements, and is less restrictive.

This change is acceptable, however, because there are three Degraded Voltage channels per bus, which are configured in a two-out-of-three logic, such that if any two channels see a degraded voltage condition, they will trip the bus. With one channel placed in a tripped condition, the two OPERABLE channels are still available to trip the bus in a one-out-of-two logic arrangement. The 6 hour Completion Time is acceptable, considering the Function remains OPERABLE on both emergency busses and the low probability of an event occurring during this interval. This change is consistent with NUREG-1431.

If a Required Action and associated Completion Time are not met for Loss of Power Instrumentation, ITS 3.3.5 ACTION D requires the affected diesel generators to be declared inoperable immediately and the applicable Required Actions taken for the inoperable diesel generator. Currently, CTS Table 3.5-3 ACTION 14 requires a plant shutdown if the inoperable channel is not restored to OPERABLE status within 48 hours. Since this instrument is the start signal for the DGs (i.e., it supports DG OPERABILITY), the appropriate action would be to declare the DG inoperable. The current requirements are overly restrictive, in that if the diesel were inoperable for other reasons, a 7 day restoration time is provided; yet currently if an instrument is inoperable, for greater

than 48 hours, but the diesel is otherwise fully OPERABLE, a shutdown is required.

L30 CTS Specification 3.5.1 is revised to adopt the ISTS Specification 3.3.5 "Note" to Required Action B.1 in the ITS. The Note permits an inoperable Degraded Voltage Function channel to be bypassed for up to 4 hours for surveillance testing of other channels. Adoption of this Note constitutes a relaxation of requirements, and is therefore less restrictive. This change is acceptable, however, because there are three Degraded Voltage channels per bus, and this allowance is made where bypassing the channel does not cause an actuation, and where at least two other channels per bus are monitoring the parameter. The Degraded Voltage Function is arranged in a two-out-of-three configuration. Bypassing one channel would still provide a two-out-of-two logic. The time allowed is reasonable, considering the Function remains fully OPERABLE on each bus and the low probability of an event occurring during the interval. This change is consistent with NUREG-1431.

L31 CTS Specification 3.8.1.b requires that the radiation monitors which initiate containment ventilation isolation be tested and verified to be OPERABLE immediately prior to refueling operations. This requirement is not retained in the ITS. This constitutes a relaxation of requirements, and is therefore less restrictive. This change is acceptable, however, because the radiation monitors are demonstrated OPERABLE at a Frequency of 92 days by performance of a CHANNEL OPERATIONAL TEST. The Frequency of 92 days is based on industry operating experience, considering instrument reliability and operating history data. A review of the surveillance test history was performed to validate that the impact, if any, on system availability is minimal as a result of the change in the surveillance test interval. This review of the surveillance test history, demonstrates that there are no failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to a 92 day surveillance interval. This change is consistent with NUREG-1431.

L32 CTS Table 3.4-1, Function 1, requires under certain channel inoperability conditions, that the unit be maintained in hot shutdown. ITS Specification 3.3.8, Required Action C, 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. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because placing the inoperable channel in trip maintains the AFW pump autostart Function OPERABLE, but in a one-out-of-two configuration, instead of two-out-of-three. The allowance of 6 hours to return the channel to OPERABLE status or place it in trip is consistent with WCAP-10271-P-A, Supplement 2, Rev. 1, June 1990. This change is consistent with NUREG-1431.

As required by the NRC Safety Evaluation (dated April 30, 1990) accepting the generic reliability analysis in WCAP-10271-P-A, Supplement 2, Rev.1, CP&L has confirmed that the HBRSEP Unit No. 2 logic design of the affected instrumentation is bounded by that analyzed in the reliability analysis and the conclusions are applicable to the HBRSEP Unit No. 2 design. In addition, CP&L has confirmed that the instrument drift due to extended Surveillance Frequencies, associated with application of the generic reliability analysis to the HBRSEP Unit No. 2 instrumentation, is already properly accounted for in the setpoint calculation methodology.

L33 Not Used.

L34 Not used.

L35 CTS Table Note (*) for Table 3.5.2 are revised to add ". . . , and either rods not fully inserted, or Rod Control System Capable of rod withdrawal," to and is incorporated into ITS Table 3.3.1-1, Note (a). This change reduces of Applicability in MODEs 3, 4, and 5 for Functions 1, 4, 18, 19, and 20 of ITS Table 3.3.1-1. This change relaxes requirements and is less restrictive. This change is acceptable because the remaining Applicability for Functions 1, 4, 18, 19, and 20 ensures that the reactor trip functions will be available when required. With the reactor trip breakers closed and the rods not fully inserted, ITS Table 3.3.1-1 requires that the reactor trip system be OPERABLE for the source range and manual trip functions in MODES 3, 4, and 5. In this condition a shutdown bank may be fully withdrawn and the remaining control rods maintained at 5 steps off the bottom. Under these conditions, control rods may be credited in the Shutdown Margin (SDM). UFSAR Section 15.4.1, "Uncontrolled Rod Cluster Control Assembly Bank Withdrawal From Subcritical or Low Power," analyzes uncontrolled rod withdrawal from MODE 2 conditions. Since MODES 3, 4, and 5 include the requirement for reactivity < .99 k_{eff}, these MODES are bounded by the analysis in UFSAR Section 15.4.1. With the reactor trip breakers closed and the rods capable of withdrawal, ITS Table 3.3.1-1 requires the reactor trip system to be OPERABLE for source range and manual trip functions. In this condition, a malfunction of the rod control system could result in the uncontrolled rod withdrawal event as analyzed in UFSAR Section 15.4.1.

L36 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 does not permit an increase in power level to exit the Applicability of the intermediate range detectors. The Required Action to increase THERMAL POWER to exit the Applicability for the intermediate range detectors is less restrictive. The change is acceptable since the intermediate range detectors are not required to be OPERABLE above P-10 setpoint, and power range instrumentation provides the necessary protection above P-10. This change is consistent with NUREG-1431.

L37 The CTS is revised to adopt ISTS Specification 3.3.1 Required Action O in the ITS. The CTS has no specific action requirements in the event one Reactor Coolant Pump (RCP) breaker position channel is inoperable. CTS Section 3.0 would therefore be entered, requiring the unit to be in hot shutdown in 8 hours, and in cold shutdown within the next 30 hours. ISTS Required Action O requires, under these conditions, that the channel be restored to OPERABLE status within 6 hours, or reduce THERMAL POWER to < P-8 in 10 hours. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because the allowed outage time of 6 hours granted by Required Action O is consistent with WCAP-10271-P-A, Supplement 2, Rev. 1, June 1990; below the P-8 setpoint the RCP breaker position is not required to anticipate the RCS low flow trip to protect against DNB; the probability of an event requiring the Function of RCP breaker position is low during the allowed outage time; and, the most likely event for which the Function would be required is a loss of offsite power which would result in the trip of the remaining two RCPs, giving a signal to the RPS. This change is consistent with NUREG-1431.

As required by the NRC Safety Evaluation (dated April 30, 1990) accepting the generic reliability analysis in WCAP-10271-P-A, Supplement 2, Rev.1, CP&L has confirmed that the HBRSEP Unit No. 2 logic design of the affected instrumentation is bounded by that analyzed in the reliability analysis and the conclusions are applicable to the HBRSEP Unit No. 2 design. In addition, CP&L has confirmed that the instrument drift due to extended Surveillance Frequencies, associated with application of the generic reliability analysis to the HBRSEP Unit No. 2 instrumentation, is already properly accounted for in the setpoint calculation methodology.

L38 CTS Table 3.5-2 requires Action 3 to be taken if one or two Neutron Flux Intermediate Range channels are inoperable. When below the P-6 (Intermediate Range Neutron Flux Interlock) setpoint, the Neutron Flux Intermediate Range channels perform only a neutron flux monitoring function and not a protective function. When below the P-6 setpoint, CTS Table 3.5-2 Action 3a only addresses the condition of one channel inoperable and requires restoration of the inoperable channel prior to increasing power above the P-6 setpoint. As a result, a shutdown in accordance with CTS 3.0 would be required if two Neutron Flux Intermediate Range channels are inoperable. ITS 3.3.1 Condition H

addresses the inoperability of one or two Neutron Flux Intermediate Range channels and ITS 3.3.1 Required Action H.1 requires restoration of the inoperable channels prior to increasing power above the P-6 setpoint. Below the P-6 setpoint, the Neutron Flux Source Range channels perform the neutron flux monitoring and protection functions. Therefore, since adequate neutron flux monitoring capability and trip capability is provided by the Neutron Flux Source Range channels, it is not necessary to require a plant shutdown when two Neutron Flux Intermediate Range channels are inoperable below the P-6 setpoint.

L39 The CTS Table 4.1-1 Item 1 (Nuclear Power Range) monthly calibration requirement is deleted and the existing calibration requirement of once per refueling outage is established as the required Frequency for performance of CHANNEL CALIBRATION for this RPS instrument in ITS SR 3.3.1.11. Therefore, the surveillance test interval of this Surveillance Requirement is being increased from once every month to once every 18 months for a maximum interval of 22.5 months including the 25% grace period.

The subject SR ensures that the RPS Nuclear Power Range instrumentation will function as designed during an analyzed event. Extending the CHANNEL CALIBRATION Frequency is acceptable because the RPS instrumentation is designed to be single failure proof and therefore is highly reliable. Based on the fact that setpoint calculation drift values for these instruments are based on a CHANNEL CALIBRATION frequency of 22.5 months, it is concluded that the planned CHANNEL CALIBRATION interval extension is acceptable.

Therefore, it is concluded that the impact, if any, on system availability is minimal as a result of the change in the surveillance test interval. A review of the surveillance test history was performed to validate the above conclusion. This review of the surveillance test history, demonstrates that there are no failures that would invalidate the conclusion that the impact, if any, on system availability is minimal from a change to an 18 month CHANNEL CALIBRATION frequency.

L40 CTS Table 4.1-1, Items 1 and 4 (Nuclear Power Range and Reactor Coolant Temperature), require calibration of the channels to be performed. CTS Table 4.1-1, Item 3 (Nuclear Source Range) requires testing of the channels to be performed. ITS SR 3.3.1.2 and SR 3.3.1.3 are modified by Notes which state that performance of these Surveillances may be delayed until 12 and 36 hours, respectively, after THERMAL POWER is $\geq$ 15% RTP. ITS SR 3.3.1.6 is modified by a Note which states that performance of this surveillance may be delayed until 24 hours after THERMAL POWER is $\geq$ 50% RTP. This is necessary due to the inaccuracy of the calorimetric at low powers. Therefore, this change provides an allowance to delay performance of the three required surveillances until conditions necessary to perform the surveillances are established while ensuring the surveillances are performed at the earliest reasonable opportunity.

ITS SR 3.3.1.7 is modified by a Note to allow performance of the CHANNEL OPERATIONAL TEST to be delayed until 4 hours after entering MODE 3 from MODE 2. The 4 hour delay allows a normal shutdown to be completed without a required hold on power reduction to perform the testing required by this SR. In addition, performing the CHANNEL OPERATIONAL TEST of the Source Range function prior to entry into the Applicability may increase the probability of an inadvertent reactor trip. This change is considered acceptable based upon the short period of time allowed and the low probability of an event during this time period.

L41 This change adds a Note to the calibration requirement in CTS Table 4.1-1 for Items 1, 2, and 3 (Nuclear Power Range, Nuclear Intermediate Range, and Nuclear Source Range) excluding the neutron detectors from this Surveillance (ITS SR 3.3.1.11). The CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. The test verifies that the channel responds to the measured parameter within the necessary range and accuracy. The neutron detectors are excluded from the CHANNEL CALIBRATION because they are passive devices, with minimal drift, and because of the difficulty of simulating a meaningful signal. This change is consistent with NUREG-1431.

L42 The Applicability of CTS Table 3.5-4 Steam Line Isolation Functions 2.A, 2.B, 2.C, and 2.D are revised in MODES 2 and 3 to not require the OPERABILITY of the Steam Line Isolation Functions when all MSIVS are closed (ITS Table 3.3.2-1 Note (e)). The Steam Line Isolation Functions are provided to isolate the steam lines to provide protection in the event of a Steam Line Break, inside or outside containment. With the MSIVs closed, the function of the instrumentation is satisfied. As a result, with all MSIVs closed, the Function is not required to isolate the steam lines to provide protection in the event of a Steam Line Break, inside or outside containment. In addition, the opening of these valves is a controlled plant evolution which is performed in accordance with administrative controls.

L43 ITS Table 3.3.2-1 Note (f) is added to Function 5.a, Feedwater Isolation - Automatic Actuation Logic and Actuation Relays Function. (The addition of ITS Table 3.3.2-1 Function 5.a is addressed in Discussion of Change L13.) Note (f) allows Function 5.a to not be OPERABLE when the MFIVs, MFRVs, and bypass valves are closed or isolated by a closed manual valve. The Feedwater Isolation Functions are provided to isolate the feedwater lines to mitigate the effects of overfeeding the Steam Generators (SGs) which could result in excessive cooldown of the primary system. With the MFIVs, MFRVs, and bypass valves closed or isolated by a closed manual valve, the function of the instrumentation is satisfied. As a result, with all MFIVs, MFRVs, and bypass valves closed or isolated by a closed manual valve, the Function is not required to isolate the feedwater lines to mitigate the effects of overfeeding the SGs. In addition, the opening of these valves is a controlled plant evolution which is performed in accordance with administrative controls.

L44 CTS Table 3.5-5 Note 5 is changed for the condition of two affected Post Accident Monitoring Function channels monitors inoperable. With two monitors inoperable for 7 days, ITS 3.3.3 Required Action H.1 requires initiation of action in accordance with ITS 5.6.6. ITS 5.6.6 requires initiating the alternate method of monitoring. With two affected channels inoperable, CTS Table 3.5-5 Note 5 requires that if an alternate method of monitoring the affected parameter is not available and implemented with both channels inoperable, then one channel must be restored within 7 days or the plant be placed in Hot Shutdown within 7 days and be $\leq$ 350 F within the following 30 hours. Elimination of the shutdown requirements from CTS 3.5-5 Note 5 when two monitors are inoperable and initiation of the alternate method of monitoring is not established within 7 days is considered acceptable based on the relatively low probability of an event requiring PAM instrumentation, the passive function of the instruments. In addition, if the alternate method of monitoring is not established within the time frame established in ITS 5.6.6, this would constitute a failure to comply with ITS 3.3.3 Required Action H.1 and a shutdown in accordance with ITS LCO 3.0.3 would be required.

L45 CTS Table 4.1-1 Item 32 requires a Channel Functional Test of the Loss of Voltage and Degraded Voltage Instrumentation to be performed once per refueling interval. ITS SR 3.3.5.1 is provided to perform a TRIP ACTUATING DEVICE OPERATIONAL TEST (TADOT) once per 18 months. The CTS Channel Functional Test definition requires injection of a simulated signal into the sensor to verify channel operability, including alarm and/or trip. The TADOT definition does not require injecting a simulated or actual signal into the channel. This change is acceptable since ITS SR 3.3.5.2 requires the performance of a CHANNEL CALIBRATION once per 18 months. The definition of a CHANNEL CALIBRATION requires adjustment of the channel so that it responds within the required range and accuracy and encompasses the required sensor and trip functions. As such, the requirement to test the sensor is adequately addressed by the requirement to perform the CHANNEL CALIBRATION at the same frequency.

L46 If the Containment Ventilation Isolation Phase A Functions are inoperable, ITS 3.3.6 ACTION A requires the containment purge supply and exhaust valves to be immediately closed and maintained closed. Currently, the CTS Table 3.5-4 ACTIONS associated with the Phase A Isolation Functions ultimately require a plant shutdown if the Containment Ventilation Isolation Phase A Functions are inoperable. Since the Function of the ITS 3.3.6 instrumentation is to close the containment purge supply and exhaust valves, the appropriate action would be to close and maintain the containment purge and exhaust valves closed when the associated instrumentation is inoperable. The current requirements are overly restrictive, in that if the containment purge supply and exhaust valves were inoperable for other reasons (other than leakage), closing the affected inoperable valve satisfies the safety function and allows continued plant operation; yet currently if an

instrument is inoperable, but the containment purge and exhaust valves are closed, a shutdown is required.

L47 CTS Table 4.8-1 specifies that a Channel Functional Test be performed for the Auxiliary Feedwater - Trip of Main Feedwater Pumps Function. The CTS definition of Channel Functional Test requires the injection of a simulated signal into the channel. The Note to ITS SR 3.3.8.3 specifies that the test for Function 5 (Trip of Main Feedwater Pumps) be initiated by an "actual or simulated actuation signal." This allows satisfactory actuations for other than Surveillance purposes to be used to fulfill the Surveillance Requirements. OPERABILITY is adequately demonstrated in either case since the Auxiliary Feedwater Actuation equipment cannot discriminate between an "actual" signal or "a test safety injection signal."

L48 CTS Table 4.8-1 Items b and d require a Channel Functional Test of the Auxiliary Feedwater-Undervoltage and Station Blackout Instrumentation to be performed once per refueling interval. ITS SR 3.3.8.3 is provided to perform a TRIP ACTUATING DEVICE OPERATIONAL TEST (TADOT) once per 18 months. The CTS Channel Functional Test definition requires injection of a simulated signal into the sensor to verify channel operability, including alarm and/or trip. The TADOT definition does not require injecting a simulated or actual signal into the channel. This change is acceptable since ITS SR 3.3.8.4 requires the performance of a CHANNEL CALIBRATION once per 18 months. The definition of a CHANNEL CALIBRATION requires adjustment of the channel so that it responds within the required range and accuracy and encompasses the required sensor and trip functions. As such, the requirement to test the sensor is adequately addressed by the requirement to perform the CHANNEL CALIBRATION at the same frequency.

L49 CTS Table 3.5-4 Item 2.C for the Steam Line Isolation - Containment Pressure-High High Function references CTS Table 3.5-3 Item 2.B for requirements. The Applicability of CTS Table 3.5-3 Item 2.B for requirement is MODES 1, 2, 3, and 4. The Applicability of ITS Table 3.3.2-1 Function 4.c, Steam Line Isolation - Containment Pressure-High High, is MODE 1, and MODE 2 and 3 except when all MSIVs are closed. The change to the Applicability requires the Steam Line Isolation Function to be OPERABLE only when the associated supported components (i.e., MSIVs) are required to be OPERABLE. This change is acceptable since the Steam Line Isolation Function serves no purpose when the associated supported features (MSIVs) are not required to be OPERABLE. This change does not impact the ability of the steam line isolation instrumentation to perform its intended function which is to support the MSIVs in the performance of their safety function.

Additionally, this change is consistent with the CTS definition and ITS definition of OPERABILITY requiring the associated steam line isolation instrumentation be OPERABLE when the MSIVs are required to be OPERABLE.

The benefit of not requiring steam line isolation instrumentation to be OPERABLE when the associated supported components (MSIVs) are not required to be OPERABLE is that testing of the steam line isolation instrumentation may be reduced and any needed maintenance may be performed, thereby increasing overall reliability.

L50 CTS Table 3.5-3 does not address the condition of all channels of an ESFAS Instrumentation Function inoperable or a train of ESFAS Instrumentation inoperable. Due to the plant design, surveillance testing of a single channel can not be performed without causing all channels of the associated Function to be inoperable. Therefore, ITS 3.3.2 SURVEILLANCE REQUIREMENTS Note 2 is adopted to delay entering ACTIONS for a single inoperable ESFAS instrumentation train for the purpose of surveillance testing for up to 6 hours provided the redundant train is OPERABLE.

Currently, all Functions of an associated ESFAS train are tested at one time. The procedure for performing testing does not result in the entire train being made inoperable. However, each of the Functions within an ESFAS train are made inoperable for short periods of time until testing of all channels of the associated ESFAS train is completed. In addition, with the test switches in "test" during surveillance testing, all channels in an ESFAS Instrumentation Function are rendered inoperable. Repetitive action entry and exit during testing of the associated ESFAS train, on a per Function basis, represents an unnecessary administrative burden on the plant operations staff and would result in extending the time period required to complete the testing. Therefore, a single time period is provided to cover all testing of the associated ESFAS train.

The change to provide 6 hours for the performance of surveillance testing on an ESFAS instrumentation train is considered to be acceptable based on the fact that the other ESFAS instrumentation train is available to perform the actuation function and the low probability of an event requiring an ESFAS actuation. In addition, the change provides the potential benefit of the avoidance of a plant shutdown transient by providing a time period to perform required surveillance testing prior to requiring a plant shutdown.

L51 CTS Table 4.1-1, Item 18 (Containment Pressure) requires performance of a Channel Functional Test of the containment isolation valve signal at least once per 14 days. ITS SR 3.3.2.4 requires the same testing of the same instrument functions (ITS Table 3.3.2-1 Functions 3.a(3) and 3.b(3)) to be performed on a Frequency of 92 days. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because the change from a 14 day to 92 day Frequency is consistent with WCAP-10271-P-A, Supplement 2, Rev. 1, June 1990. This change is consistent with NUREG-1431.

As required by the NRC Safety Evaluation (dated April 30, 1990) accepting the generic reliability analysis in WCAP-10271-P-A, Supplement 2, Rev.1, CP&L has confirmed that the HBRSEP Unit No. 2 logic design of the affected instrumentation is bounded by that analyzed in the reliability analysis and the conclusions are applicable to the HBRSEP Unit No. 2 design. In addition, CP&L has confirmed that the instrument drift due to extended Surveillance Frequencies, associated with application of the generic reliability analysis to the HBRSEP Unit No. 2 instrumentation, is already properly accounted for in the setpoint calculation methodology.

L52 CTS Table 4.1-1, Item 24 (Steam Generator Pressure) requires performance of a Channel Functional Test of the associated instrumentation at least once per 31 days. ITS SR 3.3.2.4 requires the same testing of the same instrument functions (ITS Table 3.3.2-1 Functions 1.e, 1.g, and 4.e) to be performed on a Frequency of 92 days. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, because the change from a 31 day to 92 day Frequency is consistent with WCAP-10271-P-A, Supplement 2, Rev. 1, June 1990. This change is consistent with NUREG-1431.

As required by the NRC Safety Evaluation (dated April 30, 1990) accepting the generic reliability analysis in WCAP-10271-P-A, Supplement 2, Rev.1, CP&L has confirmed that the HBRSEP Unit No. 2 logic design of the affected instrumentation is bounded by that analyzed in the reliability analysis and the conclusions are applicable to the HBRSEP Unit No. 2 design. In addition, CP&L has confirmed that the instrument drift due to extended Surveillance Frequencies, associated with application of the generic reliability analysis to the HBRSEP Unit No. 2 instrumentation, is already properly accounted for in the setpoint calculation methodology.

RELOCATED SPECIFICATIONS

R1	Table 3.5-5	Item 3	RCS Subcooling Monitor
		Item 7a	Noble Gas Effluent Monitor - Main Steam Line
		Item 7b	Noble Gas Effluent Monitor - Main Vent Stack - High Range
		Item 7b	Noble Gas Effluent Monitor - Main Vent Stack - Mid Range
		Item 7c	Noble Gas Effluent Monitor - Spent Fuel Pit Lower Level - High Range
		Item 12	Reactor Vessel Level Instrumentation System (RVLIS)
		Note 2	
		Note 4	
		Note 7	
	Table 4.1-1	Item 34	RCS Subcooling Monitor
		Item 38a	Noble Gas Effluent Monitor - Main Steam Line
		Item 38b	Noble Gas Effluent Monitor - Main Vent Stack - High Range
		Item 38b	Noble Gas Effluent Monitor - Main Vent Stack - Mid Range
		Item 38c	Noble Gas Effluent Monitor - Spent Fuel Pit Lower Level - High Range
		Item 48	Reactor Vessel Level Instrumentation System (RVLIS)

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.

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. This change increases the time permitted to place an inoperable reactor trip Function channel in trip, and allows unlimited operation in that condition. Placing the channel in trip results in a partial trip condition, requiring only one-out-of-two logic for actuation, and the increased permitted time to place the inoperable channel in trip is consistent with WCAP-10271-P-A, Supplement 2, Rev. 1. 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. This change does not introduce any new modes of operation. This change increases the time permitted to place an inoperable reactor trip Function channel in trip, and allows unlimited operation in that condition. 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?

   This change only extends the allowed time to place an inoperable reactor trip Function channel in trip, and allows unlimited operation in that condition. The extended time is consistent with WCAP-10271-P-A, Supplement 2, Rev. 1. Therefore, this change does not involve a reduction in a margin of safety.

LESS RESTRICTIVE-SPECIFIC CHANGES
<u>("L4" Labeled Comments/Discussions)</u>

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, changes in parameters governing normal plant operation, or methods of operation. This change increases the time permitted to place an inoperable 4kV undervoltage trip Function channel in trip.

The increased time to place the inoperable channel in trip considers the redundant capability provided by the remaining OPERABLE channel, and is consistent with WCAP-10271-P-A, Supplement 2, Rev. 1. 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. This change does not introduce any new modes of 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?

   This change extends the allowed time to place an inoperable channel in trip. The extended time is consistent with WCAP-10271-P-A, Supplement 2, Rev. 1, and considers the redundant undervoltage trip capability provided by the remaining OPERABLE channel. Therefore, this change does not involve a reduction in a margin of safety.

LESS RESTRICTIVE-SPECIFIC CHANGES
("L5" 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, changes in parameters governing normal plant operation, or methods of operation. Both the P-7 and P-10 permissive setpoints are actuated at approximately 10 percent RTP, and with the reactor trip Functions enabled above the P-7 setpoint, the unit is fully protected from high neutron flux condition. 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. This change does not introduce

plant operation, or methods of operation. This change does not introduce any new modes of operation. Therefore, this change does not involve a reduction in a margin of safety.

LESS RESTRICTIVE-SPECIFIC CHANGES
("L13" 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, changes in parameters governing normal plant operation, or methods of operation. The Automatic Actuation Logic and Actuation Relays Functions are required to be OPERABLE for Engineered Safety Features Actuation Systems (ESFAS) to be OPERABLE. This change specifically identifies the OPERABILITY requirement for ESFAS Automatic Actuation Logic and Actuation Relays and provides an allowed outage time of 12 hours. During the allowed outage time, the redundant train of Automatic Actuation Logic and Actuation Relays is available to perform the required function if required. The probability of an event requiring the ESFAS Function during this period is low. 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. This change does not introduce any new modes of 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 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. This change permits an allowed outage time for the Automatic Actuation Logic and Actuation Relays, and this change reduces the implied margin of safety associated with allowance of only a single train of Automatic Actuation Logic and Actuation Relays for 12 hours. The probability of an event requiring the Function during the allowed outage time is low, and the redundant train of Automatic

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. This change does not introduce any new modes of 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 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. This change does not introduce any new modes of operation. Therefore, this change does not involve a reduction in a margin of safety.

LESS RESTRICTIVE-SPECIFIC CHANGES
("L33" Labeled Comments/Discussions)

Not Used.

LESS RESTRICTIVE-SPECIFIC CHANGES
("L34" Labeled Comments/Discussions)

Not used.

LESS RESTRICTIVE-SPECIFIC CHANGES
("L35" 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, changes in parameters governing normal plant operation, or methods of operation. This change reduces the MODE of Applicability for certain functions of the reactor protection system during MODEs 3, 4, and 5. The remaining Applicability for these functions ensures that these Functions will be available to shut down the reactor when required. 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. This change does not introduce any new modes of 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 proposed change does not involve any physical alteration of plant systems, structures or components, changes in parameters governing normal

be OPERABLE when its associated supported components (MSIVs) are not required to be OPERABLE is that testing of the steam line isolation instrumentation may be reduced and any needed maintenance may be performed, thereby increasing overall reliability. As such, this proposed change does not involve a significant reduction in a margin of safety.

LESS RESTRICTIVE-SPECIFIC CHANGES
("L50" 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?

   This change will allow a single ESFAS instrumentation train to be inoperable for the purpose of surveillance testing for up to 6 hours provided the other train is OPERABLE. ESFAS instrumentation is not considered as an initiator of any accidents previously analyzed. Therefore, this change does not significantly increase the probability of a previously analyzed accident. The change to provide 6 hours for the performance surveillance testing on an ESFAS instrumentation train is considered to be acceptable based on the fact that the other ESFAS instrumentation train is available to perform the actuation function. The consequences of an accident occurring during the time allowed by proposed change are the same as the consequences during the shutdown time period currently allowed. In addition, the proposed change will not allow continuous operation in a condition where a single failure will result in a loss of function. Therefore, this change does not significantly increase the consequences of a previously analyzed accident.

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 necessitate a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change ensures the affected instrumentation is capable of performing its function. Therefore, it does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   This change will allow a single ESFAS instrumentation train to be inoperable for the purpose of surveillance testing for up to 6 hours provided the other train is OPERABLE. The time allowed to continue operation with an ESFAS instrumentation train inoperable is relatively

small and the probability of an accident occurring during the 6 hour time period is low. The change to provide 6 hours for the performance maintenance or surveillance testing on an ESFAS instrumentation train is also considered to be acceptable based on the fact that the other ESFAS instrumentation train is available to perform the actuation function. In addition, the change provides the potential benefit of the avoidance of a plant shutdown transient by providing a time period to perform required surveillance testing prior to requiring a plant shutdown. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

LESS RESTRICTIVE-SPECIFIC CHANGES
("L51" 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, changes in parameters governing normal plant operation, or methods of operation. This change reduces the Frequency for performance of a COT on certain Engineered Safety Feature Actuation System Instrumentation Functions from 14 days to 92 days. This change is consistent with WCAP-10271-P-A, Supplement 2, Rev.1. The Surveillance Frequency is not assumed to be an initiator of any accident previously evaluated. 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. This change does not introduce any new modes of operation. The Surveillance Frequency does not affect the possibility of a 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 extends the Frequency of surveillance for the performance of a COT on certain Engineered Safety Feature Actuation System Instrumentation Functions from 14 days to 92 days. The extended time is justified by calculation for a 92 day Frequency in accordance with the

company setpoint methodology procedure. The new Frequency is consistent with the WCAP 10271-P-A surveillance Frequency for this function. Therefore, this change does not involve a significant reduction in a margin of safety.

LESS RESTRICTIVE-SPECIFIC CHANGES
("L52" 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, changes in parameters governing normal plant operation, or methods of operation. This change reduces the Frequency for performance of a COT on certain Engineered Safety Feature Actuation System Instrumentation Functions from 31 days to 92 days. This change is consistent with WCAP-10271-P-A, Supplement 2, Rev.1. The Surveillance Frequency is not assumed to be an initiator of any accident previously evaluated. 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. This change does not introduce any new modes of operation. The Surveillance Frequency does not affect the possibility of a 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 extends the Frequency of surveillance for the performance of a COT on certain Engineered Safety Feature Actuation System Instrumentation Functions from 31 days to 92 days. The extended time is justified by calculation for a 92 day Frequency in accordance with the company setpoint methodology procedure. The new Frequency is consistent with the WCAP 10271-P-A surveillance Frequency for this function. Therefore, this change does not involve a significant reduction in a margin of safety.

RELOCATED CHANGES
("R" Labeled Comments/Discussions)

Relocating Requirements which do not meet the Technical Specification criteria to documents with an established control program allows the Technical Specifications to be reserved only for those conditions or limitations upon reactor operation which are necessary to adequately limit the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety, thereby focusing the scope of Technical Specifications.

Therefore, requirements which do not meet the Technical Specification criteria in the NRC Final Policy Statement on Technical Specification Improvement for Nuclear Power Reactors (58 FR 39132, dated 7/22/93) have been relocated to licensee controlled documents. This policy statement addresses the scope and purpose of Technical Specifications. In doing so, it establishes a specific set of objective criteria for determining which regulatory requirements and operating restrictions should be included in Technical Specifications. These criteria are as follows:

Criterion 1: Installed instrumentation that is used to detect and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary;

Criterion 2: A process variable that is an initial condition of a design basis accident (DBA) or transient analyses that either assumes the failure of or presents a challenge to the integrity of a fission product barrier;

Criterion 3: A structure, system or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission barrier;

Criterion 4: A structure, system or component which operating experience or probabilistic safety assessment has shown to be significant to public health and safety.

The application of these criteria is provided in the "Application of Screening Criteria to the HBRSEP Unit No. 2 Technical Specifications." Requirements which met the criteria have been included in the proposed improved Technical Specifications. Carolina Power & Light (CP&L) proposes to remove the requirements which do not meet the criteria from the Technical Specifications and relocate the requirements to a suitable owner controlled document. The requirements in the relocated Specifications are not affected by this Technical Specification change. CP&L will initially continue to perform the required operation and maintenance to assure that the requirements are satisfied. Relocating specific requirements for systems or variables has no impact on the system's operability or the variable's maintenance, as applicable.

Licensee controlled programs will be utilized as the control mechanism for the relocated Specifications as they will be placed in plant procedures or other licensee controlled documents. CP&L is allowed to make changes to these requirements, without prior NRC approval, if the change does not involve an unreviewed safety question. These controls are considered adequate for assuring structures, systems and components in the relocated Specifications are maintained operable and variables in the relocated Specifications are maintained within limits.

Carolina Power & Light Company has evaluated each of the proposed Technical Specification changes identified as "Relocated" and has concluded that they do 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 proposed changes do 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 relocates requirements and surveillances for structures, systems, components or variables which did not meet the criteria for inclusion in Technical Specifications as identified in the "Application of Selection Criteria to the HBRSEP Unit No. 2 Technical Specifications." The affected structures, systems, components or variables are not assumed to be initiators of analyzed events and are not assumed to mitigate accident or transient events. The requirements and surveillances for these affected structures, systems, components or variables will be relocated from the Technical Specifications to an appropriate administratively controlled document under licensee control. 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 necessitate a physical alteration of the plant (no new or different type of equipment will be installed) or change in parameters governing normal plant operation. The proposed change will not impose any different requirements and adequate control of information will be maintained. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   The proposed change will not reduce a margin of safety because it has no impact on any safety analysis assumptions. In addition, the affected requirement will be relocated to an owner controlled document for which future changes will be evaluated pursuant to the requirements of licensee controlled programs. Therefore, this change does not involve a reduction in a margin of safety.

Table 3.3.1-1 (page 3 of 8)
Reactor Trip System Instrumentation (Protection)

CTS

CTS		FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	TRIP SETPOINT(a)
[2.3.1.2.c] [T3.5-2(7)] [T4.1-1(7)]	7	Pressurizer Pressure						
		a. Low	1(f)	3	M	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ [illegible] psig (1832.02)	≥ [illegible] psig (1844)
[2.3.1.2.b] [T3.5-2(8)] [T4.1-1(7)]		b. High	1,2	3	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≤ [illegible] psig (2381.11)	≤ [illegible] psig (2376)
[2.3.1.3.a] [T3.5-2(9)] [T4.1-1(6)]	8	Pressurizer Water Level – High	1(f)	3	M	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10	≤ [illegible]% (91.64)	≤ [illegible]% (91)
[2.3.1.2.f] [T3.5-2(10)] [T4.1-1(5)]	9	Reactor Coolant Flow – Low						
		a. Single Loop	1(g)	3 per loop	M	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ [illegible]% (93.47)	≥ [90]% (94.26)
		b. Two Loops	1(h)	3 per loop	M	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 SR 3.3.1.16	≥ [illegible]%	≥ [90]%

(continued)

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

(g) Above the P-7 (Low Power Reactor Trips Block) interlock.

(h) Above the P-8 (Power Range Neutron Flux) interlock.

(i) Above the P-7 (Low Power Reactor Trips Block) interlock and below the P-8 (Power Range Neutron Flux) interlock.

INSERT 3.3.1-2 (10)

1

CTS [3.5-2]

ITS Insert 3.3.1-2 (RPS Instrumentation)

[*] (a) Reviewer's Note: Unit specific implementations may contain only Allowable Value depending on Setpoint Study methodology used by the unit. 16

[**] (b) With Reactor Trip Breakers (RTBs) closed, and Rod Control System capable of rod withdrawal. either rods not fully inserted, or 17

[A30] (c) Below the P-10 (Power Range Neutron Flux) interlocks.

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

[A31] (e) Below the P-6 (Intermediate Range Neutron Flux) interlocks.

[****] [2.3.2.1] (f) With the RTBs open. In this condition, source range Function does not provide reactor trip but does provide [input to the Boron Dilution Protection System (LCO 3.3.9), and] indication and alarm 18

[M50] (g) Above the P-7 (Low Power Reactor Trips Block) interlock.

[2.3.2.1] [****] (h) Above the P-8 (Power Range Neutron Flux) interlock.

(i) Above the P-7 (Low Power Reactor Trips Block) interlock and below the P-8 (Power Range Neutron Flux) interlock.

(j) Above the P-9 (Power Range Neutron Flux) interlock. 13

[A32] (k) Including any reactor trip bypass breakers that are racked in and closed for bypassing an RTB.

CTS

3.3 INSTRUMENTATION

1

3.3.2 Engineered Safety Feature Actuation System (ESFAS) Instrumentation

[3.5.1.1] LCO 3.3.2 The ESFAS instrumentation for each Function in Table 3.3.2-1 shall be OPERABLE.

[3.5.1.2] APPLICABILITY: According to Table 3.3.2-1.

ACTIONS

[A5]

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
[3.5.1.2] [3.5.1.5] A. One or more Functions with one or more required channels or trains inoperable.	A.1 Enter the Condition referenced in Table 3.3.2-1 for the channel(s) or train(s).	Immediately
[T 3.5-3 ACTION 11] B. One channel or train inoperable.	B.1 Restore channel or train to OPERABLE status.	48 hours
	OR	
	B.2.1 Be in MODE 3.	54 hours
	AND	
	B.2.2 Be in MODE 5.	84 hours

(continued)

Supplement 7

<u>ITS Insert 3.3.2-1</u> (ESFAS Instrumentation)

Not used.

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
[L13] C. One train inoperable.	C.1 --------NOTE-------- One train may be bypassed for up to [4] hours for surveillance testing provided the other train is OPERABLE. ------------------ (19)	
	Restore train to OPERABLE status.	~~6~~ 12 hours (19)
	OR	
	C.2.1 Be in MODE 3.	~~12~~ 18 hours
	AND	
	C.2.2 Be in MODE 5.	~~42~~ 48 hours
[T 3.5-3 ACTION 12] D. One channel inoperable.	D.1 --------NOTE-------- The inoperable channel may be bypassed for up to [4] hours for surveillance testing of other channels. ------------------ (19)	
	Place channel in trip.	6 hours
	OR	
	D.2.1 Be in MODE 3.	12 hours
	AND	
	D.2.2 Be in MODE 4.	18 hours

(continued)

Supplement 7

CTS [L13]

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
G. One train inoperable.	G.1	--------NOTE-------- One train may be bypassed for up to [4] hours for surveillance testing provided the other train is OPERABLE. -------------------- Restore train to OPERABLE status.	12 ~~6~~ hours
	OR		
	G.2.1	Be in MODE 3.	18 ~~12~~ hours
	AND		
	G.2.2	Be in MODE 4.	24 ~~18~~ hours
H. One train inoperable.	H.1	--------NOTE-------- One train may be bypassed for up to [4] hours for surveillance testing provided the other train is OPERABLE. -------------------- Restore train to OPERABLE status.	6 hours
	OR		
	H.2	Be in MODE 3.	12 hours

(continued)

CTS

① ↓

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
[T 3.5-1(6)] [T4.1-1(32)]	SR 3.3.5.[3] ② Perform CHANNEL CALIBRATION with [setpoint Allowable Value] [Trip Setpoint and Allowable Value] as follows: (tolerances) a. Loss of voltage Allowable Value ≥ [2912] V with a time delay of [0.8] ± [ ] second. (328 V ± 10%; Setpoint tolerance of ≤ 1 second (at zero voltage).) Loss of voltage Trip Setpoint ≥ [2975] V with a time delay of [0.8] ± [ ] second. b. Degraded voltage Allowable Value ≥ [3683] V with a time delay of [20] ± [ ] seconds. (430 V ± 4; 10; 0.5; Setpoint tolerance of) Degraded voltage Trip Setpoint ≥ [3746] V with a time delay of [20] ± [ ] seconds.	[18] months

Supplement 7

APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS

CTS

58 → 1

Table 3.3.6-1 (page 1 of 1)
Containment Purge and Exhaust (Ventilation) Isolation Instrumentation

CTS	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	TRIP SETPOINT
[T 3.5-4(c.iii)] [M 41]	1. Manual Initiation	1,2,3,4 (a),(b),(c)	2	SR 3.3.6.6	NA
	2. Automatic Actuation Logic and Actuation Relays	1,2,3,4 (a),(b),(c)	2 trains	SR 3.3.6.2 SR 3.3.6.3 SR 3.3.6.5	NA
	3. Containment Radiation				
[T 3.5-4(c.i)] [T 3.5-1(7)]	a. Gaseous	(a),(b),(c)	[1]	SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.7	~~≤ [2 x background]~~ (d)
[T 3.5-4(c.ii)] [T 3.5-1(7)]	b. Particulate	(a),(b),(c)	[1]	SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.7	~~≤ [2 x background]~~ (d)
	~~c. Iodine~~		~~[1]~~	~~SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.7~~	~~≤ [2 x background]~~
	~~d. Area Radiation~~		~~[1]~~	~~SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.7~~	~~≤ [2 x background]~~
[T 3.5-3(1)]	4. ~~Containment Isolation - Phase A~~ Safety Injection	Refer to LCO 3.3.2, "ESFAS Instrumentation," ~~Function 3.a.~~ Functions 1a-f for all initiation functions and requirements.			

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(a) During CORE ALTERATIONS.

(b) During movement of irradiated fuel assemblies within containment.

(c) During Purging.

(d) Trip Setpoint shall be in accordance with the methodology in the Offsite Dose Calculation Manual. 61

CTS

1

3.3 INSTRUMENTATION

[M43]

3.3.7 Control Room Emergency Filtration System (CREFS) Actuation Instrumentation

[M43] LCO 3.3.7 The CREFS actuation instrumentation for each Function in Table 3.3.7-1 shall be OPERABLE.

[M43] APPLICABILITY: MODES 1, 2, 3, 4, [5, and 6,]
During movement of irradiated fuel assemblies.
[During CORE ALTERATIONS].

[M43] ACTIONS

[M43]
-------------------------------------NOTE-------------------------------------
Separate Condition entry is allowed for each Function.

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CONDITION	REQUIRED ACTION	COMPLETION TIME
[M43] A. One or more Functions with one channel or train inoperable. (Automatic Actuation)	A.1 --------NOTE-------- Place in toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable. ---------------------- Place one CREFS train in emergency [radiation protection] mode. (pressurization)	7 days

(continued)

Supplement 7

Insert 3.3-5A

Not Used

CTS

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME
[M43]	B. One or more Functions with two channels or two trains inoperable. (automatic actuation) OR One radiation monitoring channel inoperable.	-----NOTE----- Place in the toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable. -----	
		B.1.1 Place one CREFS train in emergency [radiation protection] (pressurization) mode.	Immediately
		AND	
		B.1.2 Enter applicable Conditions and Required Actions for one CREFS train made inoperable by inoperable CREFS actuation instrumentation.	Immediately
		OR	
		B.2 Place both trains in emergency [radiation protection] mode.	Immediately
[M43]	C. Required Action and associated Completion Time for Condition A or B not met in MODE 1, 2, 3, or 4.	C.1 Be in MODE 3.	6 hours
		AND	
		C.2 Be in MODE 5.	36 hours

1 52 53

(continued)

CTS

[A20] [T3.4-1(*)] [A5] [3.4.6] [T3.4-1 Note 1] [M48]

3.3.8 Auxiliary Feedwater (AFW) System Instrumentation

LCO 3.3.8 The AFW instrumentation for each Function in Table 3.3.8-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.8-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one or more required channels inoperable.	A.1 Enter the Condition referenced in Table 3.3.8-1 for the channel(s) or train(s).	Immediately
B. One channel inoperable.	B.1 Place channel in trip.	4 hours
	OR	
	B.2.1 Be in MODE 3.	10 hours
	AND	
	B.2.2 Be in MODE 4.	16 hours

(continued)

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
[T 3.4-1(1)] [M 48] C. One channel inoperable.	C.1 Place channel in trip.	6 hours
	OR	
	C.2.1 Be in MODE 3.	12 hours
	AND	
	C.2.2 Be in MODE 4.	18 hours
[T 3.4-1 Note 2] D. One channel inoperable.	D.1 Restore channel or train to OPERABLE status.	48 hours
	OR	
	D.2.1 Be in MODE 3.	54 hours
	AND	
	D.2.2 Be in MODE 4.	60 hours
[T 3.4-1 Note 2] E. One Main Feedwater Pumps trip channel inoperable.	E.1 Restore channel to OPERABLE status.	48 hours
	OR	
	E.2 Be in MODE 3.	54 hours

CTS

Table 3.3.8-1 (page 1 of 1)
Auxiliary Feedwater System Instrumentation

CTS [M49]	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE (a)	TRIP SETPOINT
[T 3.4-1(1)] [T 3.4-2(a)] [T 4.8-1(a)]	1. SG Water Level-Low Low	1,2,3	3 per SG	C	SR 3.3.8.1 SR 3.3.8.2 SR 3.3.8.4	≥ 15.36 %	≥ 16%
[T 3.4-1(3) T 3.4-2(c) T 4.8-1(c)]	2. Safety Injection	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 1, for all initiation functions and requirements.					
[T3.4-1(4) T3.4-2(d) T4.8-1(d)]	3. Loss of Offsite Power	1,2,3	2 per bus	D	SR 3.3.8.3 SR 3.3.8.4	328 V ± 10% with ≤ 1 sec time delay	328 V with ≤ 1sec time delay
[T 3.4-1(2) T 3.4-2(b) T4.8-1(b)]	4. Undervoltage Reactor Coolant Pump	1,2,3	2 per bus	B	SR 3.3.8.3 SR 3.3.8.4	≥ 2959 V	≥ 3120 V
[T3.4-1(5) T4.8-1(e)]	5. Trip of all Main Feedwater Pumps	1,2	1 per pump	E	SR 3.3.8.3	NA	NA

(a) For Function 3, "Loss of Offsite Power," the value is a setpoint tolerance.

switch). Replacement of the test switches and/or relays requires marking, removal, and reinstallation of numerous individual wiring connections in a confined area. All connections are independently verified before the system testing is performed.

T=11 Post maintenance testing completed and reviewed. Operations notified that the testing is complete.

T=12 The bypass breaker is removed, system declared OPERABLE, and returned to service.

5 ITS SR 3.3.1.10 "Note" is modified to clarify that only those functions with electronic dynamic compensation should have their time constants adjusted to the prescribed values. Not all functions to which SR 3.3.1.10 is Applicable are equipped with dynamic compensation.

6 ITS SR 3.3.1.12 "Note" is modified to reflect that plant design basis does not include bypass loops for RTDs, but instead requires that electronic dynamic compensation time constants be set at required values (as stated in Note 1 and Note 2 to Table 3.3.1-1), and that RTD response time constants be verified.

7 ITS SR 3.3.1.16 and SR 3.3.2.10 are not adopted. Consistent with current licensing basis, response time testing of RTS and ESFAS circuitry is not performed. Plant equipment does not readily lend itself to such testing.

8 Not used.

9 ITS Table 3.3.1-1, Function 3, Power Range Neutron Flux Rate (High Positive Rate and High Negative Rate) trips, are not part of the plant design, and therefore are not adopted in the ITS. Subsequent Functions are renumbered accordingly.

10 ITS Table 3.3.1-1 and Table 3.3.2-1 footnotes are modified in manner of presentation in the ITS for improved human factors considerations, such that all footnotes appear on each page of the Table.

11 ITS SR 3.3.1.3 and SR 3.3.1.6 are added to the Overpower ΔT Function in ITS Table 3.3.1-1. These SRs are incorporated because the plant design basis is such that the Overpower ΔT Function setpoint is penalized by the axial delta flux when the flux exceeds its limits.

12 ITS Table 3.3.1-1, Item 15, Turbine Trip. "Required Channels" is revised from 4 to 2, because two channels of turbine stop valve position are provided as input to the RPS. Surveillance Requirement SR 3.3.1.10 (CHANNEL CALIBRATION) is not adopted in the ITS for the Turbine Stop Valve Closure Function input to the RPS, because the stop valve position is monitored by limit switches on the stop valve which are tested in SR

3.3.1.15 (TADOT). The Allowable Value and Trip Setpoint are revised to "NA," because it is not possible to calibrate the valve position due to stop valve and position indication design.

13 ITS Table 3.3.1-1, Item 18.d, Power Range Neutron Flux (P-9), is not adopted. The P-9 interlock is not used; rather the P-7 interlock is used to automatically activate and deactivate the high power trips. Footnote (j) is also deleted. Subsequent functions are renumbered accordingly.

14 ITS Table 3.3.1-1, Item 18.e, Turbine Impulse Pressure (P-13) terminology is changed to "Turbine Impulse Pressure, P-7 input." Turbine impulse pressure input to P-7 is not referred to as P-13.

15 ITS Table 3.3.1-1, Note 1 and Note 2, Overtemperature ΔT and Overpower ΔT, are modified to reflect the plant specific algorithm for determining the Overtemperature ΔT and Overpower ΔT setpoints from plant input parameters.

16 ITS Table 3.3.1-1 and Table 3.3.2-1: "Reviewer's Note," and references to the "Reviewer's Note," are not adopted. Subsequent notes are renumbered accordingly. In addition, since τ_3 is utilized in the plant specific algorithm different than τ_3 is utilized in the ISTS Table 3.3.1-1 algorithm, τ_3 is modified to "≥" which is consistent with the plant specific analysis associated with RPS time constants.

17 ITS Table 3.3.1-1, footnote (a), is modified by inserting the phrase, "... , and either rods not fully inserted, or ..." When the reactor trip breakers are closed and shutdown bank(s) are withdrawn, then these rods are credited as part of the shutdown margin and safety analyses as discussed in UFSAR Section 15.7.1. Because they are credited in the shutdown margin as being "trippable," it follows that those Functions necessary for manual or automatic tripping of the reactor be operable when the rods are not fully inserted, or are capable of being withdrawn. The continuous rod withdrawal accident is not the only reactivity transient of concern during MODES 3, 4, and 5. Steam line break and boron dilution accidents are also mitigated by the RPS when shutdown or control banks are withdrawn. The Note ensures that the RPS is operable in the condition that a shutdown bank is fully withdrawn (i.e., not capable of withdrawal) and the shutdown bank is credited for SDM.

18 ITS Table 3.3.1-1, footnote (e), is modified by acknowledging the high neutron flux at shutdown alarm function provided by the source range instrumentation. This reference is added because of the importance of this alarm when the reactor trip breakers are open.

19 ISTS 3.3.2, "Notes" in ACTIONS C, D, and G are not adopted. Due to the plant design, maintenance or surveillance testing of a single channel can not be performed without causing all channels of the associated

Function to be inoperable. In many cases, maintenance or surveillance testing will also cause the associated train to be inoperable. Therefore, the allowed outage time for ACTION C.1 and ACTION G.1 are changed to 12 hours to allow for required maintenance, and a second SURVEILLANCE REQUIREMENTS "Note" is adopted to delay entry into ACTIONS for a single inoperable train for the purpose of testing for up to 6 hours provided the other train is OPERABLE.

For repair or replacement of Engineered Safeguard System relays and/or test switches, the following timeline provides a listing of the necessary evolutions and completion times for the most frequently occuring types of failures that occur in the Engineered Safeguards System and demonstrates the need for the 12 hour allowance. These two failures are 1) failure of a logic or actuation relay, and 2) failure of the test switches used for the performance of the surveillance testing. A failure of either of these items only causes one portion of the Engineered Safeguards System (the common side of the relay power source is "daisy chained" together) the entire train must be considered inoperable once maintenance on the failed item has commenced. The difference in allowed time for maintenance between the HBRSEP Unit No. 2 Engineered Safeguards System and plants of a later vintage is the fact that all of the relays and test switches in the HBRSEP Unit No. 2 Engineered Safeguards System are "hard wired" into the system and require de-termination and re-termination of multiple connections to complete the replacement. These connections must be completed in a confined space using the utmost caution, with all wiring being independently verified. Later vintage plants have systems that use "plug-in" components that require a minimal effort and time to be replaced.

TIME (hours)

T=0 The failed component is identified. Operations and management are informed so that any applicable regulatory requirements can be met.

T=0.5 An Action Request (AR) is generated and the Operations Work Control Group is notified of the equipment problem.

T=1.5 The Work Control Group completes a review of other "in progress" work and a risk assessment is performed based on plant conditions per plant procedures. When these reviews are completed, the AR is approved and a Work Request/Job Order (WR/JO) number is assigned. The approved WR/JO is then forwarded to the Maintenance Planners for processing.

T=3.5 The Maintenance Planners determine the scope of work, parts availability, reference materials, and testing requirements for the corrective maintenance. This information is assembled into a

coil continuity is tested as part of the ACTUATION LOGIC TEST, but that is the extent of on-line testing that can be performed routinely on these items. Therefore, the response to a simulated or actual initiation signal in the associated support system Surveillance Requirements at a Frequency of 18 months.

51 Not used.

52 ISTS 3.3.7 Condition A, is modified to refer to Automatic Actuation. Automatic Actuation is the only CREFS actuation Function that has two channels. The only other actuation Function is the Control Room Radiation Monitor channel R-1, which is non-redundant and feeds an actuation signal to both Automatic Actuation trains.

ISTS 3.3.7 Condition B and Table 3.3.7-1 are modified to reflect HBRSEP Unit No. 2 Control Room Emergency Filtration System (CREFS) Actuation Instrumentation design. The HBRSEP Unit No. 2 design for CREFS Actuation Instrumentation only includes one control room radiation monitor. As a result, ISTS 3.3.7 Condition B and Table 3.3.7-1 Function 3.a are revised and ISTS Table 3.3.7-1 Function 3.b are deleted to reflect this design. In addition, the setpoint for the control room radiation monitor is revised to reflect the plant specific setpoint.

53 ISTS Specification 3.3.7, Required Actions B.1.2 and B.2 are not adopted in ITS. When the CREFS Actuation System is placed in emergency pressurization mode, the system will swap to the opposite train should power be lost to the operating train. Therefore, retention of the ISTS required action to enter the applicable Conditions and Required Actions for one CREFS train made inoperable by the inoperable CREFS actuation train is not necessary. By virtue of the design, only one train of CREFS operates at a time, therefore, retention of ISTS Required Action B.2 is not necessary.

54 Not used.

55 ISTS SR 3.3.7.6 is not adopted. Plant design basis does not include a specific Manual Isolation Function, and therefore, there is no Function on which to perform a TADOT. The subsequent SR is renumbered accordingly.

The Frequency for performing ITS SR 3.3.7.4 and SR 3.3.7.5 is changed to 18 months. Plant design basis does not include the capability to perform on-line testing of the Master and Slave Relays. Master Relay

coil continuity is tested as part of the ACTUATION LOGIC TEST, but that is the extent of on-line testing that can be performed routinely on these items. Therefore, the Master and Slave Relays are tested during the supported equipment response to a simulated or actual initiation signal in the associated support system Surveillance Requirements at a Frequency of 18 months.

56 ISTS Specification 3.3.8 is not adopted in the ITS. The Fuel Handling Building Ventilation System design does not include any manual or automatic actuation logic. The system is manually started under administrative control.

57 ISTS Specification 3.3.9 is not adopted in the ITS. Plant design does not include a Boron Dilution Protection System.

58 ITS Specification 3.3.6 is modified to be consistent with the current licensing and design basis as reflected in CTS Table 3.5-4 including the addition of an Applicability column to ISTS Table 3.3.6-1. Actuation on a high radiation signal from the R-11 and R-12 containment monitors is required during purging in accordance with the current licensing basis. Actuation on a high radiation signal from the R-11 or R-12 containment monitors is required during CORE ALTERATIONS and during movement of irradiated fuel assemblies within containment because credit is taken for these instruments in the fuel handling accident. ITS Required Action A.2 requires entry into LCO 3.9.3, "Containment Penetrations," to take Required Actions associated with CORE ALTERATIONS and movement of irradiated fuel. The Applicability of the other Functions of ITS Table 3.3.6-1 are maintained consistent with current licensing basis.

The use of the phrase "During Purging" is added to ISTS Table 3.3.6-1 Functions 1, 2, 3.a, and 3.b consistent with the current licensing basis. CTS Table 3.5-4 Item 1.C, Containment Ventilation Isolation Instrumentation, applies to radiation monitoring instrumentation which isolates the containment purge supply and exhaust valves. (The ISTS 3.3.6 reference to "containment purge and exhaust valves" is revised in ITS 3.3.6 to "containment purge supply and exhaust valves" to be consistent with plant specific nomenclature. The reference to the title of the ISTS 3.3.6, Containment Purge and Exhaust Isolation Instrumentation, is also revised to be ITS 3.3.6, Containment Ventilation Isolation Instrumentation, to be consistent with plant specific nomenclature.) The requirements of ITS 3.3.6 are derived from the requirements of CTS Table 3.5-4 Item 1.C. The current plant interpretation is that the function of this instrumentation in CTS Table 3.5-4 Item 1.C is to isolate the containment purge supply and exhaust valves. Normally, these valves are maintained in the closed position as required by ITS SR 3.6.3.1. The only time these valves are open is "During Purging." With these valves in the closed position, the function of the containment ventilation isolation instrumentation is satisfied. Therefore, there is no need for this instrumentation to be

is the appropriate surveillance requirement. A generic change has been submitted.

66 ISTS Note 2 to SR 3.3.1.3 is modified to allow 36 hours before SR 3.3.1.3 is required to be performed. Based upon previous plant experience this amount of time is necessary before the NI channels can be adjusted in accordance with the results of a flux map. An approximate time line follows:

TIME (hours)

T=0 Plant power is raised above 15% RTP.

T=7 Plant is stable enough to commence a flux map.

T=10 Flux map is completed.

T=12 The flux map is processed and evaluated to determine that the NI channels are required to be adjusted.

T=17 The flux map(s) for incore/excore calibration is performed.

T=19 Flux map(s) for incore/excore calibration are processed and evaluated.

T=21 I&C Planners have converted incore/excore data into calibration sheets.

T=35 I&C Maintenance technicians install incore/excore calibration.

67 Not used.

B 3.3 INSTRUMENTATION

B 3.3.1 Reactor Trip Protection System (RTS RPS) Instrumentation

BASES

BACKGROUND

The RTS RPS initiates a unit shutdown, based on the values of selected unit parameters, to protect against violating the core fuel design limits and Reactor Coolant System (RCS) pressure boundary during anticipated operational occurrences (AOOs) and to assist the Engineered Safety Features (ESF) Systems in mitigating accidents.

The protection and monitoring systems have been designed to assure safe operation of the reactor. This is achieved by specifying limiting safety system settings (LSSS) in terms of parameters directly monitored by the RTS RPS, as well as specifying LCOs on other reactor system parameters and equipment performance.

The LSSS, defined in this specification as the Trip Setpoints Allowable Values, in conjunction with the LCOs, establish the threshold for protective system action to prevent exceeding acceptable limits during Design Basis Accidents (DBAs).

During AOOs, which are those events expected to occur one or more times during the unit life, the acceptable limits are:

1. The Departure from Nucleate Boiling Ratio (DNBR) shall be maintained above the Safety Limit (SL) value to prevent departure from nucleate boiling (DNB);

2. Fuel centerline melt shall not occur; and

3. The RCS pressure SL of 2750 psia 2735 psig shall not be exceeded.

Operation within the SLs of Specification 2.0, "Safety Limits (SLs)," also maintains the above values and assures that offsite dose will be within the 10 CFR 50 and 10 CFR 100 criteria during AOOs.

Accidents are events that are analyzed even though they are not expected to occur during the unit life. The acceptable limit during accidents is that offsite dose shall be maintained within an acceptable fraction of 10 CFR 100 limits. Different accident categories are allowed a

(continued)

BASES

BACKGROUND

Trip Setpoints and Allowable Values (continued)

Setpoints in accordance with the Allowable Value ensure that SLs are not violated during AOOs (and that the consequences of DBAs will be acceptable, providing the unit is operated from within the LCOs at the onset of the AOO or DBA and the equipment functions as designed). Note that in the accompanying LCO 3.3.1, the Trip Setpoints of Table 3.3.1-1 are the LSSS.

Each channel of the process control equipment can be tested on line to verify that the signal or setpoint accuracy is within the specified allowance requirements of Reference 2. Once a designated channel is taken out of service for testing, a simulated signal is injected in place of the field instrument signal. The process equipment for the channel in test is then tested, verified, and calibrated. SRs for the channels are specified in the SRs section.

The Trip Setpoints and Allowable Values listed in Table 3.3.1-1 are based on the methodology described in Reference 6, which incorporates all of the known uncertainties applicable for each channel. The magnitudes of these uncertainties are factored into the determination of each Trip Setpoint. All field sensors and signal processing equipment for these channels are assumed to operate within the allowances of these uncertainty magnitudes.

Solid State Protection System

The SSPS equipment is used for the decision logic processing of outputs from the signal processing equipment bistables. To meet the redundancy requirements, two trains of SSPS, each performing the same functions, are provided. If one train is taken out of service for maintenance or test purposes, the second train will provide reactor trip and/or ESF actuation for the unit. If both trains are taken out of service or placed in test, a reactor trip will result. Each train is packaged in its own cabinet for physical and electrical separation to satisfy separation and independence requirements. The system has been designed to trip in the event of a loss of power, directing the unit to a safe shutdown condition.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

11. Reactor Coolant Pump (RCP) Breaker Position

Both RCP Breaker Position trip Functions operate together on two sets of auxiliary contacts, with one set on each RCP breaker. These Functions anticipate the Reactor Coolant Flow—Low trips to avoid RCS heatup that would occur before the low flow trip actuates.

a. Reactor Coolant Pump Breaker Position (Single Loop)

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 LCO requires one RCP Breaker Position channel per RCP to be OPERABLE. One OPERABLE channel is sufficient for this trip Function because the RCS Flow—Low trip alone provides sufficient protection of unit SLs for loss of flow events. The RCP Breaker Position trip serves only to anticipate the low flow trip, minimizing the thermal transient associated with loss of a pump.

This Function measures only the discrete position (open or closed) of the RCP breaker, using a position switch. Therefore, the Function has no adjustable trip setpoint with which to associate an LSSS.

In MODE 1 above the P-8 setpoint, when a loss of flow in any RCS loop could result in DNB conditions in the core, the RCP Breaker Position (Single Loop) trip must be OPERABLE. In MODE 1 below the P-8 setpoint, a loss of flow in two or more loops is required to actuate a reactor trip because of the lower power level and the greater margin to the design limit DNBR.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

b. Reactor Coolant Pump Breaker Position (Two Loops)

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, a loss of flow in two or more loops 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.

RCP breakers open

The LCO requires one RCP Breaker Position channel per RCP to be OPERABLE. One OPERABLE channel is sufficient for this Function because the RCS Flow-Low trip alone provides sufficient protection of unit SLs for loss of flow events. The RCP Breaker Position trip serves only to anticipate the low flow trip, minimizing the thermal transient associated with loss of an RCP.

This Function measures only the discrete position (open or closed) of the RCP breaker, using a position switch. Therefore, the Function has no adjustable trip setpoint with which to associate an LSSS.

Setting

In MODE 1 above the P-7 setpoint and below the P-8 setpoint, the RCP Breaker Position (Two Loops) trip must be OPERABLE. Below the P-7 setpoint, all reactor trips on loss of flow are automatically blocked since no conceivable power distributions could occur that would cause a DNB concern at this low power level. Above the P-7 setpoint, the reactor trip on loss of flow in two RCS loops is automatically enabled. Above the P-8 setpoint, a loss of flow in any one loop will actuate a reactor trip because of the higher power level and the reduced margin to the design limit DNBR.

(continued)

BASES (1)

SURVEILLANCE REQUIREMENTS

SR 3.3.1.6 (continued)

A Note modifies SR 3.3.1.6. The Note states that this Surveillance is required only if reactor power is > 50% RTP and that [24] hours is allowed for performing the first surveillance after reaching 50% RTP.

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 3.3.1.7

SR 3.3.1.7 is the performance of a COT every [92] days.

A COT is performed on each required channel to ensure the entire channel will perform the intended Function.

Setpoints must be within the Allowable Values specified in Table 3.3.1-1.

The difference between the current "as found" values and the previous test "as left" values must be consistent with the drift allowance used in the setpoint methodology. The setpoint shall be left set consistent with the assumptions of the current unit specific setpoint methodology.

The "as found" and "as left" values must also be recorded and reviewed for consistency with the assumptions of Reference 7.

SR 3.3.1.7 is modified by a Note that provides a 4 hour delay in the requirement to perform this Surveillance for source range instrumentation when entering MODE 3 from MODE 2. This Note allows a normal shutdown to proceed without a delay for testing in MODE 2 and for a short time in MODE 3 until the RTBs are open and SR 3.3.1.7 is no longer required to be performed. (i.e., the 4 hour delay allows a normal shutdown to be completed without a required hold on power reduction to perform the testing required by this SR). In addition, performing the COT of the source range instrumentation prior to entry into MODE 3 from MODE 2 may increase the probability of an inadvertent reactor trip. If the unit is to be in MODE 3 with the RTBs closed for > 4 hours this Surveillance must be performed prior to 4 hours after entry into MODE 3.

The Frequency of [92] days is justified in Reference 7. (122)

(continued)

Supplement 7

BASES (continued)

ACTIONS

A Note has been added in the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed on Table 3.3.2-1.

In the event a channel's Trip Setpoint is found nonconservative with respect to the Allowable Value, or the transmitter, instrument Loop, signal processing electronics, or bistable is found inoperable, then all affected Functions provided by that channel must be declared inoperable and the LCO Condition(s) entered for the protection Function(s) affected. When the Required Channels in Table 3.3.2-1 are specified (e.g., on a per steam line, per loop, per SG, etc., basis), then the Condition may be entered separately for each steam line, loop, SG, etc., as appropriate.

When the number of inoperable channels in a trip function exceed those specified in one or other related Conditions associated with a trip function, then the unit is outside the safety analysis. Therefore, LCO 3.0.3 should be immediately entered if applicable in the current MODE of operation.

[Reviewer's Note: Certain LCO Completion Times are based on approved topical reports. In order for a licensee to use these times, the licensee must justify the Completion Times as required by the staff Safety Evaluation Report (SER) for the topical report.]

A.1

Condition A applies to all ESFAS protection functions.

Condition A addresses the situation where one or more channels or trains for one or more Functions are inoperable at the same time. The Required Action is to refer to Table 3.3.2-1 and to take the Required Actions for the protection functions affected. The Completion Times are those from the referenced Conditions and Required Actions.

(continued)

Supplement 7

Not used.

(1)

BASES

ACTIONS

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

- Phase B Isolation; and (78)
- Automatic Switchover to Containment Sump. (47)

This action addresses the train orientation of the SSPS (relay logic) (3) and the master and slave relays. If one train is inoperable, 6 (12) hours are allowed to restore the train to OPERABLE status. The specified Completion Time is reasonable considering that there is another train OPERABLE, and the low probability of an event occurring during this interval. (110) 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 (12 (18) (110) hours total time) and in MODE 5 within an additional 30 hours (42 (48) (110) hours total time). 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.

The Required Actions are modified by a Note that allows one train to be bypassed for up to [4] hours for surveillance testing, provided the other train is OPERABLE. This allowance is based on the reliability analysis assumption of WCAP-10271-P-A (Ref. 8) that 4 hours is the average time required to perform channel surveillance. (77)

D.1, D.2.1, and D.2.2

Condition D applies to:

- Containment Pressure - High 1; (30)
- Pressurizer Pressure - Low (two, three, and four loop units); (18)
- Steam Line Pressure - Low; (51)
- Steam Line Differential Pressure - High; (and)
- High Steam Flow in Two Steam Lines Coincident With T_{avg} - Low Low or Coincident With Steam Line Pressure - Low; (50)

(continued)

BASES

ACTIONS (continued)

G.1, G.2.1 and G.2.2

Condition G applies to the automatic actuation logic and actuation relays for the Steam Line Isolation [, Turbine Trip and Feedwater Isolation,] and AFW actuation Functions.

The action addresses the train orientation of the SSPS and the master and slave relays for these functions. If one train is inoperable, 6 hours are allowed to restore the train to OPERABLE status. The Completion Time for restoring a train to OPERABLE status is reasonable considering that there is another train OPERABLE, and the low probability of an event occurring during this interval. If the train cannot be returned to OPERABLE status, the unit must be brought to 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 the protection channels and actuation functions. In this MODE, the unit does not have analyzed transients or conditions that require the explicit use of the protection functions noted above.

The Required Actions are modified by a Note that allows one train to be bypassed for up to [4] hours for surveillance testing provided the other train is OPERABLE. This allowance is based on the reliability analysis (Ref. 8) assumption that 4 hours is the average time required to perform channel surveillance.

[H.1 and H.2

Condition H applies to the automatic actuation logic and actuation relays for the Turbine Trip and Feedwater Isolation Function.

This action addresses the train orientation of the SSPS and the master and slave relays for this Function. If one train is inoperable, 6 hours are allowed to restore the train to OPERABLE status or the unit must be placed in MODE 3 within the following 6 hours. The Completion Time for restoring a train to OPERABLE status is reasonable considering that there is another train OPERABLE, and the low probability of]

(continued)

B 3.3 INSTRUMENTATION

B 3.3.5 Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation

1

BASES

BACKGROUND

The DGs provide a source of emergency power when offsite power is either unavailable or is insufficiently stable to allow safe unit operation. Undervoltage protection will generate an LOP start if a loss of voltage or degraded voltage condition occurs in the switchyard. There are two LOP start signals, one for each 4.16 kV vital bus.

on the emergency bus

98

480 V emergency

111

Three undervoltage relays with inverse time characteristics are provided on each 4160 Class IE instrument bus for detecting a sustained degraded voltage condition or a loss of bus voltage. The relays are combined in a two-out-of-three logic to generate an LOP signal if the voltage is below 75% for a short time or below 90% for a long time. The LOP start actuation is described in FSAR, Section 8.3 (Ref. 1).

definite

98

INSERT B 3.3.5-1

99

U

Trip Setpoints and Allowable Values

Setpoint Tolerances

110

The Trip Setpoints used in the relays are based on the analytical limits presented in FSAR, Chapter 15 (Ref. 2). The selection of these Trip Setpoints is such that adequate protection is provided when all sensor and processing time delays are taken into account.

Degraded Grid Voltage Study

INSERT B 3.3.5-2

100

The actual nominal Trip Setpoint entered into the relays is normally still more conservative than that required by the Allowable Value. If the measured setpoint does not exceed the Allowable Value, the relay is considered OPERABLE.

Setpoints adjusted in accordance with the Allowable Value ensure that the consequences of accidents will be acceptable, providing the unit is operated from within the LCOs at the onset of the accident and that the equipment functions as designed.

Allowable Values and/or Trip Setpoints are specified for each Function in the LCO. Nominal Trip Setpoints are also specified in the unit specific setpoint calculations. The nominal setpoints are selected to ensure that the setpoint measured by the surveillance procedure does not exceed the

(continued)

Supplement 7

(1)

BASES

BACKGROUND

Trip Setpoints and Allowable Values (continued) Setpoint Tolerances 110

Allowable Value if the relay is performing as required. If the measured setpoint does not exceed the Allowable Value. the relay is considered OPERABLE. Operation with a Trip Setpoint less conservative than the nominal Trip Setpoint. but within the Allowable Value. is acceptable provided that operation and testing is consistent with the assumptions of the unit specific setpoint calculation. Each Allowable Value and/or Trip Setpoint specified is more conservative than the analytical limit assumed in the transient and accident analyses in order to account for instrument uncertainties appropriate to the trip function. These uncertainties are defined in the "Unit Specific RTS/ESFAS Setpoint Methodology Study" (Ref. 3). 100

APPLICABLE SAFETY ANALYSES

The LOP DG start instrumentation is required for the Engineered Safety Features (ESF) Systems to function in any accident with a loss of offsite power. Its design basis is that of the ESF Actuation System (ESFAS).

Accident analyses credit the loading of the DG based on the loss of offsite power during a loss of coolant accident (LOCA). The actual DG start has historically been associated with the ESFAS actuation. The DG loading has been included in the delay time associated with each safety system component requiring DG supplied power following a loss of offsite power. The analyses assume a non-mechanistic DG loading. which does not explicitly account for each individual component of loss of power detection and subsequent actions. concurrent with

The required channels of LOP DG start instrumentation. in conjunction with the ESF systems powered from the DGs. provide unit protection in the event of any of the analyzed accidents discussed in Reference (2). in which a loss of offsite power is assumed. UFSAR, Chapter 15 (Ref. 3)

The delay times assumed in the safety analysis for the ESF equipment include the 10 second DG start delay. and the appropriate sequencing delay. if applicable. The response times for ESFAS actuated equipment in LCO 3.3.2. "Engineered Safety Feature Actuation System (ESFAS) Instrumentation." include the appropriate DG loading and sequencing delay.

(continued)

Supplement 7

Ventilation

BASES

1

LCO (continued)

2. Automatic Actuation Logic and Actuation Relays

The LCO requires two trains of Automatic Actuation Logic and Actuation Relays OPERABLE to ensure that no single random failure can prevent automatic actuation.

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INSERT B 3.3.6-2

Automatic Actuation Logic and Actuation Relays consist of the same features and operate in the same manner as described for ESFAS Function 1.b, SI, and ESFAS Function 3.a, Containment Phase A Isolation. The applicable MODES and specified conditions for the containment purge isolation portion of these Functions are different and less restrictive than those for their Phase A isolation and SI roles. If one or more of the SI or Phase A isolation Functions becomes inoperable in such a manner that only the Containment Purge Isolation Function is affected, the Conditions applicable to their SI and Phase A isolation Functions need not be entered. The less restrictive Actions specified for inoperability of the Containment Purge Isolation Functions specify sufficient compensatory measures for this case.

3. Containment Radiation

The LCO specifies four two required channels of radiation monitors to ensure that the radiation monitoring instrumentation necessary to initiate Containment Purge Ventilation Isolation remains OPERABLE.

For sampling systems, channel OPERABILITY involves more than OPERABILITY of the channel electronics. OPERABILITY may also require correct valve lineups, sample pump operation, and filter motor operation, as well as detector OPERABILITY, if these supporting features are necessary for trip to occur under the conditions assumed by the safety analyses.

4. Containment Isolation - Phase A Safety Injection

Refer to LCO 3.3.2, Function 3.a 1.a-f, for all initiating Functions and requirements.

(continued)

Ventilation

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BASES (continued)

APPLICABILITY

The Manual Initiation, Automatic Actuation Logic and Actuation Relays, Containment Isolation - Phase A, and Containment Radiation Functions are required OPERABLE in MODES 1, 2, 3, and 4, 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 purge and exhaust isolation instrumentation must be OPERABLE in these MODES.

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ventilation

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INSERT 3.3.6-3

While in MODES 5 and 6 without fuel handling in progress, the containment purge and exhaust 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 limits of Reference 1.

or Purging operations

ACTIONS

The most common cause of channel inoperability is outright failure or drift of the bistable or process module sufficient to exceed the tolerance allowed by unit specific calibration procedures. Typically, the drift is found to be small and results in a delay of actuation rather than a total loss of function. This determination is generally made during the performance of a COT, when the process instrumentation is set up for adjustment to bring it within specification. If the Trip Setpoint is less conservative than the tolerance specified by the calibration procedure, the channel must be declared inoperable immediately and the appropriate Condition entered.

or during purging. The Safety Injection Functions are required to be OPERABLE during MODES 1, 2, 3 and 4.

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A Note has been added to the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed in Table 3.3.6-1. The Completion Time(s) of the inoperable channel(s)/train(s) of a Function will be tracked separately for each Function starting from the time the Condition was entered for that Function.

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A.1

Condition A applies to the failure of one containment purge isolation radiation monitor channel. Since the four containment radiation monitors measure different parameters,

(continued)

Supplement 7

BASES

LCO

(1.) 2. Automatic Actuation Logic and Actuation Relays (continued)

restrictive Actions specified for inoperability of the CREFS Functions specify sufficient compensatory measures for this case.

(2.) 3. Control Room Radiation Monitor

The LCO specifies two required one Control Room Atmosphere Area Radiation Monitors and two required Control Room Air Intake Radiation Monitors to ensure that the radiation monitoring instrumentation necessary to initiate the CREFS remains OPERABLE.

For sampling systems, channel OPERABILITY involves more than OPERABILITY of channel electronics. OPERABILITY may also require correct valve lineups, sample pump operation, and filter motor operation, as well as detector OPERABILITY, if these supporting features are necessary for trip to occur under the conditions assumed by the safety analyses.

(3) 4. Safety Injection

Refer to LCO 3.3.2, Function 1, for all initiating Functions and requirements.

APPLICABILITY

The CREFS Functions must be OPERABLE in MODES 1, 2, 3, 4, [and during CORE ALTERATIONS] and movement of irradiated fuel assemblies. The Functions must also be OPERABLE in MODES [5 and 6] when required for a waste gas decay tank rupture accident, to ensure a habitable environment for the control room operators.

(18) (113) (1)

ACTIONS

The most common cause of channel inoperability is outright failure or drift of the bistable or process module sufficient to exceed the tolerance allowed by the unit specific calibration procedures. Typically, the drift is found to be small and results in a delay of actuation rather

(continued)

Supplement 7

BASES

ACTIONS (continued)

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

Condition B applies to the failure of two CREFS actuation trains, two radiation monitor channels, or two manual channels. The first Required Action is to place one CREFS train in the emergency [radiation protection] mode of operation immediately. This accomplishes the actuation instrumentation Function that may have been lost and places the unit in a conservative mode of operation. The applicable Conditions and Required Actions of LCO 3.7.10 must also be entered for the CREFS train made inoperable by the inoperable actuation instrumentation. This ensures appropriate limits are placed upon train inoperability as discussed in the Bases for LCO 3.7.10.

Alternatively, both trains may be placed in the emergency [radiation protection] mode. This ensures the CREFS function is performed even in the presence of a single failure.

The Required Action for Condition B is modified by a Note that requires placing one CREFS train in the toxic gas protection mode instead of the [radiation protection] mode of operation if the automatic transfer to toxic gas protection mode is inoperable. This ensures the CREFS train is placed in the most conservative mode of operation relative to the OPERABILITY of the associated actuation instrumentation.

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C.1 and C.2

Condition C applies when the Required Action and associated Completion Time for Condition A or B have not been met and the unit is in MODE 1, 2, 3, or 4. The unit must be brought to a MODE in which the LCO requirements are not applicable. To achieve this status, the unit must be brought to 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 unit systems.

(continued)

Supplement 7

B 3.3.8 Auxiliary Feedwater (AFW) System Instrumentation

BASES

ACTIONS

A Note has been added in the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed on Table 3.3.8-1.

In the event a channel's Trip Setpoint is found nonconservative with respect to the Allowable Value, or the transmitter, instrument loop, signal processing electronics, or bistable is found inoperable, then all affected Functions provided by that channel must be declared inoperable and the LCO Condition(s) entered for the Function(s) affected. When the Required Channels in Table 3.3.8-1 are specified (e.g., on a per bus or per pump basis), then the Condition may be entered separately for each bus or pump, etc., as appropriate.

A.1

Condition A applies to all AFW Functions, and addresses the situation where one or more channels or trains for one or more Functions are inoperable at the same time. The Required Action is to refer to Table 3.3.8-1 and to take the Required Actions for the Functions affected. The Completion Times are those from the referenced Conditions and Required Actions.

B.1, B.2.1, and B.2.2

Condition B applies to Undervoltage-Reactor Coolant Pump. If one channel is inoperable, 4 hours are allowed to restore the channel to OPERABLE status or to place it in the tripped condition. A failure of one Undervoltage-Reactor Coolant Pump channel places the Function in an unacceptable configuration. The inoperable channel must be tripped to place the Function in a one-out-of-one coincident with a two-out-of-two configuration.

ACTIONS

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

Failure to restore the inoperable channel to OPERABLE status or place it in the tripped condition within 6 hours requires the unit be placed in MODE 3 within the following 6 hours and MODE 4 within the next 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. In MODE 4, these Functions are no longer required OPERABLE.

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

Condition C applies to SG Water Level – Low Low. If one channel is inoperable, 6 hours are allowed to restore the channel to OPERABLE status or to place it in the tripped condition. A failure of one SG Water Level-Low Low channel places the Function in a two-out-of-two configuration. One channel must be tripped to place the Function in a one-out-of-two configuration.

Failure to restore the inoperable channel to OPERABLE status or place it in the tripped condition within 6 hours requires the unit be placed in MODE 3 within the following 6 hours and MODE 4 within the next 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. In MODE 4, these Functions are no longer required OPERABLE.

D.1, D.2.1, and D.2.2

Condition D applies to Loss of Offsite Power. This action recognizes the lack of manual trip provision for a failed channel. If a channel is inoperable, 48 hours are allowed to return it to OPERABLE status. The specified Completion Time is reasonable considering the nature of this Function, the available redundancy, and the low probability of an event occurring during this interval. If the Function cannot be returned to OPERABLE status, the unit must be

BASES

ACTIONS

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

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 in an orderly manner and without challenging unit systems. In MODE 4, the unit does not have any analyzed transients or conditions that require the explicit use of the protection functions noted above.

E.1 and E.2

Condition E applies to the AFW pump start on trip of all MFW pumps. This action addresses the relay logic for the auto start function of the AFW System on loss of all MFW pumps. 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 unit systems. In MODE 3, the unit does not have any analyzed transients or conditions that require the explicit use of the protection function noted above. The allowance of 48 hours to return the train to an OPERABLE status is justified in WCAP-10271-P-A (Ref. 3).

SURVEILLANCE REQUIREMENTS

The SRs for each AFW Actuation Function are identified by the SRs column of Table 3.3.8-1.

A Note has been added to the SR Table to clarify that Table 3.3.8-1 determines which SRs apply to which Functions.

The CHANNEL CALIBRATION and COTs are performed in a manner that is consistent with the assumptions used in analytically calculating the required channel accuracies.

Consequently, the Bases of the ISTS Surveillance Requirements, are modified to reflect the same Bases of the ITS 3.3.2 SRs. Subsequent SRs are renumbered accordingly.

109 Not used.

110 The Bases associated with ITS Specifications are modified to reflect changes made to ITS Specifications.

111 HBRSEP undervoltage relays utilize definite time characteristics.

112 Bases describing the function of the COT are modified in presentation for clarity.

113 Bases 3.3.7 are modified to reflect that LCO is not Applicable in MODE 5 and MODE 6, but rather during CORE ALTERATIONS and movement of irradiated fuel assemblies.

114 Not used.

115 Not used.

116 Not used.

117 ISTS Specification 3.3.8 is not adopted in the ITS. The Fuel Handling Building Ventilation System design does not include any manual or automatic actuation logic. The system is manually energized, under administrative control.

118 The Remote Shutdown System Table (ISTS Table 3.3.4-1) is relocated from HBRSEP Unit NO. 2 ITS 3.3.4 to the HBRSEP Unit No. 2 ITS Bases (ITS Table B 3.3.4-1). This change is consistent with the provisions of Generic Letter 91-08 for the removal of lists and has been approved for Clinton Power Station (Amendment 68) on that basis.

119 The Functions in ISTS Table 3.3.4-1, Remote Shutdown System Instrumentation and Controls, are revised to reflect the HBRSEP Unit No. 2 current licensing basis (as identified in UFSAR Section 7.4.1.1 and Table 9.5.1.C-2) associated with the capability to place and

maintain the plant in Hot Shutdown from outside the control room. The ITS Table B 3.3.4-1 includes the following exceptions to Remote Shutdown System Functions discussed in the UFSAR:

The Boric Acid Transfer Pump Control Function is satisfied by the Charging Pump Controls and RWST Level Functions since the boric acid transfer pump requirements are to be relocated from the Technical Specifications during the implementation of the ITS at HBRSEP Unit No. 2. The functions are considered to be equivalent for the purposes of satisfying the Remote Shutdown Function based on a comparison of UFSAR Section 7.4.1.1 and Table 9.5.1.C-2.

120 ISTS Table 3.3.4-1 (ITS Table B 3.3.4-1) is revised to add Footnote (a), "This Function is local indication and manual trip feature at the breaker and applies to Reactor Trip Breakers and Reactor Bypass Breakers that are racked in, "to ISTS Table 3.3.4-1, Items 1.b. and 1.c., Reactor Trip Breaker Position and Manual Reactor Trip. This note modifies Applicability requirements similar to the manner in which the Notes associated with bypasses and interlock modify Applicabilities in ISTS LCO 3.3.1, Reactor Trip System Instrumentation, and LCO 3.3.2, Engineered Safety Features Actuation System Instrumentation. This note is provided since these two Functions in the HBRSEP Unit No. 2 design are satisfied by local indication and the manual trip feature at the breaker. As such, if the associated breaker is not racked in, local indication and manual trip capability are not available for that breaker. However, with the breaker not racked in, the Reactor Protection System cannot be energized through this breaker and the need to monitor the status of this breaker for reactivity control purposes is not required.

121 The Applicability in the Bases for various ITS Table 3.3.1-1 Functions is modified to reflect the change to ITS Table 3.3.2-1.

122 Additional discussion is provided to clarify the basis for the Note to ITS SR 3.3.1.7.

Table 3.3.1-1 (page 1 of 7)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	TRIP SETPOINT
1. Manual Reactor Trip	1,2	2	B	SR 3.3.1.14	NA	NA
	3(a), 4(a), 5(a)	2	C	SR 3.3.1.14	NA	NA
2. Power Range Neutron Flux						
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	≤ 110.93% RTP	≤ 108% RTP
b. Low	1(b),2	4	E	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11	≤ 26.93% RTP	≤ 24% RTP
3. 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	≤ 34.17% RTP	≤ 25% RTP
	2(d)	2	H	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11	≤ 34.17% RTP	≤ 25% RTP
4. Source Range Neutron Flux	2(d)	2	I,J	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11	≤ 1.28 E5 cps	≤ 1.0 E5 cps
	3(a), 4(a), 5(a)	2	J,K	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.11	≤ 1.28 E5 cps	≤ 1.0 E5 cps
	3(e), 4(e), 5(e)	1	L	SR 3.3.1.1 SR 3.3.1.11	N/A	N/A

(continued)

(a) With Reactor Trip Breakers (RTBs) closed, and either rods not fully inserted, or Rod Control System capable of rod withdrawal.
(b) Below the P-10 (Power Range Neutron Flux) interlock.
(c) Above the P-6 (Intermediate Range Neutron Flux) interlock.
(d) Below the P-6 (Intermediate Range Neutron Flux) interlock.
(e) With the RTBs open. In this condition, source range Function does not provide reactor trip but does provide indication and alarm.

Table 3.3.1-1 (page 3 of 7)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	TRIP SETPOINT
9. Reactor Coolant Flow – Low						
a. Single Loop	$1^{(g)}$	3 per loop	N	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10	≥ 93.47%	≥ 94.26%
b. Two Loops	$1^{(h)}$	3 per loop	M	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10	≥ 93.47%	≥ 94.26%
10. Reactor Coolant Pump (RCP) Breaker Position						
a. Single Loop	$1^{(g)}$	1 per RCP	O	SR 3.3.1.14	NA	NA
b. Two Loops	$1^{(h)}$	1 per RCP	M	SR 3.3.1.14	NA	NA
11. Undervoltage RCPs	$1^{(f)}$	1 per bus	M	SR 3.3.1.9 SR 3.3.1.10	≥ 2959 V	≥ 3120 V
12. Underfrequency RCPs	$1^{(f)}$	1 per bus	M	SR 3.3.1.10 SR 3.3.1.14	≥ 57.84 Hz	≥ 58.2 Hz
13. Steam Generator (SG) Water Level – Low Low	1,2	3 per SG	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10	≥ 15.36%	≥ 16%

(continued)

(f) Above the P-7 (Low Power Reactor Trips Block) interlock.
(g) Above the P-8 (Power Range Neutron Flux) interlock.
(h) Above the P-7 (Low Power Reactor Trips Block) interlock and below the P-8 (Power Range Neutron Flux) interlock.

Table 3.3.1-1 (page 5 of 7)
Reactor Protection System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	TRIP SETPOINT
17. Reactor Protection System Interlocks						
a. Intermediate Range Neutron Flux, P-6	2(d)	2	S	SR 3.3.1.11 SR 3.3.1.13	≥ 7.16 E-11 amp	≥ 1 E-10 amp
b. Low Power Reactor Trips Block, P-7	1	1 per train	T	SR 3.3.1.13 SR 3.3.1.14	NA	NA
c. Power Range Neutron Flux, P-8	1	4	T	SR 3.3.1.11 SR 3.3.1.13	≤ 42.94% RTP	≤ 40% RTP
d. Power Range Neutron Flux, P-10	1,2	4	S	SR 3.3.1.11 SR 3.3.1.13	≥ 7.06% RTP and ≤ 12.94% RTP	≥ 10% RTP
e. Turbine Impulse Pressure, P-7 input	1	2	T	SR 3.3.1.1 SR 3.3.1.10 SR 3.3.1.13	≤ 10.71% turbine power	≤ 10% turbine power
18. Reactor Trip Breakers(i)	1,2	2 trains	R,V	SR 3.3.1.4	NA	NA
	3(a), 4(a), 5(a)	2 trains	C,V	SR 3.3.1.4	NA	NA
19. Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms	1,2	1 each per RTB	U	SR 3.3.1.4	NA	NA
	3(a), 4(a), 5(a)	1 each per RTB	C	SR 3.3.1.4	NA	NA
20. Automatic Trip Logic	1,2	2 trains	Q,V	SR 3.3.1.5	NA	NA
	3(a), 4(a), 5(a)	2 trains	C,V	SR 3.3.1.5	NA	NA

(a) With Reactor Trip Breakers (RTBs) closed, and either rods not fully inserted, or Rod Control System capable of rod withdrawal.
(d) Below the P-6 (Intermediate Range Neutron Flux) interlock.
(i) Including any reactor trip bypass breakers that are racked in and closed for bypassing an RTB.

3.3 INSTRUMENTATION

3.3.2 Engineered Safety Feature Actuation System (ESFAS) Instrumentation

LCO 3.3.2 The ESFAS instrumentation for each Function in Table 3.3.2-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.2-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one or more required channels or trains inoperable.	A.1 Enter the Condition referenced in Table 3.3.2-1 for the channel(s) or train(s).	Immediately
B. One channel or train inoperable.	B.1 Restore channel or train to OPERABLE status.	48 hours
	<u>OR</u>	
	B.2.1 Be in MODE 3.	54 hours
	<u>AND</u>	
	B.2.2 Be in MODE 5.	84 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One train inoperable.	C.1 Restore train to OPERABLE status.	12 hours
	<u>OR</u>	
	C.2.1 Be in MODE 3.	18 hours
	<u>AND</u>	
	C.2.2 Be in MODE 5.	48 hours
D. One channel inoperable.	D.1 Place channel in trip.	6 hours
	<u>OR</u>	
	D.2.1 Be in MODE 3.	12 hours
	<u>AND</u>	
	D.2.2 Be in MODE 4.	18 hours
E. One Containment Pressure channel inoperable.	E.1 Place channel in trip.	6 hours
	<u>OR</u>	
	E.2.1 Be in MODE 3.	12 hours
	<u>AND</u>	
	E.2.2 Be in MODE 4.	18 hours
	<u>AND</u>	
	E.2.3 Be in MODE 5.	42 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. One channel or train inoperable.	F.1 Restore channel or train to OPERABLE status. OR F.2.1 Be in MODE 3. AND F.2.2 Be in MODE 4.	48 hours 54 hours 60 hours
G. One train inoperable.	G.1 Restore train to OPERABLE status. OR G.2.1 Be in MODE 3. AND G.2.2 Be in MODE 4.	12 hours 18 hours 24 hours

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.5.2	Perform CHANNEL CALIBRATION with setpoint tolerance as follows: a. Loss of voltage setpoint tolerance of 328 V ± 10% with a time delay of ≤ 1 second (at zero voltage). b. Degraded voltage setpoint tolerance of 430 V ± 4 V with a time delay of 10 ± 0.5 seconds.	18 months

Table 3.3.6-1 (page 1 of 1)
Containment Ventilation Isolation Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	TRIP SETPOINT
1. Manual Initiation	1,2,3,4, (a),(b),(c)	2	SR 3.3.6.6	NA
2. Automatic Actuation Logic and Actuation Relays	1,2,3,4, (a),(b),(c)	2 trains	SR 3.3.6.2 SR 3.3.6.3 SR 3.3.6.5	NA
3. Containment Radiation				
a. Gaseous	(a),(b),(c)	1	SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.7	(d)
b. Particulate	(a),(b),(c)	1	SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.7	(d)
4. Safety Injection	Refer to LCO 3.3.2, "ESFAS Instrumentation," Functions 1.a-f, for all initiation functions and requirements.			

(a) During CORE ALTERATIONS.
(b) During movement of irradiated fuel assemblies within containment.
(c) During Purging.
(d) Trip Setpoint shall be in accordance with the methodology in the Offsite Dose Calculation Manual.

3.3 INSTRUMENTATION

3.3.7 Control Room Emergency Filtration System (CREFS) Actuation Instrumentation

LCO 3.3.7 The CREFS actuation instrumentation for each Function in Table 3.3.7-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, 4
During movement of irradiated fuel assemblies,
During CORE ALTERATIONS.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One automatic actuation train inoperable.	A.1 Place one CREFS train in emergency pressurization mode.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. Two automatic actuation trains inoperable. OR One radiation monitoring channel inoperable.	B.1	Place one CREFS train in emergency pressurization mode.	Immediately
C. Required Action and associated Completion Time for Condition A or B not met in MODE 1, 2, 3, or 4.	C.1 AND C.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours

(continued)

3.3 INSTRUMENTATION

3.3.8 Auxiliary Feedwater (AFW) System Instrumentation

LCO 3.3.8 The AFW instrumentation for each Function in Table 3.3.8-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.8-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one or more required channels inoperable.	A.1 Enter the Condition referenced in Table 3.3.8-1 for the channel(s) or train(s).	Immediately
B. One channel inoperable.	B.1 Place channel in trip.	4 hours
	OR	
	B.2.1 Be in MODE 3.	10 hours
	AND	
	B.2.2 Be in MODE 4.	16 hours
C. One channel inoperable.	C.1 Place channel in trip.	6 hours
	OR	
		(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. (continued)	C.2.1	Be in MODE 3.	12 hours
	AND		
	C.2.2	Be in MODE 4.	18 hours
D. One channel inoperable.	D.1	Restore channel or train to OPERABLE status.	48 hours
	OR		
	D.2.1	Be in MODE 3.	54 hours
	AND		
	D.2.2	Be in MODE 4.	60 hours
E. One Main Feedwater Pumps trip channel inoperable.	E.1	Restore channel to OPERABLE status.	48 hours
	OR		
	E.2	Be in MODE 3.	54 hours

SURVEILLANCE REQUIREMENTS

------------------------------------NOTE------------------------------------
Refer to Table 3.3.8-1 to determine which SRs apply for each AFW Function.

SURVEILLANCE		FREQUENCY
SR 3.3.8.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.8.2	Perform COT.	92 days
SR 3.3.8.3	-----------------NOTE----------------- For Function 5, the TADOT shall include injection of a simulated or actual signal to verify channel OPERABILITY. -------------------------------------- Perform TADOT.	18 months
SR 3.3.8.4	Perform CHANNEL CALIBRATION.	18 months

Table 3.3.8-1 (page 1 of 1)
Auxiliary Feedwater System Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE (a)	TRIP SETPOINT
1.	SG Water Level-Low Low	1,2,3	3 per SG	C	SR 3.3.8.1 SR 3.3.8.2 SR 3.3.8.4	≥ 15.36%	≥ 16%
2.	Safety Injection	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 1, for all initiation functions and requirements.					
3.	Loss of Offsite Power	1,2,3	2 per bus	D	SR 3.3.8.3 SR 3.3.8.4	328 V ± 10% with ≤ 1 sec time delay	328 V with ≤ 1 sec time delay
4.	Undervoltage Reactor Coolant Pump	1,2,3	2 per bus	B	SR 3.3.8.3 SR 3.3.8.4	≥ 2959 V	≥ 3120 V
5.	Trip of all Main Feedwater Pumps	1,2	1 per pump	E	SR 3.3.8.3	NA	NA

(a) For Function 3, "Loss of Offsite Power," the value is a setpoint tolerance.

B 3.3 INSTRUMENTATION

B 3.3.1 Reactor Protection System (RPS) Instrumentation

BASES

BACKGROUND

The RPS initiates a unit shutdown, based on the values of selected unit parameters, to protect against violating the core fuel design limits and Reactor Coolant System (RCS) pressure boundary during anticipated operational occurrences (AOOs) and to assist the Engineered Safety Features (ESF) Systems in mitigating accidents.

The protection and monitoring systems have been designed to assure safe operation of the reactor. This is achieved by specifying limiting safety system settings (LSSS) in terms of parameters directly monitored by the RPS, as well as specifying LCOs on other reactor system parameters and equipment performance.

The LSSS, defined in this specification as the Allowable Values, in conjunction with the LCOs, establish the threshold for protective system action to prevent exceeding acceptable limits during Design Basis Accidents (DBAs).

During AOOs, which are those events expected to occur one or more times during the unit life, the acceptable limits are:

1. The Departure from Nucleate Boiling Ratio (DNBR) shall be maintained above the Safety Limit (SL) value to prevent departure from nucleate boiling (DNB);

2. Fuel centerline melt shall not occur; and

3. The RCS pressure SL of 2735 psig shall not be exceeded.

Operation within the SLs of Specification 2.0, "Safety Limits (SLs)," also maintains the above values and assures that offsite dose will be within the 10 CFR 50 and 10 CFR 100 criteria during AOOs.

Accidents are events that are analyzed even though they are not expected to occur during the unit life. The acceptable limit during accidents is that offsite dose shall be maintained within an acceptable fraction of 10 CFR 100 limits. Different accident categories are allowed a

(continued)

BASES

BACKGROUND

Trip Setpoints and Allowable Values (continued)

calculate the Trip Setpoints, including their explicit uncertainties, is provided in the company setpoint methodology procedure. The actual nominal Trip Setpoint entered into the bistable is more conservative than that specified by the Allowable Value to account for changes in random measurement errors detectable by a COT. One example of such a change in measurement error is drift during the surveillance interval. If the measured setpoint does not exceed the Allowable Value, the channel is considered OPERABLE.

Setpoints in accordance with the Allowable Value ensure that SLs are not violated during AOOs (and that the consequences of DBAs will be acceptable, providing the unit is operated from within the LCOs at the onset of the AOO or DBA and the equipment functions as designed). Note that in the accompanying LCO 3.3.1, the Allowable Values are the LSSS.

Each channel of the analog protection system can be tested on line to verify that the signal or setpoint accuracy is within the specified allowance requirements of calculations performed in accordance with the company setpoint methodology procedure. Once a designated channel is taken out of service for testing, a simulated signal is injected into the channel for testing. The process equipment for the channel in test is then tested, verified, and calibrated. SRs for the channels are specified in the SRs section.

The Trip Setpoints and Allowable Values listed in Table 3.3.1-1 are based on the methodology described in the company setpoint methodology procedure, which incorporates all of the applicable uncertainties for each channel. The magnitudes of these uncertainties are factored into the determination of each Trip Setpoint. All field sensors and signal processing equipment for these channels are assumed to operate within the allowances of these uncertainty magnitudes.

Reactor Protection System Relay Logic

This equipment is used for the decision logic processing of outputs from the signal processing equipment bistables. To meet the redundancy requirements, two trains of RPS logic,

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

10. Reactor Coolant Pump (RCP) Breaker Position

Both RCP Breaker Position trip Functions operate together on two sets of auxiliary contacts, with one set on each RCP breaker. These Functions anticipate the Reactor Coolant Flow – Low trips to avoid RCS heatup that would occur before the low flow trip actuates.

a. Reactor Coolant Pump Breaker Position (Single Loop)

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 LCO requires one RCP Breaker Position channel per RCP to be OPERABLE. One OPERABLE channel is sufficient for this trip Function because the RCS Flow – Low trip alone provides sufficient protection of unit SLs for loss of flow events. The RCP Breaker Position trip serves only to anticipate the low flow trip, minimizing the thermal transient associated with loss of a pump.

This Function measures only the discrete position (open or closed) of the RCP breaker, using a position switch. Therefore, the Function has no adjustable trip setting with which to associate an LSSS.

In MODE 1 above the P-8 setpoint, when a loss of flow in any RCS loop could result in DNB conditions in the core, the RCP Breaker Position (Single Loop) trip must be OPERABLE. In MODE 1 below the P-8 setpoint, a loss of flow in two or more loops is required to actuate a reactor trip because of the lower power level and the greater margin to the design limit DNBR.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABLILITY (continued)

b. <u>Reactor Coolant Pump Breaker Position (Two Loops)</u>

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 LCO requires one RCP Breaker Position channel per RCP to be OPERABLE. One OPERABLE channel is sufficient for this Function because the RCS Flow—Low trip alone provides sufficient protection of unit SLs for loss of flow events. The RCP Breaker Position trip serves only to anticipate the low flow trip, minimizing the thermal transient associated with loss of an RCP.

This Function measures only the discrete position (open or closed) of the RCP breaker, using a position switch. Therefore, the Function has no adjustable trip setting with which to associate an LSSS.

In MODE 1 above the P-7 setpoint and below the P-8 setpoint, the RCP Breaker Position (Two Loops) trip must be OPERABLE. Below the P-7 setpoint, all reactor trips on loss of flow are automatically blocked since no conceivable power distributions could occur that would cause a DNB concern at this low power level. Above the P-7 setpoint, the reactor trip on loss of flow in two RCS loops is automatically enabled. Above the P-8 setpoint, a loss of flow in any one loop will actuate a reactor trip because of the higher power level and the reduced margin to the design limit DNBR.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.7 (continued)

Setpoints must be within the Allowable Values specified in Table 3.3.1-1.

The difference between the current "as found" values and the previous test "as left" values must be consistent with the drift allowance used in the setpoint methodology. The setpoint shall be left set consistent with the assumptions of the current unit specific setpoint methodology.

The "as found" and "as left" values must also be recorded and reviewed for consistency with the assumptions of Reference 7.

SR 3.3.1.7 is modified by a Note that provides a 4 hour delay in the requirement to perform this Surveillance for source range instrumentation when entering MODE 3 from MODE 2. This Note allows a normal shutdown to proceed without a delay for testing in MODE 2 and for a short time in MODE 3 until the RTBs are open and SR 3.3.1.7 is no longer required to be performed (i.e., the 4 hour delay allows a normal shutdown to be completed without a required hold on power reduction to perform the testing required by this SR). In addition, performing the COT of the source range instrumentation prior to entry into MODE 3 from MODE 2 may increase the probability of a reactor trip. If the unit is to be in MODE 3 with the RTBs closed for > 4 hours this Surveillance must be performed prior to 4 hours after entry into MODE 3.

The Frequency of 92 days is justified in Reference 7.

SR 3.3.1.8

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. The Frequency is modified by a Note that allows this surveillance to be satisfied if it has been performed within 92 days of the Frequencies prior to reactor startup and four hours after reducing power below P-10 and P-6. The Frequency of "prior to startup" ensures this surveillance is performed prior to critical operations and applies to the

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.8 (continued)

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

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

b. Engineered Safety Feature Actuation System Interlocks – T_{avg} – Low

On increasing reactor coolant temperature, this interlock reinstates SI on High Steam Flow Coincident With Steam Line Pressure – Low or Coincident With T_{avg} – Low and provides an arming signal to the Steam Dump System. On decreasing reactor coolant temperature, the interlock allows the operator to manually block SI on High Steam Flow Coincident With Steam Line Pressure – Low or Coincident with T_{avg} – Low. On a decreasing temperature, the interlock also removes the arming signal to the Steam Dump System to prevent an excessive cooldown of the RCS due to a malfunctioning Steam Dump System.

Since T_{avg} is used as an indication of bulk RCS temperature, this Function meets redundancy requirements with one OPERABLE channel in each loop. These channels are used in two-out-of-three logic.

This Function must be OPERABLE in MODES 1, 2, and 3 when a secondary side break or stuck open valve could result in the rapid depressurization of the steam lines. This Function does not have to be OPERABLE in MODE 4, 5, or 6 because there is insufficient energy in the secondary side of the unit to have an accident.

The ESFAS instrumentation satisfies Criterion 3 of the NRC Policy Statement.

ACTIONS

Note 1 has been added in the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed on Table 3.3.2-1.

(continued)

BASES

ACTIONS (continued)

In the event a channel's Trip Setpoint is found nonconservative with respect to the Allowable Value, or the transmitter, instrument Loop, signal processing electronics, or bistable is found inoperable, then all affected Functions provided by that channel must be declared inoperable and the LCO Condition(s) entered for the protection Function(s) affected. When the Required Channels in Table 3.3.2-1 are specified (e.g., on a per steam line, per loop, per SG, etc., basis), then the Condition may be entered separately for each steam line, loop, SG, etc., as appropriate.

When the number of inoperable channels in a trip function exceed those specified in one or other related Conditions associated with a trip function, then the unit is outside the safety analysis. Therefore, LCO 3.0.3 should be immediately entered if applicable in the current MODE of operation.

A.1

Condition A applies to all ESFAS protection functions.

Condition A addresses the situation where one or more channels or trains for one or more Functions are inoperable at the same time. The Required Action is to refer to Table 3.3.2-1 and to take the Required Actions for the protection functions affected. The Completion Times are those from the referenced Conditions and Required Actions.

B.1, B.2.1 and B.2.2

Condition B applies to manual initiation of:

- SI; and
- Phase A Isolation.

(continued)

BASES

ACTIONS

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

This action addresses the train orientation of the relay logic for the functions listed above. If a channel or train is inoperable, 48 hours is allowed to return it to an OPERABLE status. The specified Completion Time is reasonable considering that there are two automatic actuation trains and another manual initiation train OPERABLE for each Function, and the low probability of an event occurring during this interval. 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 (54 hours total time) and in MODE 5 within an additional 30 hours (84 hours total time). 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.

C.1, C.2.1 and C.2.2

Condition C applies to the automatic actuation logic and actuation relays for the following functions:

- SI; and
- Containment Spray.

This action addresses the train orientation of the relay logic and the master and slave relays. If one train is inoperable, 12 hours are allowed to restore the train to OPERABLE status. The specified Completion Time is reasonable considering that there is another train OPERABLE, and the low probability of an event occurring during this interval. 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 (18 hours total time) and in MODE 5 within an additional 30 hours (48 hours total time). The Completion Times are reasonable, based on operating experience, to reach the required unit conditions

(continued)

BASES

ACTIONS

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

occurring during this interval. If the Function cannot be returned to OPERABLE status, 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 in an orderly manner and without challenging unit systems. In MODE 4, the unit does not have any analyzed transients or conditions that require the explicit use of the protection functions noted above.

G.1, G.2.1 and G.2.2

Condition G applies to the automatic actuation logic and actuation relays for the Steam Line Isolation.

The action addresses the train orientation of the relay logic and the master and slave relays for these functions. If one train is inoperable, 12 hours are allowed to restore the train to OPERABLE status. The Completion Time for restoring a train to OPERABLE status is reasonable considering that there is another train OPERABLE, and the low probability of an event occurring during this interval. If the train cannot be returned to OPERABLE status, the unit must be brought to 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 the protection channels and actuation functions. In this MODE, the unit does not have analyzed transients or conditions that require the explicit use of the protection functions noted above.

H.1, H.2.1 and H.2.2

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

(continued)

B 3.3 INSTRUMENTATION

B 3.3.5 Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation

BASES

BACKGROUND

The DGs provide a source of emergency power when offsite power is either unavailable or is insufficiently stable to allow safe unit operation. Undervoltage protection will generate an LOP start if a loss of voltage or degraded voltage condition occurs on the emergency bus. There are two LOP start signals for each 480 V emergency bus.

Undervoltage relays with definite time characteristics are provided on each 480 V emergency bus for detecting a sustained degraded voltage condition or a loss of bus voltage. The Loss of Voltage Function is provided by two relays on each bus. These relays are arranged in a one-out-of-two logic, such that either relay will generate an LOP signal if the voltage is below approximately 68% for a short time (loss of bus voltage). The Degraded Voltage Function is provided by three relays on each bus, which are combined in a two-out-of-three logic to generate an LOP signal if the voltage is below approximately 90% for a long period of time (degraded voltage). The LOP start actuation is described in UFSAR, Section 8.3 (Ref. 1).

Trip Setpoints and Setpoint Tolerances

The Trip Setpoints used in the relays are based on the Degraded Grid Voltage Study (Ref. 2). The selection of these Trip Setpoints is such that adequate protection is provided when all sensor and processing time delays are taken into account.

Trip Setpoints and tolerances are specified for each Function in the LCO. If the measured setpoint falls within the tolerance band, the relay is considered OPERABLE. Operation with a measured setpoint less conservative than the Trip Setpoint, but within the tolerance band, is acceptable provided that operation and testing is consistent with the assumptions of the setpoint calculation. Each Trip Setpoint specified is more conservative than the analytical values determined in Reference 2 in order to account for instrument uncertainties appropriate to the trip function.

(continued)

BASES

BACKGROUND

Trip Setpoints and Setpoint Tolerances (continued)

These uncertainties are defined in the company setpoint methodology procedure.

The dropout time delay on the loss of voltage relays is very short, almost instantaneous. This short time delay is necessary to preclude damage to equipment from operating on less than minimum manufacturer's recommended voltage for continuous motor operation. The dropout time delay on the degraded voltage relays is significantly longer. A long time delay is desired such that it will minimize the effects of short duration disturbances on the grid. However, the allowable time duration of a degraded voltage condition must be short enough that it will not result in failure of safety systems or components.

APPLICABLE SAFETY ANALYSES

The LOP DG start instrumentation is required for the Engineered Safety Features (ESF) Systems to function in any accident with a loss of offsite power. Its design basis is that of the ESF Actuation System (ESFAS).

Accident analyses credit the loading of the DG based on the loss of offsite power concurrent with a loss of coolant accident (LOCA). The actual DG start has historically been associated with the ESFAS actuation. The DG loading has been included in the delay time associated with each safety system component requiring DG supplied power following a loss of offsite power. The analyses assume a non-mechanistic DG loading, which does not explicitly account for each individual component of loss of power detection and subsequent actions.

The required channels of LOP DG start instrumentation, in conjunction with the ESF systems powered from the DGs, provide unit protection in the event of any of the analyzed accidents discussed in UFSAR, Chapter 15 (Ref. 3), in which a loss of offsite power is assumed.

The delay times assumed in the safety analysis for the ESF equipment include the 10 second DG start delay, and the appropriate sequencing delay, if applicable. The response times for ESFAS actuated equipment in LCO 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation,"

(continued)

BASES

LCO

2. Automatic Actuation Logic and Actuation Relays (continued)

Manual Initiation Functions. Containment ventilation isolation also initiates on an automatic safety injection (SI) signal when operating in MODES 1, 2, 3, and 4. The Bases for LCO 3.3.2, "Engineered Safety Features Actuation System (ESFAS) Instrumentation," discusses this mode of intitiation.

3. Containment Radiation

The LCO specifies two required channels of radiation monitors to ensure that the radiation monitoring instrumentation necessary to initiate Containment Ventilation Isolation remains OPERABLE.

For sampling systems, channel OPERABILITY involves more than OPERABILITY of the channel electronics. OPERABILITY may also require correct valve lineups, sample pump operation, and filter motor operation, as well as detector OPERABILITY, if these supporting features are necessary for trip to occur under the conditions assumed by the safety analyses.

4. Safety Injection

Refer to LCO 3.3.2, Functions 1.a-f, for all initiating Functions and requirements.

APPLICABILITY

The Manual Initiation, Automatic Actuation Logic and Actuation Relays, and Containment Radiation Functions are required to be OPERABLE in MODES 1, 2, 3, and 4, and during CORE ALTERATIONS, or movement of irradiated fuel assemblies within containment, or during Purging. The Safety Injection Functions are required to be during MODES 1, 2, 3, and 4. 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.

(continued)

BASES (continued)

APPLICABILITY

The CREFS Functions must be OPERABLE in MODES 1, 2, 3, 4, and during CORE ALTERATIONS and movement of irradiated fuel assemblies.

ACTIONS

The most common cause of channel inoperability is outright failure or drift of the bistable or process module sufficient to exceed the tolerance allowed by the unit specific calibration procedures. Typically, the drift is found to be small and results in a delay of actuation rather than a total loss of function. This determination is generally made during the performance of a COT, when the process instrumentation is set up for adjustment to bring it within specification. If the Trip Setpoint is less conservative than the tolerance specified by the calibration procedure, the channel must be declared inoperable immediately and the appropriate Condition entered.

A Note has been added to the ACTIONS indicating that separate Condition entry is allowed for each Function. The Conditions of this Specification may be entered independently for each Function listed in Table 3.3.7-1 in the accompanying LCO. The Completion Time(s) of the inoperable channel(s)/train(s) of a Function are tracked separately for each Function starting from the time the Condition was entered for that Function.

(continued)

BASES

ACTIONS (continued)

A.1

Condition A applies to the automatic actuation Function of the CREFS.

If one train is inoperable, 7 days are permitted to restore it to OPERABLE status. The 7 day Completion Time is the same as is allowed if one train of the mechanical portion of the system is inoperable. The basis for this Completion Time is the same as provided in LCO 3.7.9. If the channel/train cannot be restored to OPERABLE status, one CREFS train must be placed in the emergency pressurization mode of operation. This accomplishes the actuation instrumentation Function and places the unit in a conservative mode of operation.

(continued)

BASES

ACTIONS (continued)

B.1

Condition B applies to the failure of two CREFS actuation trains, or the radiation monitor channel. The Required Action is to place one CREFS train in the emergency pressurization mode of operation immediately. This accomplishes the actuation instrumentation Function that may have been lost and places the unit in a conservative mode of operation.

C.1 and C.2

Condition C applies when the Required Action and associated Completion Time for Condition A or B have not been met and the unit is in MODE 1, 2, 3, or 4. The unit must be brought to a MODE in which the LCO requirements are not applicable. To achieve this status, the unit must be brought to 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 unit systems.

D.1 and D.2

Condition D applies when the Required Action and associated Completion Time for Condition A or B have not been met during CORE ALTERATIONS or when irradiated fuel assemblies are being moved. Movement of irradiated fuel assemblies and

(continued)

BASES (continued)

ACTIONS

A Note has been added in the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed on Table 3.3.8-1.

In the event a channel's Trip Setpoint is found nonconservative with respect to the Allowable Value, or the transmitter, instrument loop, signal processing electronics, or bistable is found inoperable, then all affected Functions provided by that channel must be declared inoperable and the LCO Condition(s) entered for the Function(s) affected. When the Required Channels in Table 3.3.8-1 are specified (e.g., on a per bus or per pump basis), then the Condition may be entered separately for each bus or pump, etc., as appropriate.

A.1

Condition A applies to all AFW Functions, and addresses the situation where one or more channels or trains for one or more Functions are inoperable at the same time. The Required Action is to refer to Table 3.3.8-1 and to take the Required Actions for the Functions affected. The Completion Times are those from the referenced Conditions and Required Actions.

B.1, B.2.1, and B.2.2

Condition B applies to Undervoltage-Reactor Coolant Pump. If one channel is inoperable, 4 hours are allowed to restore the channel to OPERABLE status or to place it in the tripped condition. A failure of one Undervoltage-Reactor Coolant Pump channel places the Function in an unacceptable configuration. The inoperable channel must be tripped to place the Function in a one-out-of-one coincident with a two-out-of-two configuration.

Failure to restore the inoperable channel to OPERABLE status or place it in the tripped condition within 4 hours requires the unit be placed in MODE 3 within the following 6 hours and MODE 4 within the next 6 hours.

The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions

(continued)

BASES

ACTIONS

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

from full power conditions in an orderly manner and without challenging unit systems. In MODE 4, these Functions are no longer required OPERABLE.

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

Condition C applies to SG Water Level – Low Low. If one channel is inoperable, 6 hours are allowed to restore the channel to OPERABLE status or to place it in the tripped condition. A failure of one SG Water Level-Low Low channel places the Function in a two-out-of-two configuration. One channel must be tripped to place the Function in a one-out-of-two configuration.

Failure to restore the inoperable channel to OPERABLE status or place it in the tripped condition within 6 hours requires the unit be placed in MODE 3 within the following 6 hours and MODE 4 within the next 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. In MODE 4, these Functions are no longer required OPERABLE.

D.1, D.2.1, and D.2.2

Condition D applies to Loss of Offsite Power. This action recognizes the lack of manual trip provision for a failed channel. If a channel is inoperable, 48 hours are allowed to return it to OPERABLE status. The specified Completion Time is reasonable considering the nature of this Function, the available redundancy, and the low probability of an event occurring during this interval. If the Function cannot be returned to OPERABLE status, 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 in an orderly manner and without challenging unit systems. In MODE 4, the unit does not have any analyzed transients or conditions

(continued)

BASES

ACTIONS

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

that require the explicit use of the protection functions noted above.

E.1 and E.2

Condition E applies to the AFW pump start on trip of all MFW pumps. This action addresses the relay logic for the auto start function of the AFW System on loss of all MFW pumps. 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 unit systems. In MODE 3, the unit does not have any analyzed transients or conditions that require the explicit use of the protection function noted above. The allowance of 48 hours to return the train to an OPERABLE status is justified in WCAP-10271-P-A (Ref. 3).

SURVEILLANCE REQUIREMENTS

The SRs for each AFW Actuation Function are identified by the SRs column of Table 3.3.8-1.

A Note has been added to the SR Table to clarify that Table 3.3.8-1 determines which SRs apply to which Functions.

The CHANNEL CALIBRATION and COTs are performed in a manner that is consistent with the assumptions used in analytically calculating the required channel accuracies.

SR 3.3.8.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.8.1 (continued)

approximately the same value. Significant deviations between the two instrument channels could be an indication of excessive instrument drift in one of the channels or of something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Channel deviation criteria are determined by the unit staff, based on a combination of the channel instrument uncertainties, including indication and reliability. If a channel is outside the criteria, it may be an indication that the sensor or the signal processing equipment has drifted outside its limit.

The Frequency is based on operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the LCO required channels.

SR 3.3.8.2

SR 3.3.8.2 is the performance of a COT. A COT is performed on each required channel to ensure the entire channel, with the exception of the transmitter sensing device, will perform the intended Function. Setpoints must be found within the tolerances and Allowable Values specified in Table 3.3.8-1.

The difference between the current "as found" values and the previous test "as left" values must be consistent with the drift allowance used in the setpoint methodology. The setpoint must be left set consistent with the assumptions of the setpoint methodology.

The "as found" and "as left" values must also be recorded and reviewed for consistency with the assumptions of the surveillance interval extension analysis in Reference 3 when applicable.

The Frequency of 92 days is justified in Reference 3.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.8.3

SR 3.3.8.3 is the performance of a TADOT. This test is a check of AFW automatic pump start on loss of offsite power, undervoltage RCP, and trip of all MFW pumps Functions. It is performed every 18 months. Each applicable Actuation Function is tested up to, and including, the end device start circuitry. In some instances, the test includes actuation of the end device (i.e., pump starts, valve cycles, etc.). As noted, this SR requires the injection of a simulated or actual signal for the Trip of Main Feedwater Pumps Function. The injection of the signal should be as close to the sensor as practical. The Frequency is adequate, based on industry operating experience and is consistent with the typical refueling cycle.

SR 3.3.8.4

SR 3.3.8.4 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 difference between the current "as found" values and the previous test "as left" values must be consistent with the drift allowance used in the 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.

REFERENCES

1. UFSAR, Section 7.3.1

2. UFSAR, Section 3.1

3. WCAP-10271-P-A, Supplement 2, Rev. 1., June 1990

SUPPLEMENT 7
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)"	
	3.1-13(3.4.16) 3.2-2(3.4.17)	3.1-13(3.4.16), 3.2-2(3.4.17)
b.	Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
	3, 20, 24, 24a, 27, 32, 34, and 35	3, 20, 24, 24a, 27, 32, 34, and 35
c.	Part 3, "No significant Hazards Consideration (NSHC), And Basis for Categorical Exclusion from 10 CFR 51.22"	
	22c and 22d	22c and 22d
d.	Part 4, "Markup of NUREG-1431, Revision 1, Standard Technical Specifications Westinghouse Plants, (ISTS)"	
	3.4-50, 3.4-51, 3.4-52(3.4.17)	3.4-50, 3.4-51, 3.4-52(3.4.17)
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	4, -, and 7	4, 4a, and 7
f.	Part 6, "Markup of ISTS Bases"	
	B 3.4-30(B 3.4.6), B 3.4-39(B 3.4.8), B 3.4-101 through B 3.4-107 (B 3.4.17)	B 3.4-30(B 3.4.6), B 3.4-39(B 3.4.8), B 3.4-101 through B 3.4-107 (B 3.4.17)
g.	Part 7, "Justification of Differences (JFDs) to ISTS Bases"	
	6	6
h.	Part 8, "Proposed HBRSEP, Unit No. 2 ITS"	
	3.4-50, 3.4-51(3.4.17)	3.4-50, 3.4-51(3.4.17)
i.	Part 9, "Proposed Bases to HBRSEP, Unit No. 2 ITS"	
	B 3.4-32(B 3.4.6), B 3.4-41(B 3.4.8), B 3.4-102, B 3.4-104, B 3.4-105 (B 3.4.17)	B 3.4-32(B 3.4.6), B 3.4-41(B 3.4.8), B 3.4-102, B 3.4-104, B 3.4-105 (B 3.4.17)

SUPPLEMENT 7
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

j. Part 10, "ISTS Generic Changes"
NA

ITS (A1)

3.1.4 Maximum Reactor Coolant Activity

[LCO 3.4.16] The total specific activity in μCi/gram of the reactor coolant shall not exceed 1.0 μCi/gram dose equivalent I-131 and 100/Ē μCi/gram under ~~all modes of operation.~~ (Ē is the average of beta and gamma energy (MEV) per disintegration of the specific activity.) (See 1.1)

[RA A.2] [Action C] With the specific activity of the primary coolant > 1.0 μCi/gram dose equivalent I-131 for more than 48 hours during one continuous time interval or exceeding the limit line shown on Figure 3.1.4-1, be in at least hot shutdown with T_{avg} < 500°F within 6 hours.

MODES 1, 2, 3 (≥500°F) (L14)

[Action B] With the specific activity of the primary coolant > 100/Ē μCi/gram, be in at least hot shutdown with T_{avg} < 500°F within 6 hours.

[RA A.1] In ~~any operating mode~~ with the specific activity of the primary coolant > 1.0 μCi/gram dose equivalent I-131 ~~or > 100/Ē μCi/gram~~, perform the sampling and analysis requirements of Item 1 of Table 4.1-2 ~~until the specific activity of the primary coolant is restored to within its~~ limits.

(L14)

SPECIFICATION 3.4.17

(F35)

With Required Action and Completion Time of Condition A or B not met

e. Two channels of heat tracing shall be operable for the flow path from the boric acid tanks. (LA12)

f. The primary water storage tank contains not less than 30,000 gallons of water. (A33)

3.2.3 During power operation, the requirements of 3.2.2 may be modified to allow any one of the following components to be inoperable. If the system is not restored to meet the requirements of 3.2.2 within the time period specified, the reactor shall be placed in the hot shutdown condition utilizing normal operating procedures. If the requirements of 3.2.2 are not satisfied within an additional 48 hours, the reactor shall be placed in the cold shutdown condition utilizing normal operating procedures. (M41) (MODE 3) (within 6 hours)

[RA C.1]

(A37)

[RA A.1]

a. One of the two operable (required) charging pumps may be removed from service provided a charging pump is restored to operable status within 24 hours. (A34)

b. One boric acid transfer pump may be out of service provided the pump is restored to operable status within 24 hours.

c. One channel of heat tracing may be out of service for 24 hours. (L22)

3.2.4 Extended Maintenance

As soon as there is reason to expect that maintenance to restore components or systems to an operable condition will last longer than periods specified, the circumstances of the extended maintenance and the estimated date for returning the components or systems to an operable condition shall promptly be reported to the Director - Office

(M46)

Add RA. B.1 (L23)

Add RA E.1
RA E.2
RA E.3
RA F.1
RA F.2 (M44)

(L20)
Add RA D.1
RA D.2
RA D.3

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 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.

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 Not Used

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 and an allowable value of ≤ 418 psig. The lower setpoint is necessary to support the overpressure transient analysis that permits utilization of a single OPERABLE SI train in MODE 4. The allowable value imposes a maximum allowable drift for the setpoint that was not previously included in the CTS. As stated in the CP&L Letter dated February 18, 1997, the actual nominal trip setpoint entered into the bistable is more conservative than that specified by the allowable value to account for changes in random measurement errors

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 the Technical Requirements Manual and to the Bases to LCO 3.4.11, respectively..

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 the Bases to LCO 3.4.14.

Included in the relocated details is a relocated requirement to lock manual valve(s) utilized to isolate a high pressure line having a non-functional (i.e., inoperable) PIV. This requirement may be relocated and be controlled in accordance with ITS Section 5.5.14, "Bases Control Program," because existing administrative controls provide assurance that the valve(s) will be closed, and the safety associated with the additional requirement to lock manual valve(s) is not affected by the level of regulatory control. ITS LCO 3.4.14, Actions A.1 and A.2 require that when one or more flow paths exist with leakage from one or more RCS PIVs not within the LCO limit, that the high pressure line containing the PIV(s) be isolated utilizing closed manual, deactivated automatic, or check valve(s). The ITS Required Actions restores the high pressure to low pressure configuration such that the restored isolation of the high pressure line does not result in an interfacing systems Loss-of-Coolant Accident (LOCA), as a result of undetected leakage through PIVs. The ITS Required Actions allow for a single failure in the isolated high pressure line once all actions have been complied with within the required Completion Times. The requirement for deactivating a automatic valves provides assurance that a failure of an automatic valve utilized to isolate the high pressure line can not result in loss of redundant isolation of the high pressure line.

Administrative controls assure compliance with the required actions to isolate a high pressure line with one or more inoperable PIVs utilizing closed manual, deactivated automatic, or check valve(s). Administrative controls also assure that the additional requirement to lock closed manual valves is accomplished. Therefore, the requirement to lock closed manual valve(s) provides no additional safety and may be 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 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 the Technical Requirements Manual and the Bases to LCO 3.4.16.

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

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 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.

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}) $\geq$ 500°F. Since the CTS applicability is "all modes" and "any operating condition," when the specific activity of the primary coolant exceeds the limits for dose equivalent iodine 131 or gross activity, CTS 3.1.4 requires the sampling and analysis requirements of table 4.1-2 be performed until the specific activity of the primary coolant is restored to within limits. ITS 3.4.16 Required Actions requirements are no longer applicable when the unit is no longer in the MODES or other conditions stated in the Applicability for the LCO. Additionally, when the limit is exceeded limit for gross activity, ITS 3.4.16 RA B.1 requires the unit be placed outside the MODE of Applicability within 6 hours without imposing any additional sampling and analysis requirement. 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 $\geq$ 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. Exiting the MODES of applicability eliminates requirements for additional sampling and analyses. 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

L20 The CTS is modified by the addition of ITS LCO 3.4.17 Required Actions D.1, D.2, and D.3 to require that in the event that seal injection to any RCP is not within the limit and both required charging pumps are inoperable, the plant be cooled down and depressurized to an RCS pressure < 1400 psig. No comparable action is contained in CTS, and in such a condition, entry into CTS 3.0 would be required, which requires that the plant be placed in hot shutdown within 8 hours and in cold shutdown within an additional 30 hours. The ITS 3.4.17 Required Actions associated with ITS 3.4.17 Condition D are a relaxation of requirements and is more appropriate than requiring entry into cold shutdown. If ITS Condition D were entered, seal injection to the RCPs is not assured. Cooling of the RCPs is only available from the component cooling system, and if the component cooling system were lost, RCP seal failure would eventially occur if seal injection or component cooling were not restored. When no charging capability is available, the RCS will lose RCS inventory through the RCP seals. With no operable means of RCP seal injection, it would be imprudent to require the plant to go to MODE 4, where a requirement for RCP seal injection remains and shutdown margin requirements would be difficult to maintain. Therefore, the appropriate action is to initiate measures to restore RCP seal injection immediately and to continue the action to cool down and depressurize to an RCS pressure less than 1400 psig to allow makeup to the RCS through the Safety Injection (SI) System. The Completion Time of 12 hours is reasonable based on operating experience to allow an orderly transition between MODES 3 and MODE 4, which is the closest condition corresponding to depressurization to an RCS pressure < 1400 psig, without challenging plant systems. Maintaining the plant in MODE 3 with the RCS pressure < 1400 psig until charging is reestablished to the RCPs is reasonable to avoid further challenging plant systems in this condition.

L21 CTS Specification 3.2.2.d requires that system piping, instrumentation, controls, and valves shall be operable to the extent of establishing one flow path from the BASTs and one flow path from the RWST to the RCS. This requirement is modified in ITS LCO 3.4.17 as the requirement that two Makeup Water Pathways from the RWST shall be OPERABLE. The ITS provides more operational flexibility and is less restrictive because the BASTs are not specified to be a pathway source. There are two pathways available from the RWST to the charging pump suction header, any one of which provides an equivalent source of makeup water for RCP seal injection. The Operability requirement for ITS Specifications 3.4.17 is to maintain sufficient seal water injection flow to the RCPs. Two pathways provide redundant capability to assure a continuous source of makeup water without specifying each pathway source. Therefore, the increased flexibility in ITS Specifications 3.4.17 is acceptable.

L22 Not Used.

L23 CTS Specification 3.2.3.a allows one boric acid transfer pump to be inoperable for up to 24 hours. CTS Specification 3.2.3.c allows one channel of heat tracing to be inoperable for up to 24 hours. The CTS is modified by not including these specific requirements and by adding ITS LCO 3.4.17 Required Action B.1 which allows a Makeup Water Pathway from the RWST to be inoperable for up to 72 hours. This change adds operational flexibility and is less restrictive because the allowable inoperable components in the Makeup Water Pathways are not specified and because there are no longer Required Actions for the boric acid pumps and heat tracing. There are two pathways available from the RWST to the charging pump suction header. These pathways consist of a remotely operated air operated valve and a locally operated manual valve. Either of these pathways provide an equivalent source of makeup water for RCP seal injection. The Operability requirement for ITS Specifications 3.4.17 is to maintain sufficient seal water injection flow to the RCPs. The two pathways provide redundant capability to assure a continuous source of makeup water without specifying each pathway source.

Additionally, other components than those named in CTS Specification 3.2.3 (i.e., valves) may be inoperable in the makeup water pathways that render the pathway inoperable. In such cases the CTS would require entry into CTS Specification 3.0, which requires that hot shutdown be achieved in 8 hours and cold shutdown be achieved within an additional 30 hours. The addition of ITS LCO 3.4.17 Required Action B.1 avoids entry into ITS Specification 3.0.3 for the valves. This change is acceptable because the allowed outage time places an ultimate time requirement that must be met to exit the Condition.

Therefore, the increased flexibility in ITS Specifications 3.4.17 Required Action B.1 is acceptable.

L24 CTS Table 4.1-3 item 17.2 requires, whenever the integrity of a RCS pressure isolation valve cannot be demonstrated, the integrity of the remaining valve to be determined and recorded daily. In this condition, CTS Table 4.1.3 item 17.2 also requires that the position of the other closed valve located in the high pressure piping to be recorded daily. Under this same condition, ITS 3.4.14, RCS Pressure Isolation Valves (PIVs), Required Actions A.1 and A.2 require isolation of the high pressure portion of the piping from the low pressure portion of the piping by the use of two valves. In addition, ITS 3.4.14 Required Actions A.1 and A.2 are modified by a Note that requires the valves used to meet the requirements of Required Actions A.1 and A.2 to satisfy the leakage criteria of SR 3.4.14.1 (i.e., integrity determined to be

injection flow, and two OPERABLE pathways provide redundancy in the event of a single active failure. Therefore, this change will 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?

   This change does not result in any changes to the equipment design or capabilities or to the operation of the plant. Further, since the change impacts only how the Makeup Water Pathways from the Refueling Water Storage Tank (RWST) are required to be OPERABLE and does not result in any change in the response of the equipment to an accident, the change does not create the possibility of a new or different kind of accident from any previously analyzed accident.

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

   The proposed change does not reduce the margin of safety because two OPERABLE Makeup Water Pathways are adequate to provide the required reactor coolant pump seal injection. Sufficient redundancy is provided to allow a single failure in one pathway and still maintain the required RCP seal injection function. Therefore, this change does not involve a reduction in a margin of safety.

LESS RESTRICTIVE CHANGES
("L22" Labeled Comments/Discussions)

Not Used

LESS RESTRICTIVE CHANGES
("L23" 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. Although the criteria set forth in 10 CFR 50.92 applies to analyzed accidents, our conclusion also evaluated the risk significance from a loss of RCP Seal Water Injection as if it were an "analyzed accident" as discussed in 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 will increase the allowed outage time with one pathway for makeup water from the RWST inoperable from 24 to 72 hours. The proposed change will also provide an allowed outage time for any components within a pathway rather than for specified

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3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.17 Chemical and Volume Control System (CVCS)

[M43]
LCO 3.4.17 Reactor Coolant Pump (RCP) seal injection shall be OPERABLE, with:

[3.2.2.a]
a. Two charging pumps shall be OPERABLE; and

[L21]
b. Two Makeup Water Pathways from the Refueling Water Storage Tank (RWST) shall be OPERABLE.

[3.2.2] APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
[3.2.3 a] A. One required charging pump inoperable.	A.1 Restore required charging pump to OPERABLE status.	24 hours
[L23] B. One Makeup Water Pathway from the RWST inoperable.	B.1 Restore Makeup Water Pathway from the RWST to OPERABLE status.	72 hours
[3.2.3] [3.2.5] C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 5.	6 hours 36 hours

(continued)

(36)

ACTIONS (continued)

	CONDITION		REQUIRED ACTION	COMPLETION TIME
D. [L20]	Seal injection to any RCP not within limits.	D.1	Initiate action to restore seal injection to affected RCP(s).	Immediately
	AND		AND	
[L20]	Both required charging pumps inoperable.	D.2	Be in MODE 3.	6 hours
			AND	
[L20]		D.3	Cool down and depressurize the RCS to a pressure of < 1400 psig.	12 hours
E. [M44]	Seal injection to any RCP not within limits.	E.1	Initiate action to restore seal injection to affected RCP(s).	Immediately
	AND		AND	
[M44]	At least one charging pump OPERABLE.	E.2	Be in MODE 3.	6 hours
			AND	
[M44]		E.3	Be in MODE 5.	36 hours
F. [M44]	Both Makeup Water Pathways from the RWST inoperable.	F.1	Be in MODE 3.	6 hours
			AND	
[M44]		F.2	Be in MODE 5.	36 hours

(36)

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
[M42]	SR 3.4.17.1 Verify seal injection flow of ≥ 6 gpm to each RCP.	12 hours
[M42]	SR 3.4.17.2 Verify seal injection flow of ≥ 6 gpm to each RCP from each Makeup Water Pathway from the RWST.	18 months
[M42]	SR 3.4.17.3 For Makeup Water Pathways from the RWST to be OPERABLE, SR 3.5.4.2 is applicable.	In accordance with SR 3.5.4.2

added to ITS 3.4.12 to verify that the additional LCO requirements are met. ISTS SR 3.4.12.2 is not included in ITS because the current LTOP analysis supporting an automatic SI capability in MODE 4 does not require restrictions on charging pump OPERABILITY.

The LTOP analyses are described in detail in Enclosure 5 to CP&L letter dated August 27, 1996, in CP&L letter dated February 18, 1997, as modified by additional information submitted with Supplement 3 to the CP&L letter dated August 27, 1996

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. Use of the USAS Code for the RHR System piping and valves is consistent with the current licensing basis for HBRSEP, Unit No. 2 as described in UFSAR Section 3.2.2 and Table 3.2.2-3.

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.

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.

34 Note 1 to ISTS 3.4.8, RCS Loops-MODE 5, Loops Not Filled, allows all RHR pumps to be de-energized for ≤ 15 minutes when switching from one train to another. Note 1 to ITS 3.4.8 allows all RHR pumps to be de-energized for ≤ 15 minutes when switching from one train to another or to perform testing of the RHR loop supply valves. The additional allowance of "or to perform testing of the RHR loop supply valves" is provided since the HBRSEP Unit No. 2 RHR System design requires de-energization of all RHR pumps in order to perform testing of the RHR loop supply valves (the RHR loop supply valves are common to both RHR trains). This change is acceptable since during this testing the RHR trains must still be maintained OPERABLE. This is accomplished with a dedicated operator, stationed at the controls of the valve and in continuous communication with the control room. In this way, the associated valve can be reopened when a need for residual heat removal operation is indicated.

35 ISTS LCO 3.4.12.b bracketed value of 3.07 square inches is changed to 4.4 square inches in accordance with the required vent area for a mass input from two SI pumps, three charging pumps, and the RHR system in operation and aligned for shutdown cooling. This value corresponds to the cross sectional area of two PORVs blocked open.

36 An appropriate specification is added for the Chemical Volume Control System (CVCS) RCS Seal Injection Function.

BASES

ACTIONS

B.1 (continued)

loop 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 loop OPERABLE, redundancy for decay heat removal is lost and, in the event of a loss of the remaining RHR loop, it would be safer to initiate that loss from MODE 5 (≤ 200°F) rather than MODE 4 (200 to 300°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.

C.1 and C.2

If no loop is OPERABLE or in operation, except during conditions permitted by Note 1 in the LCO section, all operations involving a reduction of RCS boron concentration must be suspended and action to restore one RCS or RHR loop to OPERABLE status and operation must be initiated. Boron dilution requires forced circulation for proper mixing, and the margin to criticality must not be reduced in this type of operation. The immediate Completion Times reflect the importance of maintaining operation for decay heat removal. The action to restore must be continued until one loop is restored to OPERABLE status and operation.

SURVEILLANCE REQUIREMENTS

SR 3.4.6.1

This SR requires verification every 12 hours that one RCS or RHR loop 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 and RHR loop performance.

(continued)

Supp. 8

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(11)

BASES

ACTIONS (continued)

B.1 and B.2

If no required RHR loops are OPERABLE or in operation, except during conditions permitted by Note 1, all operations involving a reduction of RCS boron concentration must be suspended and action must be initiated immediately to restore an RHR loop to OPERABLE status and operation. Boron dilution requires forced circulation for uniform dilution, and the margin to criticality must not be reduced in this type of operation. The immediate Completion Time reflects the importance of maintaining operation for heat removal. The action to restore must continue until one loop is restored to OPERABLE status and operation.

A planned reduction in RCS boron concentration

SURVEILLANCE REQUIREMENTS

SR 3.4.8.1

This SR requires verification every 12 hours that one loop 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 loop performance.

SR 3.4.8.2

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. Verification is performed by verifying proper breaker alignment and power available to the required pumps. 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.

REFERENCES

None.

Supp. 8

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Insert B3.4.17-1

B 3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.17 Chemical and Volume Control System (CVCS)

BASES

BACKGROUND

The function of the CVCS is to provide a source of borated makeup water to the RCS at operating temperatures and pressures. The CVCS provides water injection to the Reactor Coolant Pump (RCP) seals and has the additional functions of removing impurities in the RCS, controlling RCS chemistry, and controlling RCS inventory of both Boron and coolant during heatup and cooldown of the reactor (Ref. 1).

During plant operation, reactor coolant flows through the letdown line from a loop cold leg on the discharge side of the RCP. The coolant passes through heat exchangers to reduce the temperature of the coolant. After passing through one of the mixed bed demineralizers, where ionic impurities are removed, coolant flows through the reactor coolant filters and enters the volume control tank through a spray nozzle. From the volume control tank, the coolant flows to the charging pumps which raise the pressure above that in the RCS. The coolant is normally returned to the cold leg of another loop on the discharge side of the pump via a charging line.

A portion of the high pressure charging flow is injected by the charging pumps into the RCPs between the RCP impeller and the shaft seal so that the seals are not exposed to high temperature reactor coolant. Part of the flow is the shaft seal leakage flow and the remainder enters the RCS through a labyrinth seal on the pump shaft. The shaft seal leakage flow cools the lower radial bearing, passes through the seals, is cooled in the seal water heat exchanger, filtered, and returned to the volume control tank. Seal injection flow is measured by a flow indicator for each RCP.

Seal water inleakage to the RCS requires a continuous letdown of reactor coolant to maintain the desired inventory. In addition, bleed and feed of reactor coolant is required for removal of impurities and adjustment of boric acid in the reactor coolant.

(continued)

Insert B3.4.17-1

BASES

BACKGROUND (continued)

To provide a source of boron to the RCS, boric acid is dissolved at a concentration of approximately 12 percent by weight in the boric acid storage tanks. Small quantities of boric acid solution are metered from the discharge of an operating transfer pump for blending with primary water as makeup for normal leakage or for increasing the reactor coolant boron concentration during normal operation. Electric immersion heaters maintain the temperature of the boric acid tanks solution high enough to prevent precipitation.

Makeup water to the RCS is provided by the CVCS from the following sources:

a. The primary water storage tank, in combination with boric acid storage tanks provides water for makeup and RCS boron concentration adjustments, and

b The Refueling Water Storage Tank (RWST) which, via one of two pathways, supplies borated water for emergency makeup.

Three positive displacement charging pumps with variable speed drives are used to supply charging flow to the RCS. The speed of each pump can be controlled manually or automatically. During normal operation, only one charging pump is operating and the speed is modulated in accordance with pressurizer level.

APPLICABLE SAFETY ANALYSES

The LCO helps to ensure that sufficient seal water injection is provided to the RCPs. The HBRSEP, Unit No. 2 Individual Plant Examination (IPE), submitted to the NRC by letter dated August 31, 1992 (Ref. 2), found that the RCP seal injection function was a risk significant contributor to the Probabilistic Risk Assessment (PRA). The plant damage sequences of interest are a loss of all component cooling water which results in a loss of all charging capability and a loss of backup cooling to the RCP seals. The loss of all component cooling water is initiated by a loss of all AC power (station blackout), a multiple failure of component cooling, or a multiple failure resulting in loss of all service water cooling. Without either component cooling or charging flow to the RCP seals, the RCP seals fail resulting in a small break Loss-of-Coolant Accident (LOCA). The loss

(continued)

Insert B3.4.17-1 (47) <entire page 7

BASES

APPLICABLE SAFETY ANALYSES (continued)

of component cooling also results in a loss of cooling to the containment spray pumps and safety injection pumps. Hence, while the loss of seal injection capability is not the initiating event to the risk significant damage sequences, the charging pumps perform a key function, which if lost, enables continuation of the risk significant damage sequence to an end result of core damage.

The CVCS seal injection function satisfies Criterion 4 of the NRC Policy Statement.

LCO

In MODES 1, 2, 3, and 4, RCP seal injection is required to be OPERABLE to ensure that RCP seal integrity is maintained.

The CVCS is required to maintain minimum seal injection flow as measured by flow indication or by alternate means defined in procedures, to maintain a redundant charging capability to provide seal injection flow to the RCPs, and to maintain a redundant source of makeup water to the charging pumps.

Indication that RCP seal injection flow is within limits can be determined from indicated flow measurement to each RCP or by other means as described in procedures. RCP seal integrity is assured when seal injection flow meets surveillance requirements.

Two charging pumps powered from a normal power source are required to be OPERABLE. The emergency power supply sources are not required for the charging pumps to be OPERABLE. The charging pumps are also OPERABLE if they are powered from the emergency power source in lieu of the normal power source.

The CVCS is required to have a redundant means to provide a supply of makeup water to the charging pumps. Two supplies of makeup water are available from the RWST via a remotely operated air operated valve and locally operated manual valve. These sources provide both required Makeup Water Pathways from the RWST.

APPLICABILITY

In MODES 1, 2, 3, and 4, the CVCS OPERABILITY requirement for the risk significant function of injection to the RCP

(continued)

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APPLICABILITY (continued)

seals, is based upon full power operation. Although reduced power and MODES 3 and 4 conditions would result in less severe consequences of the risk significant sequences and a longer period of time would elapse before core damage occurs, the RCP seals must continue to be cooled in the lower MODES.

In MODES 5 and 6, plant conditions are such that the risk significance of loss of seal injection to the RCPs is significantly reduced. Therefore, CVCS OPERABILITY requirements in these MODES are not maintained in Technical Specifications.

ACTIONS

A.1

With one required charging pump inoperable, the inoperable pump must be returned to OPERABLE status within 24 hours. The 24 hour Completion Time is reasonable, based upon the original licensing basis.

B.1

With one Makeup Water Pathway inoperable, the inoperable components must be returned to OPERABLE status within 72 hours. The 72 hour Completion Time is reasonable, based on the redundant capabilities afforded by the OPERABLE pathway, and the low probability of loss of all RCP seal injection during this period. Because there are two means of establishing a Makeup Water Pathways, the remaining OPERABLE pathway will provide the required source of makeup water.

C.1 and C.2

If the inoperable components identified in Required Actions A.1 and B.1 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. To achieve this status, the plant must be brought to MODE 3 within 6 hours

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BASES

ACTIONS

C.1 and C.2 (continued)

and MODE 5 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.

D.1, D.2 and D.3

If seal injection to any RCP is not within limits and both required charging pumps are inoperable, adequate makeup to the RCP seals is not assured. In addition, adequate makeup to the RCS is not assured and the RCS inventory will begin to reduce. Backup cooling is provided to the RCP seals by the Component Cooling Water System. Since adequate means of adding boron to the RCS to achieve cold shutdown conditions are also not available, it is imprudent to bring the plant to MODE 5 where the LCO no longer applies. Therefore, Required Action D.1 requires that action be initiated to restore seal injection to the RCPs to within limits immediately. Required Actions D.2 and D.3 require that the plant be brought to MODE 3 within 6 hours and be depressurized to a pressure < 1400 psig within 12 hours. At this pressure, the Safety Injection (SI) system can be used to maintain RCS inventory until charging can be reestablished. The allowed Completion Times for Required Actions D.2 and D.3 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.

E.1, E.2, and E.3

If seal injection to any RCP is not within limits and one required charging pump is OPERABLE, adequate makeup to the RCP seals is not assured. Backup cooling is provided to the RCP seals by the component cooling water system. The plant must be brought to a condition where the LCO no longer applies. Required Action E.1 requires that action be intitiated to restore seal injection to the affected RCP(s) immediately. Required Actions E.2 and E.3 require that the plant be brought to MODE 3 in 6 hours and MODE 5 in 36

(continued)

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ACTIONS

E.1, E.2, and E.3 (continued)

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.

F.1 and F.2

If both Makeup Water Pathways from the RWST are inoperable, adequate makeup to the RCP seals is not assured. Backup cooling is provided to the RCP seals by the Component Cooling Water System. The plant must be brought to a condition where the LCO no longer applies. The allowed Completion Times for Required Actions F.1 and F.2 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.

SURVEILLANCE REQUIREMENTS

SR 3.4.17.1

Verification of seal injection to the RCP seals ensures that adequate cooling to the RCP seals is maintained. Verification of seal injection flow is accomplished by direct measurement of seal injection flow or by other means as defined in procedures. A 12 hour Frequency is considered reasonable in view of other administrative controls and the existence of plant alarms that will ensure that an undetected loss of seal injection for more than a short time is unlikely.

SR 3.4.17.2

Verification of seal injection flow to the RCP seals via the Makeup Water Pathways ensures that adequate cooling to the RCP seals can be maintained from the RWST. An 18 month Frequency is considered reasonable considering the unlikely failure mechanisms associated with passive piping and operation of the two valves.

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Insert B3.4.17-1

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BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.4.17.3

Verification of OPERABILITY of the Makeup Water Pathways from the RWST is also satisfied by SR 3.5.4.2, which verifies an adequate inventory of makeup water.

REFERENCES

1. UFSAR Paragraph 9.3.4.
2. CP&L Letter to NRC, 'Submittal of Independent Plant Examination (IPE)," dated August 31, 1992.

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.

46 Bases are modified to add a discussion of the LTOP setpoint and allowable values consistent with information provided to the NRC by letter dated February 18, 1997.

47 An appropriate Bases is provided for added Specification 3.4.17, "Chemical and Volume Control System."

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.17 Chemical and Volume Control System (CVCS)

LCO 3.4.17 Reactor Coolant Pump (RCP) seal injection shall be OPERABLE, with:

a. Two charging pumps shall be OPERABLE; and

b. Two Makeup Water Pathways from the Refueling Water Storage Tank (RWST) shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required charging pump inoperable.	A.1 Restore required charging pump to OPERABLE status.	24 hours
B. One Makeup Water Pathway from the RWST inoperable.	B.1 Restore Makeup Water Pathway from the RWST to OPERABLE status.	72 hours
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Seal injection to any RCP not within limit. AND Both required charging pumps inoperable.	D.1 Initiate action to restore seal injection to affected RCP(s). AND D.2 Be in MODE 3. AND D.3 Cool down and depressurize the RCS to a pressure of < 1400 psig.	Immediately 6 hours 12 hours
E. Seal injection to any RCP not within limit. AND At least one charging pump OPERABLE.	E.1 Initiate action to restore seal injection to affected RCP(s) AND E.2 Be in MODE 3. AND E.3 Be in MODE 5.	Immediately 6 hours 36 hours
F. Both Makeup Water Pathways from the RWST inoperable.	F.1 Be in MODE 3. AND F.2 Be in MODE 5.	6 hours 36 hours

BASES

ACTIONS

A.1 (continued)

importance of maintaining the availability of two paths for heat removal.

B.1

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.

C.1 and C.2

If no loop or train is OPERABLE or in operation, except during conditions permitted by Note 1 in the LCO section, all operations involving a reduction of RCS boron concentration must be suspended and action to restore one RCS loop or RHR train to OPERABLE status and operation must be initiated. A planned reduction in boron concentration requires forced circulation to provide proper mixing, and preserve the margin to criticality. The immediate Completion Times reflect the importance of maintaining operation for decay heat removal. The action to restore must be continued until one loop or train is restored to OPERABLE status and operation.

(continued)

BASES (continued)

ACTIONS

A.1

If only one RHR train is OPERABLE and in operation, redundancy for RHR is lost. Action must be initiated to restore a second train to OPERABLE status. The immediate Completion Time reflects the importance of maintaining the availability of two paths for heat removal.

B.1 and B.2

If no required RHR trains are OPERABLE or in operation, except during conditions permitted by Note 1, all operations involving a reduction of RCS boron concentration must be suspended and action must be initiated immediately to restore an RHR train to OPERABLE status and operation. A planned reduction in RCS boron concentration requires forced circulation for uniform dilution, and the margin to criticality must not be reduced in this type of operation. The immediate Completion Time reflects the importance of maintaining operation for heat removal. The action to restore must continue until one train is restored to OPERABLE status and operation.

SURVEILLANCE REQUIREMENTS

SR 3.4.8.1

This SR requires verification every 12 hours that one 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 3.4.8.2

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. Verification is performed by verifying proper breaker alignment and power available to the required pumps. The Frequency of 7 days is considered reasonable in view of

(continued)

BASES

BACKGROUND (continued)

Makeup water to the RCS is provided by the CVCS from the following sources:

a. The primary water storage tank, in combination with boric acid storage tanks provides water for makeup and RCS boron concentration adjustments, and

b The Refueling Water Storage Tank (RWST) which, via one of two pathways, supplies borated water for emergency makeup.

Three positive displacement charging pumps with variable speed drives are used to supply charging flow to the RCS. The speed of each pump can be controlled manually or automatically. During normal operation, only one charging pump is operating and the speed is modulated in accordance with pressurizer level.

APPLICABLE SAFETY ANALYSES

The LCO helps to ensure that sufficient seal water injection is provided to the RCPs. The HBRSEP, Unit No. 2 Individual Plant Examination (IPE), submitted to the NRC by letter dated August 31, 1992 (Ref. 2), found that the RCP seal injection function was a risk significant contributor to the Probabilistic Risk Assessment (PRA). The plant damage sequences of interest are a loss of all component cooling water which results in a loss of all charging capability and a loss of backup cooling to the RCP seals. The loss of all component cooling water is initiated by a loss of all AC power (station blackout), a multiple failure of component cooling, or a multiple failure resulting in loss of all service water cooling. Without either component cooling or charging flow to the RCP seals, the RCP seals fail resulting in a small break Loss-of-Coolant Accident (LOCA). The loss

(continued)

BASES

APPLICABILITY (continued)

seals, is based upon full power operation. Although reduced power and MODES 3 and 4 conditions would result in less severe consequences of the risk significant sequences and a longer period of time would elapse before core damage occurs, the RCP seals must continue to be cooled in the lower MODES.

In MODES 5 and 6, plant conditions are such that the risk significance of loss of seal injection to the RCPs is significantly reduced. Therefore, CVCS OPERABILITY requirements in these MODES are not maintained in Technical Specifications.

ACTIONS

A.1

With one required charging pump inoperable, the inoperable pump must be returned to OPERABLE status within 24 hours. The 24 hour Completion Time is reasonable, based upon the original licensing basis.

B.1

With one Makeup Water Pathway inoperable, the inoperable components must be returned to OPERABLE status within 72 hours. The 72 hour Completion Time is reasonable, based on the redundant capabilities afforded by the OPERABLE pathway, and the low probability of loss of all RCP seal injection during this period. Because there are two means of establishing Makeup Water Pathways, the remaining OPERABLE pathway will provide the required source of makeup water.

C.1 and C.2

If the inoperable components identified in Required Actions A.1 and B.1 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. To achieve this status, the plant must be brought to MODE 3 within 6 hours

(continued)

BASES

ACTIONS

C.1 and C.2 (continued)

and MODE 5 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.

D.1, D.2 and D.3

If seal injection to any RCP is not within limit and both required charging pumps are inoperable, adequate makeup to the RCP seals is not assured. In addition, adequate makeup to the RCS is not assured and the RCS inventory will begin to reduce. Backup cooling is provided to the RCP seals by the Component Cooling Water System. Since adequate means of adding boron to the RCS to achieve cold shutdown conditions are also not available, it is imprudent to bring the plant to MODE 5 where the LCO no longer applies. Therefore, Required Action D.1 requires that action be initiated to restore seal injection to the RCPs to within limits immediately. Required Actions D.2 and D.3 require that the plant be brought to MODE 3 within 6 hours and be depressurized to a pressure < 1400 psig within 12 hours. At this pressure, the Safety Injection (SI) system can be used to maintain RCS inventory until charging can be reestablished. The allowed Completion Times for Required Actions D.2 and D.3 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.

E.1, E.2, and E.3

If seal injection to any RCP is not within limit and one required charging pump is OPERABLE, adequate makeup to the RCP seals is not assured. Backup cooling is provided to the RCP seals by the component cooling water system. The plant must be brought to a condition where the LCO no longer applies. Required Action E.1 requires that action be intitiated to restore seal injection to the affected RCP(s) immediately. Required Actions E.2 and E.3 require that the plant be brought to MODE 3 in 6 hours and MODE 5 in 36

(continued)

SUPPLEMENT 7
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)"	
	4.5-2(3.5.2)	4.5-2(3.5.2)
b.	Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
	6 through 9	6 through 9a
c.	Part 3, "No Significant Hazards Consideration (NSHC), And Basis for Categorical Exclusion from 10 CFR 51.22"	
	NA	
d.	Part 4, "Markup of NUREG-1431, Revision 1, Standard Technical Specifications Westinghouse Plants, (ISTS)"	
	3.5-4, 3.5-4a, 3.5-5, 3.5-5a(3.5.2)	3.5-4, 3.5-4a, 3.5-5, 3.5-5a(3.5.2)
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	1 through 4	1 through 4
f.	Part 6, "Markup of ISTS Bases"	
	B 3.5-15, and B 3.5-18(B 3.5.2)	B 3.5-15, B 3.5-18(B 3.5.2)
	Insert B 3.5.2-7 (page B 3.5-18a)	Insert B 3.5.2-7(page B 3.5-18a)
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"	
	3.5-4, 3.5-6(3.5.2)	3.5-4, 3.5-6(3.5.2)
i.	Part 9, "Proposed Bases to HBRSEP, Unit No. 2 ITS"	
	B 3.5-14, B 3.5-17(B 3.5.2)	B 3.5-14, B 3.5-17(B 3.5.2)
j.	Part 10, "ISTS Generic Changes	
	NA	

Specification 3.5.2

ITS

(A1)

Containment Spray System

4.5.1.3 System tests shall be performed at each refueling interval. The test shall be performed with the isolation valves in the spray supply lines at the containment and spray additive tank blocked closed. Operation of the system is initiated by tripping the normal actuation instrumentation. — See 3.6.6 + 3.6.7

4.5.1.4 Verify each spray nozzle is unobstructed at least every 10 years. — See 3.6.6

4.5.1.5 The tests discussed in 4.5.1.3 and 4.5.1.4 will be considered satisfactory if visual observations indicate all components have operated satisfactorily. — See 3.6.6 + 3.6.7

Containment Fan Coolers

4.5.1.6 Each fan cooler unit shall be tested at monthly intervals to verify proper operation of all essential features including valves, dampers and piping. — See 3.6.6

4.5.2 Component Verification

(M22)

[SR 3.5.2.1] 4.5.2.1 ~~When the reactor coolant pressure is in excess of 1,000 psi, it shall~~ be verified at least once per 12 hours ~~from the RTGB indicators/controls~~ (L5) that the following valves are in their proper position with control power to the valve operators removed.

Valve Number	Valve Position	Function
1- MOV 862 A&B	Open	LHSI
2- MOV 863 A&B	Closed	LHSI
3- MOV 864 A&B	Open	LHSI, HHSI
4- MOV 866 A&B	Closed	HHSI
5-MOV 878A+B	Open	HHSI

(A3) (M15)

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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, which requires the same verification, 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 ITS 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.

M23 CTS 3.3.1.1.e allows any one flow path including valves of the safety injection or residual heat removal system to be inoperable for up to 24 hours. ITS LCO 3.5.2 Applicability Note 1 permits, in MODE 3, one cold leg safety injection (SI) pump flow path to be isolated by closing the isolation valves for up to 24 hours to perform pressure isolation valve

testing per SR 3.4.14.1. The restriction that only a cold leg injection flow path may be inoperable is a more restrictive requirement upon unit operation and has no adverse impact on safety. This more restrictive requirement is acceptable since only the cold leg safety injection pathways require isolation to perform SR 3.4.14.1, and other pathways (i.e., two (2)) are available for injection during the test.

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.

LA2 CTS 3.3.1.1 includes details regarding the equipment associated with OPERABLE ECCS trains. This requirement is relocated to the Bases for ITS 3.5.2 and ITS 3.5.3.

These 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 trains. 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 this information 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 is consistent with NUREG-1431. The 72 hour Completion Time for

restoration of the boron concentration to within limits is reasonable time to complete the Required Action including confirmatory sampling and analysis.

CTS

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.2 ECCS – Operating

[3.3.1.1.c,d,e,f]

LCO 3.5.2 Two ECCS trains shall be OPERABLE.

[3.3.1.1]

APPLICABILITY: MODES 1, 2, and 3.

4 24 ONE cold leg

-----NOTES-----

1. In MODE 3, both safety injection (SI) pump flow paths may be isolated by closing the isolation valves for up to 2 hours to perform pressure isolation valve testing per SR 3.4.14.1.

1 ONE required SI

2. Operation in MODE 3 with ECCS pumps declared inoperable pursuant to LCO 3.4.12, "Low Temperature Overpressure Protection (LTOP) System," is allowed for up to 4 hours or until the temperature of all RCS cold legs exceeds [375]°F, whichever comes first.

[L8]

[3.3.1.2 f]

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
[3.3.1.2.b] [3.3.1.2 c] A. One or more trains inoperable. AND At least 100% of the ECCS flow equivalent to a single OPERABLE ECCS train available.	A.1 Restore train(s) to OPERABLE status.	72 hours 20 INSERT 3.5.2-1a
[3.3.1.2] ~~B~~ C. Required Action and associated Completion Time not met.	~~B.1~~ C.1 Be in MODE 3. AND ~~B.2~~ C.2 Be in MODE 4.	6 hours 12 hours

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Insert 3.5.2-1

Not used.

Insert 3.5.2-1a

B. One valve identified in SR 3.5.2.1 or SR 3.5.2.7 with control power or air restored.	B.1	Verify control power is removed to all valves identified in SR 3,5,1.5.	Immediately
	AND		
	B.2	Remove control power or air to valve.	24 hours

CTS

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.5.2.1 [4.5.2.1] [3.3.1.1.g]	Verify the following valves are in the listed position with power to the valve operator removed. Control Number / Position / Function SI 862A & B [ ] [OPEN] [ ] SI 863A & B [ ] [CLOSED] [LHSI] SI 864A & B OPEN LHSI, SI 866A & B CLOSED HHSI SI 878A & B [ ] [OPEN] [HHSI]	12 hours Low Head Safety Injection (LHSI) High Head Safety Injection (HHSI)
SR 3.5.2.2 [4.5.2.2]	Verify each ECCS manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.5.2.3	Verify ECCS piping is full of water.	31 days
SR 3.5.2.4 3 [A6]	Verify each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program 18 Months
SR 3.5.2.5 4 [4.5.1.1]	Verify each ECCS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[18] months

(continued)

5 1 17 21

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<u>Insert 3.5.2-2</u>

Not used.

1 LCO 3.4.12 requires one SI pump to be disabled.

2 SR 3.5.1.1 frequency is specified as "once prior to removing power from the valve operator." These valves are required to have their power removed. Removal of power disables remote indication of the valve's position. To preclude the need for routine entry into containment, SR 3.5.1.1 specifies an initial verification of valve's position to be performed prior to removal of power from the valve operator. The SR 3.5.1.1 requirement to verify the valves are open prior to removal of power to the valve's operator coupled with the SR 3.5.1.5 requirement to verify every 31 days that the valve's power is removed provides reasonable assurance that the valves remain open.

With control power removed, the accumulator discharge isolation valves do not provide a remote position indication and thus requiring an entry into containment to verify the valve's position. The remaining valves, except for 878A and 878B (SI pump discharge cross-connect valves) are designed to provide remote position indication when their control power is removed. The 878A and 878B valves, although without remote position indication, are located outside containment and are thus accessible for position verification by observation of the valves.

The phrase limiting the applicability of SR 3.5.1.5 to when pressure > 2000 psig is eliminated. The current licensing basis requires these valves have control power removed at > 1000 psig. Since this is consistent with the applicability for ITS 3.5.1, there is no need to specify the value in SR 3.5.1.5.

3 Consistent with the current licensing basis, an action was added to LCOs 3.5.1 and SR 3.5.2 to permit restoration of control power or air to one valve identified in SRs 3.5.1.5, 3.5.2.1, and 3.5.2.7. The provision to restore power or air to one valve for the specified time does not permit repositioning the valve. With power or air restored to an accumulator isolation valve (valve remains in open position), the accumulator remains OPERABLE. In this circumstance, Condition B includes an allowed outage time equivalent to Condition C.1, but adds the requirement to immediately verify control power and air removed from all other valves identified in the SRs. This Required Action retains the CLB which permits restoring power to an accumulator valve for testing or maintenance without rendering the associated accumulator inoperable.

Since only one of the specified valves is permitted to have air or power restored, the Required Action is structured consistently in LCOs 3.5.1 and 3.5.2.

4 The HBRSEP design is not conducive to performing PIV testing, requiring up to 24 hours to complete the testing. Note 1 to 3.5.2 Applicability | is modified to reflect this change. PIV testing involves isolating each

cold leg injection flow path, one at a time, from a common Safety Injection (SI) header to the respective RCS loop. During the period that the flow path is isolated, flow is only available to two of the three RCS loops. If a LOCA were to occur, 100% of the required SI flow would not be assured if the break occurs on one of the two available loops. Based upon previous plant experience in performing pressure isolation valve testing on the cold leg injection portion of the ECCS, the required time to perform pressure isolation valve testing in plant configurations that result in portions of the ECCS being inoperable is up to 24 hours. This time includes the time necessary to manipulate manual valves, establish stable pressure conditions, and measure leakages for all three cold leg injection pathway pressure isolation valves and includes a small margin of approximately 2 to 3 hours.

5 SR 3.5.1.5 and SR 3.5.2.1 are modified to specify control power removed from the valve operators consistent with the current licensing basis.

6 SR 3.5.2.8 is added to require surveillance of manual valve RHR-764. This surveillance is similar to ITS SR 3.5.2.1 which is performed for motor operated valves.

7 SR 3.5.2.7 is added to require surveillance of air operated valves FCV-605 and HCV-758. This surveillance is similar to ITS SR 3.5.2.1 which is performed for motor operated valves.

8 SR 3.5.2.2 is added to the SR list in SR 3.5.3.1 since it supports OPERABILITY in MODE 4.

9 The specification for Seal Injection Flow is not applicable to HBRSEP since the charging pumps are not used for safety injection.

10 The specification for Boron Injection Tank (BIT) is not applicable to HBRSEP. The BIT does not contain concentrated boric acid at HBRSEP.

11 Consistent with the current licensing basis, the four hour time limit for an inoperable accumulator is retained in the ITS. The four hour period provides a reasonable, although still limited, interval to restore the accumulator to OPERABLE status prior to requiring entry into Condition C.

12 Consistent with the current licensing basis (CLB), ISTS SR 3.5.2.1 is not applicable in MODE 4. The CLB for the valves in SR 3.5.2.1 requires the valves be deenergized in specified positions when reactor pressure is greater than 1000 psig. During a normal plant heatup or cooldown, RCS temperature is well above the upper MODE 4 temperature when RCS pressure is 1000 psig.

13 Not used.

14 The ISTS SR 3.5.1.3 upper limit for accumulator overpressure is modified to reflect the plant specific value. The specified upper limit is the value used in the plant specific ECCS analysis.

15 The ISTS SR 3.5.1.4 upper limit for accumulator boron concentration is modified to reflect the plant specific value. The specified upper limit is the value used in the plant specific ECCS analysis.

16 Not Used.

17 The NUREG bracketed requirement to verify the ECCS piping is full of water is not a CLB requirement for HBRSEP. The HBRSEP Unit No. 2 design does not provide the capability to perform this SR. The SI System does not include vents at system high points which are necessary to perform this SR.

Changes to the CTS ECCS requirements were approved without imposing this additional requirement by issuance of amendments 119 and 153 on 6/20/88 and 11/21/94 respectively.

18 The CTS does not contain a requirement comparable to the bracketed ISTS SR 3.5.2.7 requirement to verify ECCS throttle valve positions. HBRSEP Unit No. 2 design does not utilize ECCS throttle valves with position stops (other than fully open and fully closed) for the purpose of throttling SI flow to the RCS loop with the LOCA break location as provided in the reference ISTS plant design.

19 The ISTS SR 3.5.1.4 upper limit for RWST boron concentration is modified to reflect the plant specific value. The specified upper limit is the value used in the plant specific accident and transient analysis.

20 Consistent with the current licensing basis, Required Action B.1 to verify that valves listed in SR 3.5.1.5 have control power removed immediately and Required Action B.2 to remove control power from the single valve listed in either SR 3.5.2.1 or SR 3.5.2.8 within a Completion Time of 4 hours, are added.

The specified valves are required to be deenergized in the specified position to preclude a single failure (including spurious actuation) from adversely affecting the capability of the ECCS. Since the design of the HBRSEP does not include fully independent trains, some piping

and valves are shared by both ECCS trains. Since the specified valves affect both trains, the provisions afforded by the ITS Actions for a single train are not applicable. Therefore the provisions afforded by Condition B are added to retain the CLB which permits restoring power or air to one valve among the SRs listed for maintenance or testing.

Since only one of the specified valves is permitted to have air or power restored, the Required Actions in Condition B are structured consistently with Required Actions B.1 and B.2 of LCO 3.5.1.

21 ISTS SR 3.5.2.4 requires testing by measuring the pump developed head at only one point of the pump characteristic curve by setting the flow and measuring the pump developed head. At HBRSEP, Unit No. 2, no capability exists in MODES 1, 2, 3, or 4 to set the pump flow at a flow rate substantial enough to permit measurement of the developed head as a variable. The ASME Boiler & Pressure Vessel (B&PV) Code allows alternately to set the head and measure flow to determine measured pump performance to within an acceptable tolerance. This test method is employed at HBRSEP, Unit No. 2 in accordance with the Inservice Testing Program. Therefore, the ITS SR 3.5.2.3 Frequency is modified to 18 months. This permits the ITS SR 3.5.2.3 testing to be performed during unit shutdowns. More frequent testing is performed in accordance with the Inservice Testing Program.

1

BASES (continued)

APPLICABILITY

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 centrifugal charging pump performance is based on a small break LOCA, which establishes the pump performance curve and has less dependence on power. 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. 11

18 Insert B 3.5.2-3

This LCO is only applicable in MODE 3 and above. Below MODE 3, the SI signal setpoint is manually bypassed by operator control, and system functional requirements are relaxed as described in LCO 3.5.3, "ECCS – Shutdown."

30 24 One cold leg safety injection

As indicated in Note 1, the flow path may be isolated for 2 hours in MODE 3, under controlled conditions, to perform pressure isolation valve testing per SR 3.4.14.1. The flow path is readily restorable from the control room. 30 8

As indicated in Note 2, operation in MODE 3 with one ECCS trains declared inoperable pursuant to LCO 3.4.12, "Low Temperature Overpressure Protection (LTOP) System," is necessary for plants with an LTOP arming temperature at or near the MODE 3 boundary temperature of 350°F. LCO 3.4.12 requires that certain pumps be rendered inoperable at and below the LTOP arming temperature. When this temperature is at or near the MODE 3 boundary temperature, time is needed to restore the inoperable pumps to OPERABLE status. Since

In MODES 5 and 6, plant conditions are such that the probability of an event requiring ECCS injection is extremely low. Core cooling requirements in MODE 5 are addressed by LCO 3.4.7, "RCS Loops – MODE 5, Loops Filled," and LCO 3.4.8, "RCS Loops – MODE 5, Loops Not Filled." MODE 6 core cooling requirements are addressed by LCO 3.9.5, "Residual Heat Removal (RHR) and Coolant Circulation – High Water Level," and LCO 3.9.6, "Residual Heat Removal (RHR) and Coolant Circulation – Low Water Level." 4 5

(continued)

Supplement 7

BASES

SURVEILLANCE REQUIREMENTS

SR 3.5.2.2 (continued)

under administrative control, and an improper valve position would only affect a single train. This Frequency has been shown to be acceptable through operating experience.

SR 3.5.2.3

With the exception of the operating centrifugal charging pump, the ECCS pumps are normally in a standby, nonoperating mode. As such, flow path piping has the potential to develop voids and pockets of entrained gases. Maintaining the piping from the ECCS pumps to the RCS full of water ensures that the system will perform properly, injecting its full capacity into the RCS upon demand. This will also prevent water hammer, pump cavitation, and pumping of noncondensible gas (e.g., air, nitrogen, or hydrogen) into the reactor vessel following an SI signal or during shutdown cooling. The 31 day Frequency takes into consideration the gradual nature of gas accumulation in the ECCS piping and the procedural controls governing system operation.

8

SR 3.5.2.4 3

Periodic surveillance testing of ECCS pumps to detect gross degradation caused by impeller structural damage or other hydraulic component problems is required by Section XI of the ASME Code. This type of testing may be accomplished by measuring the pump developed head at only one point of the pump characteristic curve. This verifies both that the measured performance is within an acceptable tolerance of the original pump baseline performance and that the performance at the test flow is greater than or equal to the performance assumed in the plant safety analysis. SRs are specified in the Inservice Testing Program, which encompasses Section XI of the ASME Code. Section XI of the ASME Code provides the activities and Frequencies necessary to satisfy the requirements.

35

35 Insert B 3.5.2-7

SR 3.5.2.5 4 and SR 3.5.2.6 5

These Surveillances demonstrate that each automatic ECCS valve actuates to the required position on an actual or

(continued)

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Insert B 3.5.2-7

The Frequency of 18 months is acceptable based on operating experience and other more frequent testing performed in accordance with the Inservice Testing Program.

analysis for a main steam line break. The minimum RWST temperature is used in the containment analysis for inadvertent spray, ECCS backpressure for Loss of Coolant accidents and reactivity analysis for main steam line breaks.

26 The bases are modified to clarify that the RWST minimum volume assures long term cooling capability.

27 The bases are modified to clarify the impact of reduced containment pressure on ECCS performance.

28 The specification for Seal Injection Flow is not applicable to HBRSEP since the charging pumps are not used for safety injection.

29 The specification for Boron Injection Tank (BIT) is not applicable to HBRSEP. The BIT does not contain concentrated boric acid at HBRSEP.

30 The bases to Note 1 to 3.5.2 Applicability is modified to reflect this change. PIV testing involves isolating each cold leg injection flow path, one at a time, from a common Safety Injection (SI) header to the respective RCS loop. During the period that the flow path is isolated, flow is only available to two of the three RCS loops. If a LOCA were to occur, 100% of the required SI flow would not be assured if the break occurs on one of the two available loops. Based upon previous plant experience in performing pressure isolation valve testing on the cold leg injection portion of the ECCS, the required time to perform pressure isolation valve testing in plant configurations that result in portions of the ECCS being inoperable is up to 24 hours. This time includes the time necessary to manipulate manual valves, establish stable pressure conditions, and measure leakages for all three cold leg injection pathway pressure isolation valves and includes a small margin of approximately 2 to 3 hours. Additionally, the statement, "the flow path is readily restorable from the control room," is deleted from the ISTS bases because the valves utilized to isolate the SI cold leg injection headers are manual valves and portions of the system are depressurized through a vent during pressure isolation valve testing.

31 Appropriate bases are included for the Required Action B.1 to LCOs 3.5.1 and SR 3.5.2.

32 Clarification regarding application of the single failure criteria to the ECCS cold leg injection check valves is provided.

33 The HBRSEP analysis indicates a return to power is possible after a steam line break. Refer to UFSAR section 15.1.5.

34 The current licensing basis regarding non-applicability of this specification to the Safety Injection System hot leg pathways, including valves, is retained. The valves in the hot leg safety injection

pathways are required to be closed with control power removed. In this configuration, they are not OPERABLE. Manual operator action is required to restore control power and operate the valves.

35 The bases to ISTS SR 3.5.2.4 states that testing may be accomplished by measuring the pump developed head at only one point of the pump characteristic curve. The method normally utilized in the reference ISTS plant is to set the flow and measure the pump developed head. At HBRSEP, Unit No. 2,, no capability exists in MODES 1, 2, 3, or 4 to set the pump flow at a flow rate substantial enough to permit measurement of the developed head as a variable. The ASME Boiler & Pressure Vessel (B&PV) Code allows alternately to set the head and measure flow to determine measured pump performance to within an acceptable tolerance. This test method employed is at HBRSEP, Unit No. 2 in accordance with the Inservice Testing Program. Therefore, the Bases to ITS SR 3.5.2.3 is modified to reflect the change made to the SR Frequency and states the Frequency of 18 months is acceptable based on operating experience and other more frequent testing performed in accordance with the Inservice Testing Program.

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.2 ECCS – Operating

LCO 3.5.2 Two ECCS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3

------------------------------NOTES------------------------------

1. In MODE 3, one cold leg safety injection (SI) pump flow path may be isolated by closing the isolation valves for up to 24 hours to perform pressure isolation valve testing per SR 3.4.14.1.

2. Operation in MODE 3 with one required SI pump declared inoperable pursuant to LCO 3.4.12, "Low Temperature Overpressure Protection (LTOP) System," is allowed for up to 4 hours or until the temperature of all RCS cold legs exceeds 375°F, whichever comes first.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more trains inoperable. AND At least 100% of the ECCS flow equivalent to a single OPERABLE ECCS train available.	A.1 Restore train(s) to OPERABLE status.	72 hours
B. One valve identified in SR 3.5.2.1 or SR 3.5.2.7 with control power or air restored.	B.1 Verify control power is removed to all valves identified in SR 3.5.1.5. AND	Immediately (continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.3	Verify each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head.	18 months
SR 3.5.2.4	Verify each ECCS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	18 months
SR 3.5.2.5	Verify each ECCS pump starts automatically on an actual or simulated actuation signal.	18 months
SR 3.5.2.6	Verify, by visual inspection, the ECCS train containment sump suction inlet is not restricted by debris and the suction inlet trash racks and screens show no evidence of structural distress or abnormal corrosion.	18 months

(continued)

BASES

APPLICABILITY (continued)

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.

Although the LCO is applicable in MODES 1, 2 and 3, the pressurizer low pressure and high steam differential pressure SI signals may be blocked when pressurizer pressure is < 2000 psig. The high steam flow coincident with low steam pressure or low average coolant temperature SI signal may be blocked when average coolant temperature is < 543°F. These blocks facilitate plant heatup and cooldown (Ref. 4).

As indicated in Note 1, one cold leg safety injection flow path may be isolated for 24 hours in MODE 3, under controlled conditions, to perform pressure isolation valve testing per SR 3.4.14.1.

As indicated in Note 2, operation in MODE 3 with one ECCS train declared inoperable pursuant to LCO 3.4.12, "Low Temperature Overpressure Protection (LTOP) System," is necessary with an LTOP arming temperature at or near the MODE 3 boundary temperature of 350°F. LCO 3.4.12 requires that certain pumps be rendered inoperable at and below the LTOP arming temperature. Since this temperature is at or near the MODE 3 boundary temperature, time is needed to restore the inoperable pumps to OPERABLE status.

In MODES 5 and 6, plant conditions are such that the probability of an event requiring ECCS injection is extremely low. Core cooling requirements in MODE 5 are addressed by LCO 3.4.7, "RCS Loops – MODE 5, Loops Filled," and LCO 3.4.8, "RCS Loops – MODE 5, Loops Not Filled." MODE 6 core cooling requirements are addressed by LCO 3.9.4, "Residual Heat Removal (RHR) and Coolant Circulation – High Water Level," and LCO 3.9.5, "Residual Heat Removal (RHR) and Coolant Circulation – Low Water Level."

ACTIONS

A.1

With one or more trains inoperable and at least 100% of the ECCS flow equivalent to a single OPERABLE ECCS train

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.5.2.2

Verifying the correct alignment for manual, power operated, and automatic valves in the ECCS flow paths provides assurance that the proper flow paths will exist for ECCS operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since these were verified to be in the correct position prior to locking, sealing, or securing. A valve that receives an actuation signal is allowed to be in a nonaccident position provided the valve will automatically reposition within the proper stroke time. This Surveillance does not require anytesting or valve manipulation. Rather, it involves verification that those valves capable of being mispositioned are in the correct position. The 31 day Frequency is appropriate because the valves are operated under administrative control, and an improper valve position would only affect a single train. This Frequency has been shown to be acceptable through operating experience.

SR 3.5.2.3

Periodic surveillance testing is required of ECCS pumps to detect gross degradation caused by impeller structural damage or other hydraulic component problems. This type of testing may be accomplished by measuring the pump developed head at only one point of the pump characteristic curve. This verifies both that the measured performance is within an acceptable tolerance of the original pump baseline performance and that the performance at the test flow is greater than or equal to the performance assumed in the plant safety analysis. Alternately, a Note to SR 3.5.2.3 permits pump performance verification by setting the pump head and measuring the test flow. The Frequency of 18 months is acceptable based on operating experience and more frequent testing performed in accordance with the Inservice Testing Program.

SR 3.5.2.4 and SR 3.5.2.5

These Surveillances demonstrate that each automatic ECCS valve actuates to the required position on an actual or

(continued)

SUPPLEMENT 7
CONVERSION PACKAGE SECTION 3.6
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 14 to Serial: RNP-RA/96-0141.

	Remove Page	Insert Page
a.	Part 1, "Markup of Current Technical Specifications (CTS)"	
	1-4, 4.4-1, 4.4-7(3.6.1)	1-4, 4.4-1, 4.4-7(3.6.1)
b.	Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
	1, 5, 10, 22, and 23	1, 1a, 5, 10, 10a, 22, and 23
c.	Part 3, "No Significant Hazards Consideration (NSHC), And Basis for Categorical Exclusion form 10 CFR 51.22"	
	NA	
d.	Part 4, "Markup of NUREG-1431, Revision 1 Standard Technical Specifications Westinghouse Plants, (ISTS)"	
	3.6-2(3.6.1)	3.6-2(3.6.1)
	3.6-12(3.6.3)	3.6-12(3.6.3)
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	1, 4, and 5	1, 4, and 5
f.	Part 6, "Markup of ISTS Bases"	
	-	Insert B 3.6.1-3 (page B 3.6-8a)
	B 3.6-22, B 3.6-28 (B 3.6.2),	B 3.6-22, B 3.6-28(B 3.6.2),
	B 3.6.3 (pages B 3.6-36, B 3.6-40),	B 3.6-36, B 3.6-40(B 3.6.3),
	B 3.6-55 (B 3.6.5),	B 3.6-55(B 3.6.5)
	B 3.6-111 (B 3.6.7)	B 3.6-111(B 3.6.7)
g.	Part 7, "Justification for Differences (JFDs) to ISTS Bases"	
	5	5
h.	Part 8, "Proposed HBRSEP, Unit No. 2 ITS"	
	3.6.3 (page 3.6-11)	3.6.3 (page 3.6-11)
i.	Part 9, "Proposed Bases to HBRSEP, Unit No. 2 ITS"	
	B 3.6-7, B 3.6-12 (B 3.6.2),	B 3.6-7, B 3.6-12 (B 3.6.2),
	B 3.6-22, B 3.6-23, B 3.6-24,	B 3.6-22, B 3.6-23, B 3.6-24,
	B 3.6-24a (B 3.6.3),	B 3.6-24a (B 3.6.3),
	B 3.6-31, B 3.6-44 B 3.6-45,	B 3.6-31, B 3.6-44, B 3.6-45,
	B 3.6-46 (B 3.6.5)	B 3.6-46 (B 3.6.5)

SUPPLEMENT 7
CONVERSION PACKAGE SECTION 3.6
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 14 to Serial: RNP-RA/96-0141.

	Remove Page	Insert Page
i.	Part 9, "Proposed Bases to HBRSEP, Unit No. 2 ITS" (continued)	
	B 3.6-46a(B 3.6.7)	B 3.6-46a (B 3.6.7)
j.	Part 10, "ISTS Generic Changes"	
	NA	

Specification 3.6.1

ITS

a. All non-automatic containment isolation valves not required for normal operation are closed and blind flanges are properly installed where required. — see 3.6.3

b. The equipment door is properly closed and sealed. ← LA 6

c. At least one door in the personnel air lock is properly closed and sealed. — see 3.6.2

d. All automatic containment isolation trip valves required to be closed during accident conditions are operable or are secured closed except as stated in Specification 3.6.3. Manual valves qualifying as automatic containment isolation valves are secured closed. ← see 3.6.3

[SR 3.6.1.3]
[SR 3.6.1.1] e. The uncontrolled containment leakage satisfies Specification 4.4. — A22

1.8 QUADRANT POWER TILT

The quadrant power tilt is defined as the ratio of maximum to average of the upper excore detector currents or the lower excore detector currents, whichever is greater. If one excore is out of service, the three in-service units are used in computing the average. — see 3.6.1

1.9 DELETED

1.10 STAGGERED TEST BASIS

A Staggered Test Basis shall consist of:

a. A test schedule for n systems, subsystems, trains or designated components obtained by dividing the specified test interval into n equal subintervals.

Specification 3.6.1

ITS

A1

4.4 CONTAINMENT TESTS

Applicability

Applies to containment leakage and structural integrity.

Objective

To verify that potential leakage from the containment and that pre-stressing tendon loads are maintained within acceptable values.

Specification

4.4.1 Operational Leakage Rate Testing

For Type A tests — A5

[SR 3.6.1.3] Required visual examinations and leakage rate testing shall be performed in accordance with the Containment Leakage Rate Testing Program, except for testing of the containment personnel air lock. The containment personnel air lock shall be tested every six months. — See 3.6.2

Add SR 3.6.1.1 — A5

Specification 3.6.1

(A1)

ITS

used to verify containment structural integrity in accordance with the Containment Tendon Surveillance Program

(A3)

4.4.4.3 Acceptance Criteria

[SR 3.6.1.2] a. The removed tendon will be ~~sent to a commercial laboratory qualified to perform material tests and analyses. The tendon bars will be removed from the sheath and the grout removed. A visual inspection will be performed to detect and record evidence of corrosion. Tensile tests will be performed on selected bars to determine ultimate strengths. The results of these tests will be compared with the original properties of the original bar material to ascertain significant changes that have occurred. A qualified engineering firm will be retained to assess the results of these tests and to report thereon.~~ ← See 5.5.6

b. Observation of the structural test at design pressure indicating no significant differences in containment growth and crack pattern spacing and width from that during the proof test shall be considered as demonstrating the continual integrity of the structure. It is realized that the deflections, in the prestressed direction particularly, will be small, that the significance of differences in these small deflections will be difficult to evaluate, and therefore that only a gross difference in the structure, such as a large loss of prestress force, would be apparent from the measurements. The difference in measurements, if any, will be examined considering the predictable range of variation of time dependent changes in material properties, the thermal conditions at the time of the test, instrument error and other pertinent factors. ← See 5.5.16

Supplement 7

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 CTS 3.6.1 specifies requirements for containment integrity. The specific terminology states that, ". . . containment integrity (as defined in 1.7) shall not be violated unless the reactor is in the cold shutdown condition." The specific wording for CTS 3.6.1.a provides the plant condition for which containment integrity <u>is not</u> required. ITS LCO 3.6.1 provides an equivalent requirement but it is stated in terms of when the containment <u>is</u> required to be OPERABLE. Therefore, this is an administrative change and is consistent with ISTS.

A3 CTS 4.4.4.1 requires performance of specified tendon surveillances and CTS 4.4.4.2 requires performance of specified structural tests. A requirement for verification of overall containment structural integrity is implied but not specifically delineated in CTS 4.4.4.1 and 4.4.4.2. ITS SR 3.6.1.2 includes a specific surveillance requirement associated with overall Containment Structural Integrity. The details of the acceptance criteria for the tendon surveillance program are discussed in the Documentation of Changes (DOC) for ITS Section 5.0 as documents relocated to licensee controlled documents. Therefore, this is an administrative change and is consistent with ISTS.

A4 CTS 4.4.2.b requires leak testing of isolation valves pressurized by the penetration pressurization system in accordance with the Containment Leakage Rate Testing program.

The requirements for leak testing of isolation valves pressurized by the penetration pressurization system is not retained as a separate requirement in the ITS. ITS SR 3.6.1.1 requires performance of containment leakage rate testing for Type B and C tests, except for containment air lock testing, be in accordance with 10 CFR 50, Appendix J, Option A as modified by approved exemptions. ITS 3.6.2 provides requirements for containment air lock testing. CTS 6.12, Containment Leakage Rate Testing Program, requires Type B and C leakage rate testing be performed in accordance with 10 CFR 50, Appendix J, Option A. Although CTS 6.12 does not explicitly provide for approved exemptions to 10 CFR 50, Appendix J, Option A, this requirement is implicit, since an approved exemption effectively modifies the requirements of Appendix J

for the applicable facility. Therefore, this is an administrative change and is consistent with ISTS.

A18 A note comparable to ITS 3.6.3 Action Note 5 does not exist. ITS 3.6.3 Action Note 5 requires Entry into Applicable Condition and Required Actions of LCO 3.6.8, Isolation Valve Seal Water (IVSW) System. Although not explicitly stated, this requirement is encompassed by the application of the CTS definition 1.7 CONTAINMENT INTEGRITY. Therefore, this is an administrative change and is consistent with ISTS.

A19 Although not uniquely delineated as a CTS surveillance requirement, CTS 4.0 requires testing ASME Code 1, 2 and 3 pumps in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda. The Containment Spray pumps are included within the scope of this testing requirement. ITS 3.6.6.4 requires verification of the Containment Spray pumps developed head in accordance with the IST program. Therefore, this is an administrative change and is consistent with ISTS.

A20 CTS 3.3.2.1, 3.3.2.2 and 3.3.2.3 collectively impose requirements for the Spray Additive System with the reactor critical and in hot shutdown. These CTS operating conditions encompass ITS MODEs 1, 2, 3 and 4. ITS 3.6.7 specifies requirements for the Spray Additive System in MODEs 1, 2, 3 and 4. Therefore, this is an administrative change and is consistent with ISTS.

A21 Not used.

A22 CTS 1.7.e requires containment uncontrolled leakage to satisfy Specification 4.4. ITS SR 3.6.1.1 and SR 3.6.1.3 provide leakage limits | for containment. CTS 1.7.e is therefore encompassed in SR 3.6.1.1 and SR 3.6.1.3. Therefore, this is an administrative change and is consistent with ISTS.

A23 Not used.

A24 Although not uniquely delineated as a CTS surveillance requirement, CTS 4.0 requires testing ASME Code 1, 2 and 3 valves in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda. The IVSW air operated header injection valves are included within the scope of this testing requirement. ITS SR 3.6.8.3 requires testing the air operated header injection valve in accordance with the IST program. Therefore, this is an administrative change and is consistent with ISTS.

A25 Not used.

A26 CTS Notes comparable to the Notes to SR 3.6.2.1 do not exist. Note 1 provides clarification regarding the impact of an inoperable airlock door upon previous leakage test results. Failure of an airlock door leak test does not invalidate the previous successful performance of the overall air lock leakage test and therefore render the overall airlock

is not locked sealed or otherwise secured in position actuates to the isolated position on an actual or simulated actuation signal." Since the ITS requirements are more prescriptive, this is an additional restriction upon plant operation and is consistent with ISTS. Automatic containment isolation valves close on a containment isolation signal to prevent leakage of radioactive material from containment following a DBA. This SR ensures that each automatic containment isolation valve will actuate to its isolation position on a containment isolation signal. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant 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 this Surveillance when performed at the 18 month Frequency. The Frequency was concluded to be acceptable from a reliability standpoint.

M13 CTS surveillance requirements comparable to ITS SR 3.6.3.2, SR 3.6.3.3 and associated Notes and SR 3.6.3.6 do not exist. SR 3.6.3.2 helps to ensure that post accident leakage of radioactive fluids or gases outside of the containment boundary is within design limits. Since verification of valve position for containment isolation valves outside containment except for Penetration Pressurization System valves ≤ 3/8 inch in diameter is relatively easy, the 31 day Frequency is based on engineering judgment and was chosen to provide added assurance of the correct positions. Verification of the position of Penetration Pressurization System valves, ≤ 3/8 inch in diameter at an 18 month Frequency is reasonable and is consistent with current procedures and methodology. SR 3.6.3.3 requires verification that each containment isolation manual valve and blind flange located inside containment and not locked, sealed or otherwise secured and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside of the containment boundary is within design limits. For containment isolation valves inside containment, the Frequency of "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is appropriate since these containment isolation valves are operated under administrative controls and the probability of their misalignment is low. Verifying that each 42 inch inboard containment purge valve is blocked to restrict opening to ≤ 70%, in accordance with SR 3.6.3.6, is required to ensure that the valves can close under DBA conditions within the times assumed in the analyses of References 1 and 2. The 18 month Frequency is appropriate because the blocking devices are typically removed only during a refueling outage. These are additional restrictions upon plant operation and are consistent with the NUREG.

M14 CTS 3.6.2 permits containment pressure to be outside specified limits for up to eight hours prior to requiring the unit be placed in Hot Shutdown. ITS 3.6.4 permits only 1 hour with this condition. When

containment pressure is not within the limits of the LCO, it must be restored to within these limits within 1 hour. The Required Action is necessary to return operation to within the bounds of the containment analysis. The 1 hour Completion Time is consistent with the Completion

L8 CTS 4.5.1.6 requires verification of proper operation of essential features including valves, dampers and piping at a monthly frequency. This surveillance requirement is not retained in the ITS as a unique SR, however the containment cooling features tested by this surveillance are encompassed within other ITS SRs. Fan operation and cooling water flow rate through the coolers is verified at a monthly (31 day) frequency by ITS SR 3.6.6.2 and SR 3.6.6.3 respectively. Proper operation of the service water valves is verified on a quarterly frequency in accordance with the Inservice Testing Program. Overall cooling train operation including proper damper operation is verified at an 18 month frequency by SR 3.6.6.7.

Reducing the frequency for the verification of OPERABILITY of the valves and dampers is a less restrictive requirement upon plant operation and is consistent with ISTS. The quarterly frequency for the valve tests is based on engineering judgment and has been shown to be acceptable through industry operating experience. Industry operating experience has shown that these components usually pass the Surveillances when performed at the quarterly Frequency. The 18 month Frequency for the overall verification of cooling train OPERABILITY including proper damper operation is based on engineering judgment and has been shown to be acceptable through industry operating experience. Industry operating experience has shown that these components usually pass the Surveillances when performed at the 18 month Frequency. Therefore, the Frequencies are concluded to be acceptable from a reliability standpoint.

L9 With a single Spray Additive System flowpath inoperable, CTS 3.3.2.2.c requires the flowpath be restored to OPERABLE status within 24 hours or the unit be placed in Hot Shutdown using normal operating procedures. If the components are not restored within an additional 48 hours, the unit must be placed in Cold Shutdown using normal operating procedures. ITS 3.6.7 RA A.1 requires restoring the Spray Additive System to OPERABLE status within 72 hours provided at least 100% of the flow equivalent to a single OPERABLE Spray Additive train available to an OPERABLE Containment Spray Train is still available. If the Required Action and associated Completion Time is not met, ITS 3.6.7 RA C.1 and C.2 require the unit to be placed in MODE 3 within 6 hours and MODE 5 within an additional 78 hours. Therefore, these are less restrictive requirements upon plant operation and are consistent with ISTS.

The 72 hour Completion Time to restore the Spray Additive System to OPERABILITY takes into account the redundant flow path capabilities and the low probability of the worst case DBA occurring during this period. In this Condition the iodine removal capability remains consistent with the assumptions of the accident analysis. The Completion Time of 6 hours to achieve MODE 3 is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and

without challenging plant systems. The extended interval to reach MODE 5 allows 48 hours for restoration of the Spray Additive System in MODE 3 and 36 hours to reach MODE 5. This is reasonable when considering the reduced pressure and temperature conditions in MODE 3 for the release of radioactive material from the Reactor Coolant System. Requiring the plant to be in MODE 5 within 85 hours is a less restrictive requirement upon plant operation and is more restrictive than ISTS. Permitting time to restore the Spray Additive System to OPERABLE status is preferable to mandating a unit shutdown with the increased risk of shutdown transients.

L10 With the Spray Additive System inoperable, CTS does not provide specific actions. In this situation the actions are mandated by CTS 3.0. CTS 3.0 requires the unit be placed in hot shutdown within 8 hours and cold shutdown within an additional 30 hours. With the Spray Additive System inoperable for reasons other than Condition A, ITS 3.6.7 RA B.1 requires one Spray Additive System train be restored to OPERABILITY within 1 hour. With Required Action and associated Completion Time not met, ITS 3.6.7 RA C.1 and C.2 require the unit be placed in MODE 3 within 6 hours and MODE 5 within 84 hours respectively. The extended interval to reach MODE 5 allows 48 hours for restoration of the Spray Additive System in MODE 3 and 36 hours to reach MODE 5. This is reasonable when considering the reduced pressure and temperature conditions in MODE 3 for the release of radioactive material from the Reactor Coolant System. Requiring the plant to be in MODE 5 within 85 hours is a less restrictive requirement upon plant operation and is more restrictive than ISTS. Permitting time to restore one Spray Additive System train to OPERABLE status is preferable to mandating a unit shutdown with the increased risk of shutdown transients.

L11 CTS Table 4.1.2, Item 5 requires sampling the Spray Additive tank for NaOH concentration on a monthly frequency with a maximum time between tests of 45 days. ITS 3.6.7.3 has a frequency of 184 days. Therefore, this is a less restrictive requirement upon plant operation and is consistent with ISTS.

The 184 day Frequency is sufficient to ensure that the concentration level of NaOH in the spray additive tank remains within the established limits. This is based on the low likelihood of an uncontrolled change in concentration (the tank is normally isolated) and the probability that any substantial variance in tank volume will be detected. There has not been a recent (i.e., past five years) failure of this surveillance, and therefore the relaxed surveillance Frequency is supported by operating experience.

L12 With one of the redundant actuation valves associated with the automatic IVSW headers inoperable, CTS 3.3.6.2 requires the redundant valve be promptly determined to be OPERABLE and the inoperable valve be restored

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
[Doc A5] [1.7.e] SR 3.6.1.1	Perform required visual examinations and leakage rate testing except for containment air lock testing, in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions. Option A The leakage rate acceptance criterion is ≤ 1.0 L_a. However, during the first unit startup following testing performed in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions, the leakage rate acceptance criterion is < 0.6 L_a for the Type B and Type C tests, and < 0.75 L_a for the Type A test.	-----NOTE------ SR 3.0.2 is not applicable --------------- In accordance with 10 CFR 50, Appendix J, as modified by approved exemptions Option A
[4.4.4.3] SR 3.6.1.2	Verify containment structural integrity in accordance with the Containment Tendon Surveillance Program.	In accordance with the Containment Tendon Surveillance Program

[4.4.1] [1.7.e] INSERT 3.6.1-2 (1)

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CTS

(5)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.3.1	Verify each [42] inch purge valve is sealed closed. except for one purge valve in a penetration flow path while in Condition E of this LCO.	31 days
[3.6.4.1] SR 3.6.3.1 (1)	Verify each (42) [8] inch {supply + exhaust} purge valve {+ each 6 inch pressure + Vacuum relief valve} is closed. except when the [8] inch containment purge valves are open for pressure control. ALARA or air quality considerations for personnel entry. or for Surveillances that require the valves to be open.	31 days
[M13] SR 3.6.3.2 (2)	NOTES (5) 1. Valves and blind flanges in high radiation areas may be verified by use of administrative controls. (29)	
[M13]	Verify each containment isolation manual valve and blind flange that is located outside containment and not locked, sealed or otherwise secured (16) and required to be closed during accident conditions is closed. except for containment isolation valves that are open under administrative controls.	31 days for containment isolation manual valves (except Penetration Pressurization System Valves with a diameter ≤3/8 inch) and blind flanges AND 18 months for Penetration Pressurization System Valves with a diameter ≤ 3/8 inch (29)

Insert 3.6.3-2 (25) (21)

(continued)

1 ITS SR 3.6.1.3 is created to adopt 10 CFR 50, Appendix J, Option B for containment visual examinations and Type A leakage rate testing. SR 3.6.1.1 is modified to limit its applicability to Type B and C leakage rate testing. This is necessary since HBRSEP adopted Appendix J, Option B for Type A testing only. Appendix J, Option A is still applicable to Type B and C testing. Additionally, NUREG SR 3.6.1.1 is modified to eliminate the reference to visual examinations. Appendix J visual examination requirements are associated with Type A leakage rate testing and are encompassed within ITS SR 3.6.1.3.

2 The HBRSEP design provides for one containment airlock.

3 Not Used.

4 The HBRSEP design includes closed systems with isolation valves inside the containment. The completion time for ITS 3.6.3 Required Action (RA) C.2 is modified to provide an appropriate completion time for the verification of isolation for valves inside the containment.

5 Consistent with the current licensing basis, the 42 inch purge supply and exhaust valves and the 6 inch pressure and vacuum relief valves may be opened for safety related reasons including operational testing and surveillances. The 42 inch and 6 inch valves may not be opened simultaneously. This requirement was incorporated into the CTS by Amendment Number 99 dated 7/3/86.

6 SR 3.6.6.3 is modified to reflect that the containment cooling flow rate limit is applied separately to each cooling unit.

7 A 72 hour completion time is not justified for an inoperable Spray Additive System at HBRSEP. LCO 3.6.7 Action A is modified to provide a 72 hour completion time for an inoperable train of the Spray Additive System. A new Condition was developed for the situation with the Spray Additive System inoperable for reasons other than Condition A. The Required Action for this new Condition requires restoring one Spray Additive System train to OPERABLE status within 1 hour.

8 SR 3.6.7.2 is modified to eliminate the spray additive tank volume upper limit consistent with the current licensing basis.

9 SR 3.6.7.3 is modified to eliminate the spray additive tank NaOH concentration upper limit consistent with the current licensing basis.

10 The HBRSEP design does not have the capability to verify the flow (rate) from the spray additive tank. As such, this SR is not part of the CLB.

11 The HBRSEP design does not provide permanently installed Hydrogen Recombiners. Therefore, 3.6.8 is used for the Isolation Valve Seal

Appendix J. To address the NRC concern regarding periodic surveillance of the resilient seals on the containment purge and vent valves, the resilient seals on the containment purge and vent valves will be replaced this refueling outage, and will be replaced every other refueling outage henceforth. An evaluation has been performed of the seal material which found that the seal material life expectancy exceeds the proposed replacement frequency. An evaluation has been performed in accordance with 10 CFR 50.59, and the evaluation has found that this modification does not pose an unreviewed safety question.

24 The HBRSEP design provides position limits on the inboard 42 inch purge valves only.

25 There is no basis to exclude the 42 inch purge supply and exhaust valves from being open or open under administrative control. Consistent with the current licensing basis, these valves may be opened for specified purposes provided they are not opened concurrently with the 6 inch pressure and vacuum relief valves.

26 Brackets are removed and plant specific values are incorporated.

27 Condition D is augmented to address the Current Licensing Basis prohibition against the simultaneous operation of containment purge and either pressure or vacuum relief penetrations.

28 SR 3.6.2.1 and Note 2 to SR 3.6.2.1 are modified to add a reference to Option A to reflect the CLB for containment airlock testing. The specific airlock leakage acceptance criteria are not adopted because no such requirement currently exists. The airlock's contribution to Type B and C containment leakage is limited such that the Type B and C containment leakage cannot exceed the applicable Type B and C containment leakage limits.

29 ITS SR 3.6.3.2 requires that each containment isolation manual valve and blind flange that is located outside containment and not locked, sealed or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves open under administrative controls. The Frequency is modified to require this SR to be performed at an 18 month Frequency for Penetration Pressurization System (PPS) valves with a diameter of $\leq$ 3/8 inch.

The valves affected by this change are the PPS valves located in the North and South Electrical Penetration Vaults. These valves provide isolation for the penetration sleeve from the PPS or provide convenient test connections for local leak rate testing apparatus. The isolation valves and test connections are maintained in the closed position during normal operations and are only repositioned for penetration testing.

All piping involved is 3/8 inch tubing connected to a "canned" penetration which is welded to the containment liner inside the containment. The affected valves are not subject to accident pressure during an accident unless the penetration sleeve fails. There are a total of approximately 104, 3/8 inch, valves that ITS SR 3.6.3.2. The justification for this change is as follows:

a. The North and South Electrical Penetration Vaults at HBRSEP Unit No. 2 are not equipped for routine access to each penetration. As a result, monthly verification of PPS valves at each penetration would require building scaffolding and/or treading over electrical penetrations resulting in some risk of damaging cabling or the penetration seal itself.

b. The affected valves are only operated for penetration testing purposes. Their pre-test and post-test positions are verified and documented in plant procedures.

c. The valves are not subject to containment atmosphere unless the penetration itself fails on the containment side. Therefore, two failures are required for a degradation of the integrity of containment (i.e., the penetration must fail and the valve for that particular penetration must be mispositioned).

d. The consequences of a mispositioning of one of the affected valves is minimal assuming this were the release path.

e. The North and South Electrical Penetration Vaults penetration areas are only rarely accessed, namely for penetration testing. Because of the low maintenance requirements for the equipment in the area (i.e., cabling and cable penetrations), it is very unlikely that an inadvertent mispositioning of a valve would occur due to activities in the area.

Insert B 3.6.1-3 associated with ISTS markup page B 3.6-8 and supplied with the original submittal has been deleted. This insert number has been reused in supplement 2 and is associated with ISTS markup page B 3.6-10a.

BASES (continued)

APPLICABLE SAFETY ANALYSES

The DBAs that result in a release of radioactive material within containment are a loss of coolant accident and a rod ejection accident (Ref. 2). In the analysis of each of these accidents, it is assumed that containment is OPERABLE such that release of fission products to the environment is controlled by the rate of containment leakage. The containment was designed with an allowable leakage rate of [0.1]% of containment air weight per day (Ref. 2). This leakage rate is defined in 10 CFR 50, Appendix J (Ref. 1), as L_a = [0.1]% of containment air weight per day, the maximum allowable containment leakage rate at the calculated peak containment internal pressure P_a = [14.4] psig following a DBA. This allowable leakage rate forms the basis for the acceptance criteria imposed on the SRs associated with the air locks.

The containment air locks satisfy Criterion 3 of the NRC Policy Statement.

LCO

Each containment air lock forms part of the containment pressure boundary. As part of containment, the air lock safety function is related to control of the containment leakage rate resulting from a DBA. Thus, each air lock's structural integrity and leak tightness are essential to the successful mitigation of such an event.

Each air lock is required to be OPERABLE. For the air lock to be considered OPERABLE, the air lock interlock mechanism must be OPERABLE, the air lock must be in compliance with the Type B air lock leakage test, and both air lock doors must be OPERABLE. The interlock allows only one air lock door of an air lock to be opened at one time. This provision ensures that a gross breach of containment does not exist when containment is required to be OPERABLE. Closure of a single door in each air lock is sufficient to provide a leak tight barrier following postulated events. Nevertheless, both doors are kept closed when the air lock is not being used for normal entry into and exit from containment.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the

(continued)

Supplement 7

(1)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.2.2 (continued)

than every 184 days. The 184 day Frequency is based on engineering judgment and is considered adequate in view of other indications of door and interlock mechanism status available to operations personnel.

24 month

Insert B3.6.2-4

TSTF-17 R1

(20)

REFERENCES

1. 10 CFR 50, Appendix J.
2. (U) FSAR, Section [6.2].

Paragraph 6.9.2

Supplement 7

BASES

ACTIONS (continued)

C.1 and C.2

With one or more penetration flow paths with one containment isolation valve inoperable, the inoperable valve flow path must be restored to OPERABLE status or the affected penetration flow path must be isolated. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, and a blind flange. A check valve may not be used to isolate the affected penetration flow path. Required Action C.1 must be completed within the 4 hour Completion Time. The specified time period is reasonable considering the relative stability of the closed system (hence, reliability) to act as a penetration isolation boundary and the relative importance of maintaining containment integrity during MODES 1, 2, 3, and 4. In the event the affected penetration flow path is isolated in accordance with Required Action C.1, the affected penetration flow path must be verified to be isolated on a periodic basis. This periodic verification is necessary to assure leak tightness of containment and that containment penetrations requiring isolation following an accident are isolated. The Completion Time of once per 31 days for verifying that each affected penetration flow path is isolated is appropriate because the valves are operated under administrative controls and the probability of their misalignment is low.

Condition C is modified by a Note indicating that this Condition is only applicable to those penetration flow paths with only one containment isolation valve and a closed system. This Note is necessary since this Condition is written to specifically address those penetration flow paths in a closed system.

Required Action C.2 is modified by a Note that applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of these valves, once they have been verified to be in the proper position, is small.

25 Insert B3.6.3-11

20 72

20 "For isolation devices outside containment"

Insert B3.6.3-13 20

TSTF 30, R.1 "the closed system must meet the requirements of Ref. 3"

27 Insert B3.6.3-14

(continued)

is applicable to containment isolation valves (except Penetration Pressurization System valves with a diameter ≤ 3/8 inch) + blind flanges. The 18 month Frequency is applicable to Penetration Pressurization System valves with a diameter ≤ 3/8 inch. These Frequencies are

① 20

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.3.4 (2)

This SR requires verification that each containment isolation manual valve and blind flange located outside containment and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside of the containment boundary is within design limits. This SR does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those containment isolation valves outside containment and capable of being mispositioned are in the correct position. Since verification of valve position for containment isolation valves outside containment is relatively easy, the 31 day Frequency is based on engineering judgment and was chosen to provide added assurance of the correct positions. The SR specifies that containment isolation valves that are open under administrative controls are not required to meet the SR during the time the valves are open.

(20) and not locked, sealed or otherwise secured

were

TSTF 45, R.1

Insert B3.6.3.15

The Note applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, 3 and 4 for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in the proper position, is small. (20)

SR 3.6.3.5 (3)

This SR requires verification that each containment isolation manual valve and blind flange located inside containment and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside of the containment boundary is within design limits. For containment isolation valves inside containment, the Frequency of "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is appropriate since these containment isolation valves are operated under

(20) The 18 month Frequency for Penetration Pressurization System valves ≤3/8 inch in diameter is considered acceptable based on the low probability of these valves being mispositioned and the minimal consequences associated with the mispositioning of one of these valves.

(continued)

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BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.6.5.1

Verifying that containment average air temperature is within the LCO limit ensures that containment operation remains within the limit assumed for the containment analyses. In order to determine the containment average air temperature, a volumetric an arithmetic average is calculated using measurements taken at locations within the containment selected to provide a representative sample of the overall containment atmosphere. The 24 hour Frequency of this SR is considered acceptable based on observed slow rates of temperature increase within containment as a result of environmental heat sources (due to the large volume of containment). Furthermore, the 24 hour Frequency is considered adequate in view of other indications available in the control room, including alarms, to alert the operator to an abnormal containment temperature condition.

REFERENCES

1. U FSAR, Section 6.2.
2. 10 CFR 50.49.

①

BASES

APPLICABLE SAFETY ANALYSES (continued)

The DBA analyses assume that one train of the Containment Spray System/Spray Additive System is inoperable and that the entire spray additive tank volume is added to the remaining Containment Spray System flow path.

The Spray Additive System satisfies Criterion 3 of the NRC Policy Statement.

LCO

The Spray Additive System is necessary to reduce the release of radioactive material to the environment in the event of a DBA. To be considered OPERABLE, the volume and concentration of the spray additive solution must be sufficient to provide NaOH injection into the spray flow until the Containment Spray System suction path is switched from the RWST to the containment sump, and to raise the average spray solution pH to a level conducive to iodine removal, namely, to between [7.2] and 11.0]. This pH range maximizes the effectiveness of the iodine removal mechanism without introducing conditions that may induce caustic stress corrosion cracking of mechanical system components. In addition, it is essential that valves in the Spray Additive System flow paths are properly positioned and that automatic valves are capable of activating to their correct positions.

(20) Insert B3.6.7-00

(28) 8.5

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment requiring the operation of the Spray Additive System. The Spray Additive System assists in reducing the iodine fission product inventory prior to release to the environment.

In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations in these MODES. Thus, the Spray Additive System is not required to be OPERABLE in MODE 5 or 6.

ACTIONS

A.1

If the Spray Additive System is inoperable, it must be restored to OPERABLE within 72 hours. The pH adjustment of

and at least 100% of the spray Additive flow equivalent to an OPERABLE Spray Addition System Train available to an OPERABLE Containment spray train.

(continued) (24)

Supplement 7

developed head. At HBRSEP, Unit No. 2, no capability exists in MODES 1, 2, 3, or 4 to set the pump flow at a flow rate substantial enough to permit measurement of the developed head as a variable. The ASME Boiler & Pressure Vessel (B&PV) Code allows alternately to set the head and measure flow to determine measured pump performance to within an acceptable tolerance. This is the test method employed at HBRSEP, Unit No. 2 during the applicable MODES for ECCS. Therefore, the Bases to ITS SR 3.6.6.4 includes the plant's testing method allowed by the ASME B&PV Code.

53 The Bases is revised to state "volumetric average" in lieu of "average." The use of a volumetric average is consistent with the remainder of the Bases description and the methodology in use at HBRSEP, Unit No. 2.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.2	------------------NOTE------------------ Valves and blind flanges in high radiation areas may be verified by use of administrative controls. --- Verify each containment isolation manual valve and blind flange that is located outside containment and not locked, sealed or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	31 days for containment isolation valves (except Penetration Pressurization System valves with a diameter ≤ 3/8 inch) and blind flanges <u>AND</u> 18 months for Penetration Pressurization System valves with a diameter ≤ 3/8 inch
SR 3.6.3.3	------------------NOTE------------------ Valves and blind flanges in high radiation areas may be verified by use of administrative means. --- Verify each containment isolation manual valve and blind flange that is located inside containment and not locked, sealed or otherwise secured and required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

leakage. The containment was designed with an allowable leakage rate of 0.1% of containment air weight per day (Ref. 2). This leakage rate is defined in 10 CFR 50, Appendix J (Ref. 1) as L_a = 0.1% of containment air weight per day, the maximum allowable containment leakage rate at the calculated peak containment internal pressure P_a = 40.0 psig following a DBA.

The containment air lock satisfies Criterion 3 of the NRC Policy Statement.

LCO

The containment air lock forms part of the containment pressure boundary. As part of containment, the air lock safety function is related to control of the containment leakage rate resulting from a DBA. Thus, the air lock's structural integrity and leak tightness are essential to the successful mitigation of such an event.

The air lock is required to be OPERABLE. For the air lock to be considered OPERABLE, the air lock interlock mechanism must be OPERABLE, the air lock must be in compliance with the Type B air lock leakage test, and both air lock doors must be OPERABLE. The interlock allows only one air lock door of an air lock to be opened at one time. This provision ensures that a gross breach of containment does not exist when containment is required to be OPERABLE. Closure of a single door in the air lock is sufficient to provide a leak tight barrier following postulated events. Nevertheless, both doors are kept closed when the air lock is not being used for normal entry into and exit from containment.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Therefore, the containment air locks are not required in MODE 5 to prevent leakage of radioactive material from containment. The requirements for the containment air locks during MODE 6 are addressed in LCO 3.9.3, "Containment Penetrations."

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.2.2

The air lock interlock is designed to prevent simultaneous opening of both doors in a single air lock. Since both the inner and outer doors of an air lock are designed to withstand the maximum expected post accident containment pressure, closure of either door will support containment OPERABILITY. Thus, the door interlock feature supports containment OPERABILITY while the air lock is being used for personnel transit in and out of the containment. Periodic testing of this interlock demonstrates that the interlock will function as designed and that simultaneous opening of the inner and outer doors will not inadvertently occur. Due to the purely mechanical nature of this interlock, and given that the interlock mechanism is not normally challenged when the containment air lock door is used for entry and exit (procedures require strict adherence to single door opening), this test is only required to be performed every 24 months. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage, and the potential for loss of containment OPERABILITY if the surveillance were performed with the reactor at power. The 24 month Frequency for the interlock is justified based on generic operating experience. The 24 month Frequency is based on engineering judgment and is considered adequate given that the interlock is not challenged during the use of the interlock.

REFERENCES

1. 10 CFR 50, Appendix J, Option A.
2. UFSAR, Paragraph 6.9.2.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.1 (continued)

control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open. The valves are capable of closing in the environment following a LOCA. Therefore, these valves are allowed to be open for limited periods of time. The 31 day Frequency is consistent with other containment isolation valve requirements discussed in SR 3.6.3.3. Since it is not operationally necessary, it is desirable to preclude the 42 inch valves and 6 inch valves from being open at the same time. A Note to this SR restricts the 6 inch and 42 inch valves from being open simultaneously.

SR 3.6.3.2

This SR requires verification that each containment isolation manual valve and blind flange located outside containment and not locked, sealed or otherwise secured and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside of the containment boundary is within design limits. This SR does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those containment isolation valves outside containment and capable of being mispositioned are in the correct position. Since verification of valve position for containment isolation valves outside containment is relatively easy, the 31 day Frequency is applicable to containment isolation valves (except Penetration Pressurization System valves with a diameter ≤ 3/8 inch) and blind flanges. The 18 month Frequency is applicable to Penetration Pressurization System valves with a diameter ≤ 3/8 inch. These Frequencies are based on engineering judgment and were chosen to provide added assurance of the correct positions. The 18 month Frequency for Penetration Pressurization System valves ≤ 3/8 inch in diameter is considered acceptable based on the low probability of these valves being mispositioned and the minimal consequences associated with mispositioning one of these valves. The SR specifies that containment isolation valves that are open under administrative controls are not required to meet the SR during the time the valves are open. This SR does not apply to valves that are locked, sealed or otherwise secured in the closed position, since these were

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.2 (continued)

verified to be in the correct position upon locking, sealing or securing.

The Note applies to valves and blind flanges located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, 3 and 4 for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in the proper position, is small.

SR 3.6.3.3

This SR requires verification that each containment isolation manual valve and blind flange located inside containment and not locked, sealed or otherwise secured and required to be closed during accident conditions is closed. The SR helps to ensure that post accident leakage of radioactive fluids or gases outside of the containment boundary is within design limits. For containment isolation valves inside containment, the Frequency of "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is appropriate since these containment isolation valves are operated under administrative controls and the probability of their misalignment is low. The SR specifies that containment isolation valves that are open under administrative controls are not required to meet the SR during the time they are open. This SR does not apply to valves that are locked, sealed or otherwise secured in the closed position, since these were verified to be in the correct position upon locking, sealing or securing.

This Note allows valves and blind flanges located in high radiation areas to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted during MODES 1, 2, 3, and 4, for ALARA reasons. Therefore, the probability of misalignment of these containment isolation valves, once they have been verified to be in their proper position, is small.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.3.4

Verifying that the isolation time of each automatic power operated containment isolation valve is within limits is required to demonstrate OPERABILITY. The isolation time test ensures the valve will isolate in a time period less than or equal to that assumed in the safety analyses. The isolation time and Frequency of this SR are in accordance with the Inservice Testing (IST) Program. In addition to the IST program testing frequency, the 42 inch purge supply and exhaust valves will be tested prior to use if not tested within the previous quarter. Otherwise, the 42 inch purge supply and exhaust valves are not cycled quarterly only for testing purposes.

SR 3.6.3.5

Automatic containment isolation valves close on a containment isolation signal to prevent leakage of radioactive material from containment following a DBA. This SR ensures that each automatic containment isolation valve will actuate to its isolation position on a containment isolation signal. This surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant 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 this Surveillance when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.6.3.6

Verifying that each 42 inch inboard containment purge valve is blocked to restrict opening to ≤ 70° is required to ensure that the valves can close under DBA conditions within the times assumed in the analyses of References 1 and 2. If a LOCA occurs, the purge valves must close to maintain containment leakage within the values assumed in the accident analysis. At other times when purge valves are required to be capable of closing (e.g., during movement of

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.3.6 (continued)

irradiated fuel assemblies), pressurization concerns are not present, thus the purge valves can be fully open. The 18 month Frequency is appropriate because the blocking devices are typically removed only during a refueling outage.

REFERENCES

1. UFSAR, Chapter 15.
2. UFSAR, Section 6.2.
3. Standard Review Plan 6.2.4.

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.6.5.1

Verifying that containment average air temperature is within the LCO limit ensures that containment operation remains within the limit assumed for the containment analyses. In order to determine the containment average air temperature, a volumetric average is calculated using measurements taken at locations within the containment selected to provide a representative sample of the overall containment atmosphere. The 24 hour Frequency of this SR is considered acceptable based on observed slow rates of temperature increase within containment as a result of environmental heat sources (due to the large volume of containment). Furthermore, the 24 hour Frequency is considered adequate in view of other indications available in the control room to alert the operator to an abnormal containment temperature condition.

REFERENCES

1. UFSAR, Section 6.2.
2. 10 CFR 50.49.

BASES

LCO (continued)	the Spray Additive System flow paths are properly positioned and that automatic valves are capable of activating to their correct positions.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment requiring the operation of the Spray Additive System. The Spray Additive System assists in reducing the iodine fission product inventory prior to release to the environment.

In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations in these MODES. Thus, the Spray Additive System is not required to be OPERABLE in MODE 5 or 6.

ACTIONS

A.1

If one Spray Additive System train is inoperable and at least 100% of the Spray Additive System flow equivalent to an OPERABLE Spray Additive System train is available to an OPERABLE Containment Spray train, it must be restored to OPERABLE within 72 hours. With one train of the Containment Spray Additive System inoperable, the remaining train is capable of supplying its flow to the associated Containment Spray System train. This circumstance is bounded by the inoperablility of a Containment Spray Train. In this condition the redundant train of the Spray Additive System in conjunction with the associated Containment Spray Train provides iodine removal capability consistent with the assumptions in the accident analysis.

B.1

If the Spray Additive System is inoperable for reasons other than Condition A, one train must be restored to OPERABLE status within 1 hour. The pH adjustment of the Containment Spray System flow for corrosion protection and iodine removal enhancement is reduced in this condition. The Containment Spray System would still be available and would remove some iodine from the containment atmosphere in the event of a DBA. The 1 hour Completion Time takes into

(continued)

BASES

ACTIONS

B.1 (continued)

account the time necessary to restore the System to Operable Status, the relative importance of pH adjustment of the Containment Spray System flow for corrosion protection and iodine removal as well as the low probability of the worst case DBA occurring during this period.

C.1 and C.2

If the Spray Additive System cannot be restored to OPERABLE status within the required Completion Time, 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 at least MODE 3 within 6 hours and to MODE 5 within 84 hours. 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. The extended interval to reach MODE 5 allows 48 hours for restoration of the Spray Additive System in MODE 3 and 36 hours to reach MODE 5. This is reasonable when considering the reduced pressure and temperature conditions in MODE 3 for the release of radioactive material from the Reactor Coolant System.

SURVEILLANCE REQUIREMENTS

SR 3.6.7.1

Verifying the correct alignment of Spray Additive System manual, power operated, and automatic valves in the spray additive flow path provides assurance that the system is able to provide additive to the Containment Spray System in the event of a DBA. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since these valves were verified to be in the correct position prior to locking, sealing, or securing. This SR does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those valves outside containment and capable of potentially being mispositioned are in the correct position.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.7.2

To provide effective iodine removal, the containment spray must be an alkaline solution. Since the RWST contents are normally acidic, the volume of the spray additive tank must provide a sufficient volume of spray additive to adjust pH for all water injected. This SR is performed to verify the availability of sufficient NaOH solution in the Spray Additive System. The 184 day Frequency was developed based on the low probability of an undetected change in tank volume occurring during the SR interval (the tank is isolated during normal unit operations). Tank level is also indicated and alarmed in the control room, so that there is high confidence that a substantial change in level would be detected.

SR 3.6.7.3

This SR provides verification of the NaOH concentration in the spray additive tank and is sufficient to ensure that the spray solution being injected into containment is at the correct pH level. The 184 day Frequency is sufficient to ensure that the concentration level of NaOH in the spray additive tank remains above the limit. This is based on the low likelihood of an uncontrolled change in concentration (the tank is normally isolated) and the probability that any substantial variance in tank volume will be detected.

SR 3.6.7.4

This SR provides verification that each automatic valve in the Spray Additive System flow path actuates to its correct position. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant 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 was concluded to be acceptable from a reliability standpoint.

(continued)

BASES (continued)

REFERENCES 1. UFSAR, Chapter 6.

SUPPLEMENT 7
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)"	
	4.8-1(3.7.4),	4.8-1(3.7.4),
	3.15-1(3.7.9),	3.15-1(3.7.9),
	3.15-1(3.7.10),	3.15-1(3.7.10),
	3.8-2, 4.12-2(3.7.11)	3.8-2, 4.12-2(3.7.11)
b.	Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
	2, 3, 6, 11, 16, 19, 19a, 22,	2, 3, 6, 11, 11a, 16, 19, 19a, 22,
	24, 28, and 29	22a, 24, 28, and 29
c.	Part 3, "No Significant Hazards consideration (NSHC), And Basis for Categorical Exclusion from 10 CFR 51.22	
	9, 10, 22, and 23	9, 10, 22, and 23
d.	Part 4, "Markup of NUREG-1431, Revision 1, Standard Technical Specifications Westinghouse Plants, (ISTS)"	
	3.7-13(3.7.4),	3.7-13(3.7.4),
	3.7-23, 3.7-23a (3.7.9),	3.7-23, 3.7-23a (3.7.9),
	3.7-26, 3.7-26a (3.7.10),	3.7-26, 3.7-26a (3.7.10),
	3.7-30, 3.7-30a, 3.7-31(3.7.11)	3.7-30,3.7-30a, 3.7-31(3.7.11)
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	5, 6	5, 6
f.	Part 6, "Markup of ISTS Bases"	
	B 3.7-29, B 3.7-29a (B 3.7.4),	B 3.7-29, B 3.7-29a (B 3.7.4),
	B 3.7-46, B 3.7-47, B 3.7-47a,	B 3.7-46, B 3.7-47, B 3.7-47a,
	B 3.7-48(B 3.7.8),	B 3.7-48 (B 3.7.8),
	B 3.7-53, B 3.7-53a (B 3.7.9),	B 3.7-53, B 3.7-53a (B 3.7.9),
	B 3.7-58, B 3.7-58a (B 3.7.10),	B 3.7-58, B 3.7-58a (B 3.7.10),
	B 3.7-68, B 3.7-68a, B 3.7-70,	B 3.7-68, B 3.7-68a, B 3.7-70,
	B 3.7-70a, B 3.7-71 (B 3.7.11)	B 3.7-70a, and B 3.7-71 (B 3.7.11)
g.	Part 7, "Justification of Differences (JFDs) to ISTS Bases"	
	10	10

SUPPLEMENT 7
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
h.	Part 8, "Proposed HBRSEP, Unit No. 2 ITS"	
	3.7-11(3.7.4),	3.7-11(3.7.4),
	3.7-21(3.7.9),	3.7-21(3.7.9),
	3.7-24(3.7.10),	3.7-24(3.7.10),
	3.7-27, 3.7-27a (3.7.11)	3.7-27, 3.7-27a (3.7.11)
i.	Part 9, "Proposed Bases to HBRSEP, Unit No.2 ITS"	
	B 3.7-27, B 3.7-28(B 3.7.4),	B 3.7-27, B 3.7-28(B 3.7.4),
	B 3.7-47, B 3.7-48, B 3.7-49,	B 3.7-47, B 3.7-48, B 3.7-49,
	B 3.7-50 (B 3.7.8),	B 3.7-50 (B 3.7.8),
	B 3.7-53, B 3.7-53a (B 3.7.9),	B 3.7-53, B 3.7-53a (B 3.7.9),
	B 3.7-59(B 3.7.10),	B 3.7-59(B 3.7.10),
	B 3.7-63, B 3.7-64, B 3.7-65(B 3.7.11)	B 3.7-63, B 3.7-64, B 3.7-65(B 3.7.11)
j.	Part 10, "ISTS Generic Changes"	
	NA	

Specification 3.7.4

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

LA7

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.

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.

M12

[SR 3.7.4.3] 4.8.3 The auxiliary feedwater pumps discharge valves will be tested by operator action at monthly intervals. automatic 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

Add SR 3.7.4.2 — M38

Supplement 7

ITS

Specification 3.7.9

A1

3.15 CONTROL ROOM AIR CONDITIONING SYSTEM

Applicability

Applies to the Control Room Air Conditioning System which is comprised of two parts, an environmental control system and an air clean-up system.

The Control Room Air Conditioning System contains redundant safety-related active components. Passive safety-related components and nonsafety-related components are not required to be redundant.

Objective

To provide limiting conditions for operation which ensure the operability of the air conditioning system during plant operation, such that normal operation or plant accident conditions requiring operation of the system will not result in consequences more severe than those analyzed.

Specification

[Applicability]
[LCO 3.7.9]

3.15.1 During all modes of operation, except cold shutdown, the Control Room Air Conditioning System shall be operable with two trains of active safety-related components and the shared safety-related passive components, except as described below:

A19

[ACTION A]
[ACTION B]

a. With one safety-related active component or train of the Control Room Air Conditioning System inoperable, restore the inoperable component or train to operable status within 7 days or be in at least hot shutdown within the next 8 6 hours and in cold shutdown MODE 5 within the following 30 hours. MODE 3

M29

[ACTION E]
[ACTION F]

b. With both redundant active components or trains or a safety-related passive component inoperable, restore at least one redundant train active component or the inoperable passive component to operable status within 48 hours or be in at least hot shutdown MODE 3 within the next 8 6 hours and cold shutdown MODE 5 within the following 30 hours.

A19

M29

During MODES 1, 2, 3, 4

A20

MODES 1, 2, 3, 4
During movement of irradiated fuel assemblies
During core alterations

L10

Amendment No. 89, 134

Supplement 7

A1

ITS

3.15 CONTROL ROOM AIR CONDITIONING SYSTEM

Applicability

Applies to the Control Room Air Conditioning System which is comprised of two parts, an environmental control system and an air clean-up system.

The Control Room Air Conditioning System contains redundant safety-related active components. Passive safety-related components and nonsafety-related components are not required to be redundant.

Objective

To provide limiting conditions for operation which ensure the operability of the air conditioning system during plant operation, such that normal operation or plant accident conditions requiring operation of the system will not result in consequences more severe than those analyzed.

A24

[Applicability] MODES 1, 2, 3, 4, During CORE ALTERATIONS During movement of irradiated fuel assys L10

Specification

[LCO 3.7.10] 3.15.1 During all modes of operation, except cold shutdown, the Control Room Air Conditioning System shall be operable with two trains of active safety-related components and the shared safety-related passive components, except as described below. (Water cooled condensing units (WCCUs))

During MODES 1, 2, 3, 4 A20

[ACTION A] [ACTION B] a. With one safety-related active component or train of the Control Room Air Conditioning System (WCCUs) inoperable, restore the inoperable component or train to operable status within 7 (30) days or be in at least hot shutdown (MODE 3) within the next 8 (6) hours and in cold shutdown (MODE 5) within the following 30 hours. L16 M28

[ACTION E] [ACTION F] b. With both redundant active components or trains or a safety-related passive component inoperable, restore at least one redundant train active component or the inoperable passive component to operable status within 48 hours or be in at least hot shutdown (MODE 3) within the next 8 (6) hours and cold shutdown (MODE 5) within the following 30 hours. M29

Specification 3.7.11

ITS

A1

indication available in the containment. When core geometry is not being changed at least one source range neutron flux monitor shall be in service.

e. At least one residual heat removal loop shall be operable, refueling cavity water level ≥ Plant elevation 272 ft. - 2 in. whenever fuel assemblies are being moved within the reactor pressure vessel, and Tave ≤ 140°F.

f. During reactor vessel head removal and while loading and unloading fuel from the reactor, the minimum boron concentration of 1950 ppm shall be maintained in the primary coolant system and verified by sampling once each shift.

See 3.9.1 3.9.2 3.9.4 3.9.6

g. Direct communication between the control room and the refueling cavity manipulator crane shall be available whenever changes in core geometry are taking place.

h. Movement of fuel within the core shall not be initiated prior to 100 hours after shutdown.

[LCO 3.7.11] [Applicability]

i. The Spent Fuel Building ventilation system shall be OPERABLE and operating when handling irradiated fuel in this area. Prior to moving irradiated fuel assemblies in the spent fuel pool, the ventilation system exhaust shall be aligned to discharge through HEPA and impregnated charcoal filters. When in operation, the exhaust flow of the Containment Purge System shall discharge through HEPA and impregnated charcoal filters. When the Containment Purge System is not in operation at least one automatic containment isolation valve shall be secured in each line penetrating the containment which provides a direct path from the containment atmosphere to the outside atmosphere.

A26

See 3.9.3

Specification 3.7.11

(A1)

each refueling outage operation or after every 720 hours of system operation, whichever occurs first, and following significant painting, fire, or chemical release in any ventilation zone communicating with the filter system.

c. Cold DOP testing shall be performed after each complete or partial replacement of a HEPA filter bank or after any structural maintenance of the filter system housing.

See 5.5

d. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of a charcoal adsorber bank or after any structural maintenance on the filter system housing.

e. A uniform air distribution within ± 20% across HEPA filters and charcoal adsorbers must be demonstrated initially and after each major repair or modification to the systems which would affect the air distribution.

4.12.3 The relative humidity of the air processed by the refueling filter system shall be monitored hourly during fuel handling operations. (LA8)

Basis

(A6)

Pressure drop across the combined HEPA filters and charcoal adsorbers of less than 6 inches of water at the system design flow rate will indicate that the filters and adsorbers are not clogged by excessive amounts of foreign matter. Pressure drop and fan capacity should be determined a least once per operating cycle to show system performance capability.

The frequency of tests and sample analysis are necessary to show that the HEPA filters and charcoal adsorbers can perform as evaluated under postulated accident conditions. The charcoal adsorber efficiency test procedures should allow for the removal of one adsorber tray, emptying of one bed from the tray, mixing the adsorbent thorpughly and obtaining at least two samples. Each sample should be at least two inches in diameter and a length equal to the thickness of the bed. If test results are unacceptable, all adsorbent in the system shall be replaced

A7 The CTS Specification 3.4.1.d requirement, that essential features including system piping and valves directly associated with the Auxiliary Feedwater (AFW) System be OPERABLE, is not explicitly detailed in the ITS. The CTS Specification 3.4.1.b requirement that three AFW pumps be OPERABLE is revised as presented in ITS Specification 3.7.4 to apply to four AFW flow paths and three AFW pumps. Two motor driven AFW pumps are configured to provide flow through three flow paths to the three steam generators (SGs). The steam turbine driven AFW pump is configured with its own flow path to provide flow to all three SGs independently from the motor driven flow paths. The emergency power supply configuration to active components in the AFW system results in the grouping of AFW essential features into four flow paths. Since this change neither adds nor removes requirements, it is administrative and has no adverse impact on safety.

A8 CTS Specification 3.4.4 includes required actions for when AFW essential features are inoperable. ITS Specification 3.7.4 contains Required Actions for when "one or two flow paths" are inoperable. This change explicitly recognizes that inoperability of the motor driven "swing" flow path, in addition to inoperability of another motor driven flow path, does not reduce the available OPERABLE AFW pumps below two. Other combinations of two or more inoperable AFW flow paths are addressed in remaining actions of the LCO. Since this change neither adds nor removes requirements, it is administrative and has no adverse impact on safety.

A9 CTS Specification 3.4.4 requires that, if an AFW pump and/or essential features is not restored to OPERABLE status in 72 hours, a Special Report be submitted to the Commission within 30 days. This requirement is not retained in the ITS. Reporting requirements are adequately addressed in 10 CFR 50.73 and need not be augmented in the ITS. This change is therefore administrative, and has no adverse impact on safety.

A10 CTS Specifications 3.4.4 and 3.4.5 are revised to add the clarification "... in MODE 1, 2, or 3 ...," to address the Applicability inferred from CTS Specification 3.4.1. This clarification is necessary to distinguish those CTS required actions that pertain to the CTS Applicability for the AFW System. Since this change neither adds nor deletes requirements, it is administrative and has no adverse impact on safety.

A11 Not Used.

A12 CTS Specification 4.8.4, which provides acceptance criteria that AFW Surveillances are to be considered satisfactory if control board indication and visual observation of the equipment demonstrate that all components have operated properly, is not retained in the ITS. These indications are implicit within the definition of OPERABLE-OPERABILITY, and need not be repeated in the ITS. This change is administrative, and has no adverse impact on safety.

A13 CTS Specification 4.8.3 requires that AFW pump discharge valves be tested by operator action. ITS SR 3.7.4.3 requires that these valves be tested by an actual or simulated signal. Since an actual or simulated signal is initiated by operator action, this change only provides clarification, and is administrative with no adverse impact on safety.

A14 CTS Specification 3.4.1 requires an unlimited water supply from the lake via either leg of the plant Service Water System. This requirement is retained in ITS LCO 3.7.5 with the text, "... an unlimited ..." changed to, "... the backup ..." Since the lake capacity is vastly larger than the amount of water necessary to achieve cold shutdown conditions, and it is in fact the back-up to the condensate storage tank (CST), this change is administrative, and has no adverse impact on safety.

A15 CTS Specification 3.4.1 requires that essential features including system piping and valves directly associated with the CST be operable. This requirement is encompassed within the ITS definition of OPERABLE-OPERABILITY, and is therefore not explicitly detailed in the ITS. Since this change neither adds or removes requirements it is administrative and has no adverse impact on safety.

A16 CTS Specification 3.3.3.1 requires that two component cooling water (CCW) pumps, two CCW heat exchangers and all essential features including valves and piping be OPERABLE. This requirement is retained in ITS Specification 3.7.6 to require that two CCW trains powered from the emergency buses be OPERABLE. The incorporation of pumps, heat exchangers and essential features into trains, as stated in the ITS, results in identical requirements for OPERABILITY. Therefore, this change is administrative and has no adverse impact on safety.

A17 CTS Specification 3.3.4.1 requires that four Service Water System (SWS) pumps, two SWS booster pumps, two SWS loop headers and all essential features including valves and piping be OPERABLE. This requirement is retained in ITS Specification 3.7.7 by requiring that two SWS trains be OPERABLE. The incorporation of pumps, loop headers and essential

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.

A29 Not Used.

M11 Not Used.

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 OPERABILITY

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 (22 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

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.

M38 CTS 4.8.1 and 4.8.2 require the auxiliary feedwater pumps to be operated and determined to be OPERABLE. ITS SR 3.7.4.2 requires verification that the developed head at the flow test point 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 confirms that AFW pump performance has not degraded during the cycle. This test confirms one point on the pump design curve and is indicative of overall performance. The more

prescriptive requirements of SR 3.7.4.2 are additional restrictions upon unit operation and do not result in an adverse safety impact.

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.

LA7 CTS Specification 4.8.1 and 4.8.2 require monthly testing of the motor driven and steam turbine driven auxiliary feedwater pumps. These testing requirements are not retained in the ITS and are relocated to the Inservice Testing Program.

These testing requirements are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still requires the auxiliary feedwater pumps to be OPERABLE and includes appropriate testing requirements for the auxiliary feedwater pumps. 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. Futhermore, NRC and licensee resources associated with processing license admendments to these requirements will be reduced. Therefore, relocation of these surveillance requirements is acceptable.

LA8 CTS Specification 4.12.3 requires hourly monitoring of the relative humidity of the air processed by the spent fuel ventilation portion of the refueling filter system. This requirement is not retained in the ITS and is relocated to the Technical Requirements Manual.

This requirement is not necessary since the ITS requires the FBACS to be OPERABLE and includes appropriate Surveillance requirements for the FBACS filters. Requirements for testing the Spent Fuel Pool ventilation system filter heaters are included in the Ventilation Filter System Testing Program specified in ITS 5.5.11. 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 this requirement will be reduced. Therefore, relocation of this requirement is acceptable.

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 Not Used.

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.

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 Not Used.

The proposed change does not involve any physical alteration of plant systems, structures or components or changes in parameters governing normal plant operation. The addition of Required Actions to suspend required MODE changes of LCO 3.0.3 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 provides Required Actions for the plant condition where the entire AFW System is inoperable. This change requires restoration of at least one AFW pump and flow path to OPERABLE status before permitting a MODE change. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

LESS RESTRICTIVE SPECIFIC CHANGES
("L6" Labeled Comments/Discussions)

Not Used.

LESS RESTRICTIVE SPECIFIC CHANGES
("L7" 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 AFW pump discharge valve Surveillance Frequency is not assumed to be an initiator of any accident previously evaluated. The probability of occurrence of an accident is independent of the Surveillance Frequency of the valves. The Frequency of 18 months is reasonable, based on plant operating experience, engineering judgement and other administrative controls that ensure that flow paths remain OPERABLE. The valves are also tested along with the AFW pump OPERABILITY tests, which are performed at a 31 day Frequency on a STAGGERED TEST BASIS. The consequences of a design basis accident are not affected by a Surveillance Frequency. 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 or changes in parameters governing normal plant operation. The AFW valve Surveillance Frequency 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?

   This change involves reducing the Frequency for testing AFW valve actuation from monthly to 18 months. The Frequency of 18 months is reasonable, based on plant operating experience, engineering judgement and other administrative controls that ensure that flow paths remain OPERABLE. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

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)

Not Used.

CTS

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
[M13]	SR 3.7.5.1 Verify each AFW manual, power operated, and automatic valve in each water flow path, and in both steam supply flow paths to the steam turbine driven pump, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
[Doc M38]	SR 3.7.5.2 ------NOTE------ Not required to be performed for the turbine driven AFW pump until [24 hours] after ≥ [1000] psig in the steam generator. ------------ Verify the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head.	18 months [31] days on a STAGGERED TEST BASIS
4.a.7	SR 3.7.5.3 ------NOTE------ Not applicable in MODE 4 when steam generator is relied upon for heat removal. ------------ Verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[18] months

(continued)

Supplement 7

CTS

3.7 PLANT SYSTEMS

3.7.10 Control Room Emergency Filtration System (CREFS)

[3.15.1] LCO 3.7.10 (9) Two CREFS trains shall be OPERABLE.

[3.15.1]
[3.15.2] APPLICABILITY: MODES 1, 2, 3, (and) 4, [5, and 6],
During movement of irradiated fuel assemblies,
[During CORE ALTERATIONS].

ACTIONS

	CONDITION	REQUIRED ACTION		COMPLETION TIME
[3.15.1.a] [3.15.2.a]	A. One CREFS train inoperable.	A.1	Restore CREFS train to OPERABLE status.	7 days
[3.15.1.a]	B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4.	B.1 AND B.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours
[3.15.2.a]	C. Required Action and associated Completion Time of Condition A not met [in MODE 5 or 6, or] during movement of irradiated fuel assemblies[, or during CORE ALTERATIONS].	C.1 OR	-------NOTE------- Place in toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable. ------------------ Place OPERABLE CREFS train in emergency (pressurization) mode.	Immediately (continued)

Insert 3.7-23A

Not Used.

CTS

3.7 PLANT SYSTEMS

3.7.11 Control Room Emergency Air Temperature Control System (CREATCS)

Water Cooled Condensing Unit (WCCU)

[3.15.1] LCO 3.7.11 Two CREATCS trains shall be OPERABLE.

[3.15.1] APPLICABILITY: MODES 1, 2, 3, and 4, [5, and 6,]
During movement of irradiated fuel assemblies,
[During CORE ALTERATIONS].

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
[3.15.1.a] [3.15.2.a] A. One CREATCS train inoperable.	A.1 Restore CREATCS train to OPERABLE status.	30 days
[3.15.1.a] B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours
[3.15.2.a] C. Required Action and associated Completion Time of Condition A not met [in MODE 5 or 6, or] during movement of irradiated fuel assemblies [, or during CORE ALTERATIONS].	C.1 Place OPERABLE CREATCS train in operation. OR C.2.1 Suspend CORE ALTERATIONS. AND C.2.[2] Suspend movement of irradiated fuel assemblies.	Immediately Immediately Immediately

(continued)

Supplement 7

<u>Insert 3.7-26A</u>

Not Used.

CTS

FBACS 3.7.13 (1) 11 22

3.7 PLANT SYSTEMS

3.7.13 Fuel Building Air Cleanup System (FBACS)

11

[3.8.1.i] LCO 3.7.13 The Two FBACS trains shall be OPERABLE and operating

[3.8.1.i] APPLICABILITY: [MODES 1, 2, 3, and 4,]
During movement of irradiated fuel assemblies in the fuel building.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One FBACS train inoperable.	A.1	Restore FBACS train to OPERABLE status.	7 days
[B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4. OR Two FBACS trains inoperable in MODE 1, 2, 3, or 4.	B.1 AND B.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours]
C. Required Action and associated Completion Time [of Condition A] not met during movement of irradiated fuel assemblies in the fuel building.	C.1 OR C.2	Place OPERABLE FBACS train in operation. Suspend movement of irradiated fuel assemblies in the fuel building.	Immediately Immediately

(continued)

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Insert 3.7-30A

Not Used.

CTS

ACTIONS (continued)

	CONDITION	REQUIRED ACTION	COMPLETION TIME
[3.8.2.e]	D. Two FBACS trains inoperable during movement of irradiated fuel assemblies in the fuel building.	D.1 Suspend movement of irradiated fuel assemblies in the fuel building.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE		FREQUENCY
[M33]	SR 3.7.13.1	Operate each FBACS train for ≥ 10 continuous hours with the heaters operating or (for systems without heaters) ≥ 15 minutes.	31 days
[M33]	SR 3.7.13.2	Perform required FBACS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]
	[SR 3.7.13.3	Verify each FBACS train actuates on an actual or simulated actuation signal.	[18] months]
[M33]	SR 3.7.13.4	Verify one FBACS train can maintain a pressure ≤ [-0.125] inches water gauge with respect to atmospheric pressure during the [post accident] mode of operation at a flow rate ≤ [20,000] cfm.	[18] months on a STAGGERED TEST BASIS

(continued)

Note — Not required to be met when the only movement of irradiated fuel in the fuel handling building is movement of the spent fuel shipping cask containing irradiated fuel.

Supplement 7

operated for ≥ 10 continuous hours with heaters operating. The wording of ISTS 3.7.13.1 is revised in ITS 3.7.11.1 to require the FBACS to be operated for ≥ 10 continuous hours with the heaters operating automatically. This change is necessary to reflect the HBRSEP Unit No. 2 design of the Fuel Building Air Cleanup System (the system consists of a single train) and the fact that the heaters cycle on and off automatically to control humidity.

30 ISTS SR 3.7.5.2 requires verification that each AFW pump's developed head at the test flow point is greater than or equal to the required developed head. This requirement is interpreted as requiring full flow testing. The HBRSEP Unit No. 2 AFW design does not provide the capability to do full flow testing of AFW pumps during all applicable MODES of operation since it is undesirable to introduce significant amounts of cold AFW into the steam generators while they are operating. However, ASME Section XI provides alternate testing requirements for these circumstances. This test method is employed at HBRSEP, Unit No. 2 in accordance with the Inservice Testing Program. Therefore, the ITS SR 3.7.4.2 Frequency is modified to 18 months. This permits the ITS SR 3.7.4.2 testing to be performed during unit shutdowns. More frequent testing is performed in accordance with the Inservice Testing Program.

31 Changes to ISTS 3.7.1 (ITS 3.7.1), Main Steam Safety Valves (MSSVs), are proposed to address recent issues related to improper Bases assumptions and overpressurization scenarios with inperable MSSVs. The changes are necessary to address the following:

a. ISTS 3.7.1 and associated Bases for requiring a reduction in reactor power proportional to the relief capacity of the remaining OPERABLE MSSVs is incorrect. As described in Westinghouse letter NSAL-94-001, "Operation at Reduced Power Levels with Inoperable MSSVs," January 20, 1994, and NRC Information Notice 94-60, "Potential Overpressurization of Main Steam System," August 22, 1994, the required reduction in reactor power is not directly proportional to the reduction in MSSV relieving capacity due to the effects of certain reactor trips that occur at full power which may not occur at partial power conditions. ISTS 3.7.1 and the associated Bases are revised to employ the heat balance algorithm included in NSAL-94-001.

b. For operation at partial power levels with a positive Moderator Temperature Coefficient (MTC), changes are made to require a reduction in the Power Range Neutron Flux-High reactor trip setpoint in addition to a reduction in reactor power when the MTC is positive. This is necessary to limit the primary side heat generation that may occur during an RCS heatup event. With a positive MTC, a heatup of the coolant will result in a power increase which requires additional steam relieving capacity.

c. Changes are made to require a reduction in the Power Range Neutron Flux-High trip setpoint in addition to a reduction in reactor power when there is more than one inoperable MSSV on any single steam generator. This addresses a recently identified Westinghouse issue. For reactivity insertion events such as an uncontrolled RCCA bank withdrawal from a partial power level, the reactor power will increase during the transient until a reactor trip occurs on Overtemperature ΔT or Power Range Neutron Flux-High. With more than one inoperable MSSV on any steam generator, the combined steam flow capacity of the OPERABLE MSSVs and the turbine may be insufficient in some cases to prevent overpressurization of the Main Steam System prior to reaching the reactor trip setpoint.

d. Changes are made to statements in the Bases that are misleading or inconsistent with safety analysis methods.

A generic change has been submitted for the above described changes.

32 ISTS SR 3.7.13.4 is modified by a Note. This Note provides clarification that the SR is not applicable when the only movement of irradiated fuel is the movement of the spent fuel shipping cask containing irradiated fuel. This Note is necessary to permit the shipping cask to be removed from the fuel handling building. When the sidewall and roof are opened to permit cask egress, ISTS SR 3.7.13.4 cannot be met. OPERABILITY of the FBACS is not necessary when irradiated fuel assemblies are in a spent fuel shipping cask because irradiated fuel assemblies are protected from damage and associated release of fission products by the cask and other controls associated with shipments of spent fuel assemblies. Administrative controls associated with spent fuel shipping are described in LER 97-05 (Ref. 6) and are consistent with restrictions specified in the Certificate of Compliance (Ref. 7) for the spent fuel shipping cask. NRC has reviewed and approved the shipments of spent fuel by rail from the H. B. Robinson Plant near Darlington, SC to Shearon Harris Nuclear Power Plant near New Hill, NC as documented in NRC's May 24, 1990 letter to Carolina Power and Light Company.

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.7.5.1

Verifying the correct alignment for manual, power operated, and automatic valves in the AFW System water and steam supply flow paths provides assurance that the proper flow paths will exist for AFW operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since they are verified to be in the correct position prior to locking, sealing, or securing. This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves. This Surveillance does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position.

The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.

is acceptable based on operating experience and other more frequent testing performed in accordance with the Inservice Testing program

SR 3.7.5.2

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 (Ref. 2). Because it is undesirable to introduce cold AFW into the steam generators while they are operating, this testing is performed on recirculation flow. 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. Performance of inservice testing discussed in the ASME Code, Section XI (Ref. 2) (only required at 3 month intervals) satisfies this requirement. The [31] day Frequency on a STAGGERED TEST BASIS results in testing each pump once every 3 months, as required by Reference 2.

to monitor centrifugal pump performance

18 month

This SR is modified by a Note indicating that the SR should be deferred until suitable test conditions are established. This deferral is required because there is insufficient steam pressure to perform the test.

(continued)

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Insert B 3.7.4-9

Not Used.

B 3.7 PLANT SYSTEMS

B 3.7.9 Ultimate Heat Sink (UHS)

BASES

BACKGROUND

The UHS provides a heat sink for processing and operating heat from safety related components during a transient or accident, as well as during normal operation. This is done by utilizing the Service Water System (SWS) and the Component Cooling Water (CCW) System.

The UHS has been defined as that complex of water sources, including necessary retaining structures (e.g., a pond with its dam, or a river with its dam), and the canals or conduits connecting the sources with, but not including, the cooling water system intake structures as discussed in the FSAR, Section [9.2.5] (Ref. 1). If cooling towers or portions thereof are required to accomplish the UHS safety functions, they should meet the same requirements as the sink. The two principal functions of the UHS are the dissipation of residual heat after reactor shutdown, and dissipation of residual heat after an accident.

A variety of complexes is used to meet the requirements for a UHS. A lake or an ocean may qualify as a single source. If the complex includes a water source contained by a structure, it is likely that a second source will be required.

The basic performance requirements are that a 30 day supply of water be available, and that the design basis temperatures of safety related equipment not be exceeded. Basins of cooling towers generally include less than a 30 day supply of water, typically 7 days or less. A 30 day supply would be dependent on other source(s) and makeup system(s) for replenishing the source in the cooling tower basin. For smaller basin sources, which may be as small as a 1 day supply, the systems for replenishing the basin and the backup source(s) become of sufficient importance that the makeup system itself may be required to meet the same design criteria as an Engineered Safety Feature (e.g., single failure considerations), and multiple makeup water sources may be required.

(continued)

BASES

BACKGROUND (continued)

Additional information on the design and operation of the system, along with a list of components served, can be found in Reference 1.

INSERT B 3.7.8-1

APPLICABLE SAFETY ANALYSES

The UHS is the sink for heat removed from the reactor core following all accidents and anticipated operational occurrences in which the unit is cooled down and placed on residual heat removal (RHR) operation. For units that use UHS as the normal heat sink for condenser cooling via the Circulating Water System, unit operation at full power is its maximum heat load. Its maximum post accident heat load occurs 20 minutes after a design basis loss of coolant accident (LOCA). Near this time, the unit switches from injection to recirculation and the containment cooling systems and RHR are required to remove the core decay heat.

Since the; at the time when recirculation begins

The operating limits are based on conservative heat transfer analyses for the worst case LOCA. Reference 1 provides the details of the assumptions used in the analysis, which include worst expected meteorological conditions, conservative uncertainties when calculating decay heat, and worst case single active failure (e.g., single failure of a manmade structure). The UHS is designed in accordance with Regulatory Guide 1.27 (Ref. 2), which requires a 30 day supply of cooling water in the UHS.

and maintaining adequate Net Positive Suction Head (NPSH) for the SWS pumps

INSERT B 3.7.8-2

The UHS satisfies Criterion 3 of the NRC Policy Statement.

LCO

The UHS is required to be OPERABLE and is considered OPERABLE if it contains a sufficient volume of water at or below the maximum temperature that would allow the SWS to operate for at least 30 days following the design basis LOCA without the loss of net positive suction head (NPSH), and without exceeding the maximum design temperature of the equipment served by the SWS. To meet this condition, the UHS temperature should not exceed [90]°F and the level should not fall below [562] ft mean sea level] during normal unit operation.

95; 218; MSL

(continued)

Supplement 7

ITS INSERT B 3.7.8-2 (Ultimate Heat Sink (UHS))

The UHS at the minimum allowable level of 218 ft MSL provides a 22 day supply of cooling water to the SWS pumps under worst case local meteorological conditions. After 22 days, the minimum NPSH for the SWS pumps is reached when the lake level drops to 210.64 ft MSL. The lake surface area at 210.64 ft MSL is capable of providing decay heat cooling for the plant without exceeding the 95°F maximum SWS temperature requirement. Therefore, the necessary lake level for adequate NPSH for the SWS pumps is more limiting than the lake surface area necessary for decay heat removal. The 22 day supply of water is based on the lake volume and surface area values provided in References 2 and 3, an evaporation rate of 35 ft^3/sec (Ref. 4) that assumes both Unit 1 (fossil Plant) and Unit 2 operating at 100% power for 6 hours, an evaporation rate of 17.27 ft^3/sec that assumes Unit 1 in operation and Unit 2 shut down for the remaining 22 day period under maximum evaporation conditions, a head flow of 16 ft^3/sec which is based upon the minimum head flow measured at the Black Creek inlet over the past 30 years (Ref. 5), and a fully open Howell Bunger valve which provides an average flow of 260 ft^3/sec. No credit is taken for natural springs, precipitation or other drainage input into the lake for the 22 day period. The opening and testing of the tainter gate is administratively limited to approximately 2 inches except for flood control measures necessary to protect the integrity of the dam which approximates the capacity of one Howell Bunger valve. A failure of a tainter gate to reclose when the gate is raised 2 inches or less is bounded by a fully open Howell Bunger valve in the analysis.

BASES (continued)

APPLICABILITY

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.

In MODE 5 or 6, the OPERABILITY requirements of the UHS are determined by the systems it supports.

ACTIONS

A.1

If one or more cooling towers have one fan inoperable (i.e., up to one fan per cooling tower inoperable), action must be taken to restore the inoperable cooling tower fan(s) to OPERABLE status within 7 days.

The 7 day Completion Time is reasonable based on the low probability of an accident occurring during the 7 days that one cooling tower fan is inoperable (in one or more cooling towers), the number of available systems, and the time required to reasonably complete the Required Action.

B.1 and B.2

[If the cooling tower fan cannot be restored to OPERABLE status within the associated Completion Time, or] if the UHS is inoperable for reasons other than Condition A, 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 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 unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.8.1

This SR 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

(continued)

APPLICABILITY (continued)

CREFS must be OPERABLE to control operator exposure during and following a DBA.

In [MODE 5 or 6], the CREFS is required to cope with the release from the rupture of an outside waste gas tank. (45)

During movement of irradiated fuel assemblies (and CORE ALTERATIONS), the CREFS must be OPERABLE to cope with the release from a fuel handling accident.

ACTIONS

A.1

When one CREFS train is inoperable, action must be taken to restore OPERABLE status within 7 days. In this Condition, the remaining OPERABLE CREFS train is adequate to perform the control room protection function. However, the overall reliability is reduced because a single failure in the OPERABLE CREFS train could result in loss of CREFS function. The 7 day Completion Time is based on the low probability of a DBA occurring during this time period, and ability of the remaining train to provide the required capability.

B.1 and B.2

In MODE 1, 2, 3, or 4, if the inoperable CREFS train cannot be restored to OPERABLE status within the required Completion Time, the unit must be placed in a MODE that minimizes accident risk. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in 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 unit systems.

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

[In MODE 5 or 6, or] during movement of irradiated fuel assemblies (, or during CORE ALTERATIONS), if the inoperable CREFS train cannot be restored to OPERABLE status within the required Completion Time, action must be taken to immediately place the OPERABLE CREFS train in the emergency

(continued)

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Insert B3.7-53A

Not Used.

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.

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)

Insert B3.7-58A

Not Used.

BASES (continued)

APPLICABILITY

In MODE 1, 2, 3, or 4, the FBACS is required to be OPERABLE to provide fission product removal associated with ECCS leaks due to a LOCA and leakage from containment and annulus.

In MODE 5 or 6, the FBACS is not required to be OPERABLE since the ECCS is not required to be OPERABLE.

During movement of irradiated fuel in the fuel handling area, the FBACS is required to be OPERABLE and operating to alleviate the consequences of a fuel handling accident.

ACTIONS

A.1

With one FBACS train inoperable, action must be taken to restore OPERABLE status within 7 days. During this period, the remaining OPERABLE train is adequate to perform the FBACS function. The 7 day Completion Time is based on the risk from an event occurring requiring the inoperable FBACS train, and the remaining FBACS train providing the required protection.

B.1 and B.2

In MODE 1, 2, 3, or 4, when Required Action A.1 cannot be completed within the associated Completion Time, or when both FBACS trains are inoperable, 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 3 within 6 hours, and in MODE 5 within 36 hours. 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.

C.1 and C.2

When Required Action A.1 cannot be completed within the required Completion Time, during movement of irradiated fuel assemblies in the fuel building, the OPERABLE FBACS train must be started immediately or fuel movement suspended. This action ensures that the remaining train is OPERABLE.

(continued)

Insert B3.7-68A

Not Used.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.13.2 (continued)

Program (VFTP)]. The FBACS filter tests are in accordance with Regulatory Guide 1.52 (Ref. 6). 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). Specific test frequencies and additional information are discussed in detail in the [VFTP].

SR 3.7.13.3

This SR verifies that each FBACS train starts and operates on an actual or simulated actuation signal. The [18] month Frequency is consistent with Reference 6.

SR 3.7.13.4

This SR 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. During the [post accident] mode of operation, the FBACS is designed to maintain a slight negative pressure in the fuel building, to prevent unfiltered LEAKAGE. The FBACS is designed to maintain a ≤ [-0.125] inches water gauge with respect to atmospheric pressure at a flow rate of [20,000] cfm to the fuel building. The Frequency of [18] months is consistent with the guidance provided in NUREG-0800, Section 6.5.1 (Ref. 8).

An [18] month Frequency (on a STAGGERED TEST BASIS) is consistent with Reference 6.

Insert B3.7-70A

SR 3.7.13.5

Operating the FBACS filter bypass damper is necessary to ensure that the system functions properly. The OPERABILITY of the FBACS filter bypass damper is verified if it can be closed. An [18] month Frequency is consistent with Reference 6.

(continued)

Insert B3.7-70A

ISTS SR 3.7.13.4 is modified by a Note. This Note provides clarification that the SR is not applicable when the only movement of irradiated fuel is the movement of the spent fuel shipping cask containing irradiated fuel. This Note is necessary to permit the shipping cask to be removed from the fuel handling building. When the side wall and roof are opened to permit cask egress, ISTS SR 3.7.13.4 cannot be met. OPERABILITY of the FBACS is not necessary when irradiated fuel assemblies are in a spent fuel shipping cask because irradiated fuel assemblies are protected from damage and associated release of fission products by the cask and other controls associated with shipments of spent fuel assemblies.

BASES (continued)

REFERENCES

1. FSAR, Section 6.5.1.
2. FSAR, Section 9.4.5.
3. FSAR, Section 15.7.4.
4. Regulatory Guide 1.25.
5. 10 CFR 100.
6. Regulatory Guide 1.52 (Rev. 2).
8. NUREG-0800, Section 6.5.1, Rev. 2, July 1981.

6. LER 50-261/97-05-00.
7. Certificate of Compliance No. 9001 for Spent Fuel Shipping Cask Model IF-300.

Supp 7

the combined steam flow capacity of the OPERABLE MSSVs and the turbine may be insufficient in some cases to prevent overpressurization of the Main Steam System prior to reaching the reactor trip setpoint.

d. Changes are made to statements in the Bases that are misleading or inconsistent with safety analysis methods.

A generic change has been submitted for the above described changes.

65 The basic performance requirements of the Ultimate Heat Sink (UHS) have been revised from a 30 day supply to a 22 day supply for minimum inflow conditions based upon a revised calculation. The calculation was revised as a result of information provided by the Service Water Pump manufacturer indicating that the Net Positive Suction Head (NPSH) assumption for the pumps should reflect that the pumps do not have antivortex difusers installed on the pumps. The NPSH requirement on the level of Lake Robinson was therefore raised to 210.64 ft MSL.

Additionally, the bases were revised to reflect that administrative control on lifting of the tainter gates would not apply when flood control measures are necessary to protect the integrity of the dam.

66 The bases to UHS are modified to reflect that the plant has a manual switchover of Emergency Core Cooling System (ECCS) suction from the Refueling Water Storage Tank (RWST) to the recirculation phase. The time frame until recirculation is established is longer than the 20 minutes indicated in ISTS.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Verify each AFW manual, power operated, and automatic valve in each water flow path, and in the steam supply flow path to the steam driven AFW pump, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.4.2	------------------NOTE------------------ Not required to be performed for the steam driven AFW pump until 24 hours after ≥ 1000 psig in the steam generator. -- Verify the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head.	 18 months
SR 3.7.4.3	------------------NOTE------------------ Not applicable in MODE 4 when steam generator is being used for heat removal. -- Verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	 18 months

(continued)

3.7 PLANT SYSTEMS

3.7.9 Control Room Emergency Filtration System (CREFS)

LCO 3.7.9 Two CREFS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4
During movement of irradiated fuel assemblies,
During CORE ALTERATIONS.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREFS train inoperable.	A.1 Restore CREFS train to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 5.	6 hours 36 hours
C. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies, or during CORE ALTERATIONS.	C.1 Place OPERABLE CREFS train in emergency pressurization mode. <u>OR</u> C.2.1 Suspend CORE ALTERATIONS. <u>AND</u>	Immediately Immediately (continued)

3.7 PLANT SYSTEMS

3.7.10 Control Room Emergency Air Temperature Control (CREATC)

LCO 3.7.10 Two CREATC Water Cooled Condensing Unit (WCCU) trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4
During movement of irradiated fuel assemblies,
During CORE ALTERATIONS.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CREATC WCCU train inoperable.	A.1 Restore CREATC WCCU train to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

(continued)

3.7 PLANT SYSTEMS

3.7.11 Fuel Building Air Cleanup System (FBACS)

LCO 3.7.11 The FBACS shall be OPERABLE and operating.

APPLICABILITY: During movement of irradiated fuel assemblies in the fuel building.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. The FBACS inoperable during movement of irradiated fuel assemblies in the fuel building.	A.1 Suspend movement of irradiated fuel assemblies in the fuel building.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Operate the FBACS for ≥ 10 continuous hours with the heaters operating automatically.	31 days
SR 3.7.11.2	Perform required FBACS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.11.3	-------------------NOTE------------------ Not required to be met when the only movement of irradiated fuel is movement of the spent fuel shipping cask containing irradiated fuel. -- Verify the FBACS can maintain a negative pressure with respect to atmospheric pressure.	18 months

BASES

ACTIONS (continued)

F.1

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.

SURVEILLANCE REQUIREMENTS

SR 3.7.4.1

Verifying the correct alignment for manual, power operated, and automatic valves in the AFW System water and steam supply flow paths provides assurance that the proper flow paths will exist for AFW operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since they are verified to be in the correct position prior to locking, sealing, or securing. This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves. This Surveillance does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position.

The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.

SR 3.7.4.2

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 (Ref. 4) to monitor centrifugal pump performance. 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.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.4.2 (continued)

The 18 month Frequency is acceptable based on operating experience and other more frequent testing performed in accordance with the Inservice Testing Program.

This SR is modified by a Note indicating that the SR should be deferred until suitable test conditions are established. This deferral is required because there is insufficient steam pressure to perform the test.

SR 3.7.4.3

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 Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. 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. The 18 month Frequency is acceptable based on operating experience and the design reliability of the equipment.

This SR is modified by a Note that states the SR is not required in MODE 4 when AFW is being used for heat removal. In MODE 4, the required AFW train is already aligned and operating.

SR 3.7.4.4

This SR verifies that the AFW pumps will start in the event of any accident or transient that generates an AFW actuation

(continued)

B 3.7 PLANT SYSTEMS

B 3.7.8 Ultimate Heat Sink (UHS)

BASES

BACKGROUND

The UHS provides a heat sink for processing and operating heat from safety related components during a transient or accident, as well as during normal operation. This is done by utilizing the Service Water System (SWS) and the Component Cooling Water (CCW) System.

The UHS has been defined as the Lake Robinson Impoundment, including necessary retaining structures, and the canals or conduits connecting the sources with, but not including, the cooling water system intake structures as discussed in the UFSAR, Section 9.2.4 (Ref. 1). The two principal functions of the UHS are the dissipation of residual heat after reactor shutdown, and dissipation of residual heat after an accident.

The basic performance requirements are that a 22 day supply of water be available, and that the design basis temperatures of safety related equipment not be exceeded.

Lake Robinson is a cooling impoundment of Black Creek. Water is taken directly from the lower end of the lake through a submerged inlet to an intake structure, and pumped through an underground conduit system for use in the plant. It is discharged back to the lake near its upper end through a 4.2 mile long discharge canal. Service water is carried to the plant through two parallel thirty inch diameter conduits, and is returned through a single thirty inch conduit to the discharge canal via the circulating water return.

The impoundment dam is equipped with two Howell Bunger valves to allow small adjustments of lake level and provide limited tail flow temperature control. Flow spills over two electrically-operated tainter gates at an elevation of 220 ft mean sea level (MSL) under normal operation as well as discharging through the Howell Bunger valves when needed. Peak flows at Lake Robinson can be controlled by opening the tainter gates. The tainter gates are provided with an internal combustion engine as a back-up power source in the event of electrical failure.

(continued)

BASES (continued)

APPLICABLE SAFETY ANALYSES

The UHS is the sink for heat removed from the reactor core following all accidents and anticipated operational occurrences in which the unit is cooled down and placed on residual heat removal (RHR) operation. Since the UHS is the normal heat sink for condenser cooling via the Circulating Water System, unit operation at full power is its maximum heat load. Its maximum post accident heat load occurs at the time that recirculation begins after a design basis loss of coolant accident (LOCA). Near this time, the unit switches from injection to recirculation and the containment cooling systems and RHR are required to remove the core decay heat.

The operating limits are based on conservative heat transfer analyses for the worst case LOCA and maintaining adequate net positive suction head (NPSH) for the SWS pumps. The UHS at the minimum allowable level of 218 ft MSL provides a 22 day supply of cooling water to the SWS pumps under worst case local meteorological conditions. After 22 days, the minimum NPSH for the SWS pumps is reached when the lake level drops to 210.64 ft MSL. The lake surface area at 210.64 ft MSL is capable of providing decay heat cooling for the plant without exceeding the 95°F maximum SWS temperature requirement. Therefore, the necessary lake level for adequate NPSH for the SWS pumps is more limiting than the lake surface area necessary for decay heat removal. The 22 day supply of water is based on the lake volume and surface area values provided in References 2 and 3, an evaporation rate of 35 ft^3/sec (Ref. 4) that assumes both Unit 1 (fossil Plant) and Unit 2 operating at 100% power for 6 hours, an evaporation rate of 17.27 ft^3/sec that assumes Unit 1 in operation and Unit 2 shut down for the remaining 22 day period under maximum evaporation conditions, a head flow of 16 ft^3/sec which is based upon the minimum head flow measured at the Black Creek inlet over the past 30 years (Ref. 5), and a fully open Howell Bunger valve which provides an average flow of 260 ft^3/sec. No credit is taken for natural springs, precipitation or other drainage input into the lake for the 22 day period. The opening and testing of the tainter gates is administratively limited to approximately 2 inches except for flood control measures necessary to protect the integrity of the dam which approximates the capacity of one Howell Bunger valve. A failure of a tainter gate to reclose when the gate is raised 2 inches or less is bounded by a fully open Howell Bunger valve in the analysis.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

The UHS satisfies Criterion 3 of the NRC Policy Statement.

LCO

The UHS is required to be OPERABLE and is considered OPERABLE if it contains a sufficient volume of water at or below the maximum temperature that would allow the SWS to operate for at least 22 days following the design basis LOCA without the loss of NPSH, and without exceeding the maximum design temperature of the equipment served by the SWS. To meet this condition, the UHS temperature should not exceed 95°F and the level should not fall below 218 ft MSL during normal unit operation.

APPLICABILITY

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.

In MODE 5 or 6, the OPERABILITY requirements of the UHS are determined by the systems it supports.

ACTIONS

A.1 and A.2

If the UHS is inoperable, 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 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 unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.8.1

This SR verifies that adequate long term (22 day) cooling can be maintained. The specified level also ensures that sufficient NPSH is available to operate the SWS pumps. The

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.8.1 (continued)

24 hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES. This SR verifies that the UHS water level is ≥ 218 ft MSL.

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)

BASES (continued)

LCO

Two independent and redundant trains of the CREAC WCCUs 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.

A WCCU train is OPERABLE when the refrigeration equipment of a particular train is capable of removing the design heat load. Implicit in the operability of the WCCU trains are the instrumentation and controls necessary to support automatic start and temperature control operation. Also implicit in the operability of the WCCU trains is the operability of the SWS supply to the WCCU subsystem.

APPLICABILITY

In MODES 1, 2, 3, 4, and during movement of irradiated fuel assemblies and during CORE ALTERATIONS, the WCCUs must be OPERABLE to ensure that the control room temperature will not exceed equipment operational requirements.

ACTIONS

A.1

With one WCCU train inoperable, action must be taken to restore OPERABLE status within 30 days. In this Condition, the remaining OPERABLE WCCU train is adequate to maintain the control room temperature within limits. However, the overall reliability is reduced because a single failure in the OPERABLE WCCU train could result in loss of cooling function. The 30 day Completion Time is based on the

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

throughout the UFSAR, Chapter 15.

The FBACS satisfies Criterion 3 of the NRC Policy Statement.

LCO

The FBACS is required to be OPERABLE and operating. Total system failure could result in the atmospheric release from the fuel handling building exceeding the 10 CFR 100 (Ref. 4) limits in the event of a fuel handling accident.

The FBACS is considered OPERABLE when the individual components necessary to control exposure in the fuel handling building are OPERABLE. The FBACS is considered OPERABLE when its:

a. Fan is OPERABLE;

b. HEPA filter and charcoal adsorber are not excessively restricting flow, and are capable of performing their filtration function; and

c. Heater, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

APPLICABILITY

During movement of irradiated fuel in the fuel handling area, the FBACS is required to be OPERABLE and operating to alleviate the consequences of a fuel handling accident.

ACTIONS

A.1

When the FBACS is inoperable during movement of irradiated fuel assemblies in the fuel building, action must be taken to place the unit in a condition in which the LCO does not apply. Action must be taken immediately to suspend movement of irradiated fuel assemblies in the fuel building. This does not preclude the movement of fuel to a safe position.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.7.11.1

The FBACS should 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. Systems with heaters must be operated for ≥ 10 continuous hours with the heaters energized. The 31 day Frequency is based on the known reliability of the equipment.

SR 3.7.11.2

This SR 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). Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.7.11.3

This SR 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 FBACS is designed to maintain a slight negative pressure in the fuel building, to prevent unfiltered LEAKAGE. The Frequency of 18 months is consistent with the guidance provided in NUREG-0800, Section 6.5.1 (Ref. 5).

ISTS SR 3.7.13.4 is modified by a Note. This Note provides clarification that the Surveillance is not applicable when the only movement of irradiated fuel is movement of a spent fuel shipping cask containing irradiated fuel. This Note is necessary to permit the shipping cask to be removed from the fuel handling building. When the side walls are opened to permit cask egress, ISTS SR 3.7.13.4 cannot be met. OPERABILITY of the FBACS is not necessary when irradiated

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.11.3 (continued)

fuel assemblies are in a spent fuel shipping cask because irradiated fuel assemblies are protected from damage and associated release of fission products by the cask and other controls associated with shipments of spent fuel assemblies.

REFERENCES

1. UFSAR, Section 6.5.1.
2. UFSAR, Section 9.4.5.
3. UFSAR, Section 15.7.4.
4. 10 CFR 100.
5. NUREG-0800, Section 6.5.1, Rev. 2, July 1981.
6. Licensee Event Report (LER) 50-26/97-05, dated May 22, 1997.
7. Certificate of Compliance No. 9001 for Spent Fuel Shipping Cask Model IF-300, dated March 26, 1996.

SUPPLEMENT 7
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)"	
	NA	
	Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
	NA	
c.	Part 3, " No Significant Hazards Consideration (NSHC), And Basis for Categorical Exclusion from 10 CFR 51.22	
	NA	
d.	Part 4, "Markup of NUREG-4131, Revision 1, Standard Technical Specifications-Westinghouse Plants, (ISTS)"	
	3.8-18, Insert 3.8-18A (page 3.8-18a)(3.8.2),	3.8-18, Insert 3.8-18A (page 3.8-18a) (3.8.2),
	3.8-28, Insert 3.8-28A (page 3.8-28a)(3.8.5)	3.8-28, Insert 3.8-28A (page 3.8-28a) (3.8.5),
	3.8-36, Insert 3.8-36A (page 3.8-36a) (3.8.8),	3.8-36, Insert 3.8-36A (page 3.8-36a) (3.8.8),
	3.8-40, Insert 3.8-40A (page 3.8-40a) (3.8.10)	3.8-40, Insert 3.8-40A (page 3.8-40a) (3.8.10)
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	6, 9, and 10	6, 9, and 10
f.	Part 6, "Markup of ISTS Bases"	
	B 3.8-6, B 3.8-7(B 3.8.1),	B 3.8-6, B 3.8-7(B 3.8.1),
	B 3.8-38(B 3.8.2),	B 3.8-38 B 3.8-38a(B 3.8.2),
	B 3.8-58(B 3.8.4),	B 3.8-58(B 3.8.4),
	B 3.8-61(B 3.8.5),	B 3.8-61, B 3.8-61a(B 3.8.5),
	B 3.8-76(B 3.8.8),	B 3.8-76(B 3.8.8),
	B 3.8-90, B 3.8-91 (B 3.8.10)	B 3.8-90, B 3.8-90a, B 3.8-91 (B 3.8.10)
g.	Part 7, "Justification for Differences (JFDs) to ISTS Bases"	
	5	5

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
h.	Part 8, "Proposed HBRSEP, Unit No. 2 ITS"	
	3.8-13(3.8.2),	3.8-13(3.8.2),
	3.8-22(3.8.5),	3.8-22(3.8.5),
	3.8-30(3.8.8),	3.8-30(3.8.8),
	3.8-35(3.8.10)	3.8-35(3.8.10)
i.	Part 9. "Proposed Bases to HBRSEP, Unit No. 2 ITS Bases"	
	B 3.8-6, B 3.8-7, B 3.8-8,	B 3.8-6, B 3.8-7, B 3.8-8,
	B 3.8-9, B 3.8-10, B 3.8-11,	B 3.8-9, B 3.8-10, B 3.8-11,
	B 3.8-12, B 3.8-13, B 3.8-14,	B 3.8-12, B 3.8-13, B 3.8-14,
	B 3.8-15, B 3.8-16, B 3.8-17,	B 3.8-15, B 3.8-16, B 3.8-17,
	B 3.8-18, B 3.8-19 (B 3.8.1),	B 3.8-18, B 3.8-19 (B 3.8.1),
	B 3.8-29, B 3.8-30, Insert B 3.8.2-1,	B 3.8-29, B 3.8-30, -
	B 3.8-31,Insert B 3.8-38A(B 3.8.2)	B 3.8-31,(B 3.8.2)
	B 3.8-44(B 3.8.4),	B 3.8-44(B 3.8.4),
	B 3.8-47, B 3.8-48,	B 3.8-47, B 3.8-48,
	Insert B 3.8.5-1 (no page no.)	-
	B 3.8-49 (B 3.8.5),	B 3.8-49 (B 3.8.5),
	Insert B 3.8-61A (page B 3.8-61a)	-
	B 3.8-63, B 3.8-64,	B 3.8.8 (pages B 3.8-63, B 3.8-64,
	Insert B 3.8.8-1A (no page no.)	-
	B 3.8-64a,	-
	Insert B 3.8-76A	-
	(page B 3.8-76a) (B 3.8.8)	- (B3.8.8)
	B 3.8-79, B 3.8-80, B 3.8-81	B 3.8-79, B 3.8-80, B 3.8-81
	Insert B 3.8-90A (page B 3.8-90a)	-
	Insert B 3.8.10-1	-
	(page B 3.8-91a) (B 3.8.10)	(B 3.8.10)

Part 10. "ISTS Generic Changes"
NA

CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 AC Sources – Shutdown

[M 7] LCO 3.8.2 The following AC electrical power sources shall be OPERABLE:

a. One qualified circuit between the offsite transmission network and the onsite ~~Class 1E~~ AC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems – Shutdown", and (2)

b. One diesel generator (DG) capable of supplying one train of the onsite ~~Class 1E~~ AC electrical power distribution subsystem(s) required by LCO 3.8.10.

[M 7] APPLICABILITY: MODES 5 and 6,
During movement of irradiated fuel assemblies

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
[M 7] A. ~~One~~ The required offsite circuit inoperable.	------------NOTE------------ Enter applicable Conditions and Required Actions of LCO 3.8.10, with one required train de-energized as a result of Condition A. ----------------------------	
[M 7]	A.1 Declare affected required feature(s) with no offsite power available inoperable.	Immediately
	OR	
[M 7]	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
		(continued)

Supplement 7

Insert 3.8-18A

Not Used.

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources – Shutdown

[M 14] LCO 3.8.5 DC electrical power subsystem shall be OPERABLE to support the DC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems – Shutdown."

[M 14] APPLICABILITY: MODES 5 and 6,
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
[M 14] A. One or more required DC electrical power subsystems inoperable.	A.1.1 Declare affected required feature(s) inoperable.	Immediately
	OR	
[M 14]	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
[M 14]	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	AND	
[M 14]	A.2.3 Initiate action to suspend operations involving positive reactivity additions.	Immediately
	AND	
		(continued)

Insert 3.8-28A

Not Used.

CTS

AC Instrument Bus Sources 44

3.8 ELECTRICAL POWER SYSTEMS

3.8.8 Inverters – Shutdown

Insert 3.8.8-1 44 2

[M17] LCO 3.8.8 Inverters shall be OPERABLE to support the onsite Class 1E AC vital bus electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems – Shutdown." 24

instrument Insert 3.8.8-2 44

[M17] APPLICABILITY: MODES 5 and 6,
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
[M17] A. One or more [required] Inverters inoperable. (AC Instrument Bus Sources 44)	A.1 Declare affected required feature(s) inoperable.	Immediately
	OR	
[M17]	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
[M17]	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	AND	
[M17]	A.2.3 Initiate action to suspend operations involving positive reactivity additions.	Immediately
	AND	
		(continued)

7

Insert 3.8-36A

Not Used.

CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.10 Distribution Systems – Shutdown

[M23] LCO 3.8.10 The necessary portion of AC, DC, and AC ~~vital~~ Instrument bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE. (24)

[M23] APPLICABILITY: MODES 5 and 6,
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
[M23] A. One or more required AC, DC, or AC ~~vital~~ Instrument bus electrical power distribution subsystems inoperable. (24)	A.1	Declare associated supported required feature(s) inoperable.	Immediately
	<u>OR</u>		
[M23]	A.2.1	Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>		
[M23]	A.2.2	Suspend movement of irradiated fuel assemblies.	Immediately
	<u>AND</u>		
[M23]	A.2.3	Initiate action to suspend operations involving positive reactivity additions.	Immediately
	<u>AND</u>		
			(continued)

Supplement 7

Insert 3.8-40A

Not Used.

storage tank as stated in the Bases for SR 3.8.3.6. Since there is no CTS requirement and the failure of this SR does not necessarily result in an inoperable DG, inspection of the fuel oil storage tanks is retained under licensee control and ITS 3.8.1.6 is not adopted. This is consistent with the CLB for HBRSEP UNit No. 2. Operating experience coupled with CLB demonstrate the adequacy of current practice to maintain fuel oil quality. Preventative maintenance SRs have generally been relocated from the TS and retained under licensee control. This SR is similar to the DG inspection SR, which has been relocated to plant licensee controlled documents. Performance of ITS SR 3.8.3.2 (fuel oil testing) and the limits of the diesel fuel oil testing program help ensure tank sediment is minimized. Performance of ITS SR 3.8.3.1 (fuel oil volume verification) once per 31 days ensures that any degradation of the tank wall surface that results in a fuel volume reduction is detected and corrected in a timely manner.

31 Not Used.

32 The Bases for ISTS SR 3.8.4.3 states that this SR provides an indication of physical damage or abnormal deterioration that could degrade battery performance. Some degradation or physical damage might be identified during performance of this SR which does not degrade battery performance. The presence of physical damage or deterioration does not represent a failure of SR 3.8.4.3 provided an evaluation determines that the physical damage or deterioration does not affect the OPERABILITY of the battery.

33 The HBRSEP design provides two battery chargers for each battery. Consequently, ITS SR 3.8.4.4 can be performed on one charger while the other charger remains connected to the battery.

34 SR 3.8.4.2 and SR 3.8.4.5 are not adopted consistent with the current licensing basis since they do not provide a direct indication of battery OPERABILITY. A battery may indicate visible corrosion and exceed the connection resistance limits and still be OPERABLE. Therefore, the maintenance of these connections is proposed to continue to be controlled in plant procedures. This change is also consistent with

Pressurizer PORVs for Low Temperature Overpressure Protection (ITS 3.4.12);

Containment radiation monitors for Containment Ventilation Isolation Instrumentation (ITS 3.3.6);

Control room radiation monitor for Control Room Emergency Filtration System (CREFS) Instrumentation (ITS 3.3.7); and

Automatic Actuation Logic and Actuation Relays for CREFS Instrumentation (ITS 3.3.7)

The proposed change to the requirements for AC instrument bus sources will continue to assure that sufficient power is available to support the response to events postulated during shutdown conditions in the event of a loss of offsite power or a single failure. It should also be noted that this change is consistent with the initial philosophy of the ITS NUREGs.

45 ISTS SR 3.8.1.9 is adopted in ITS as SR 3.8.1.8, with the acceptance criteria changed to state that the DG does not trip on overspeed. A test similar to this SR has only been performed once in the past and acceptance criteria were not established for that test other than the DG would not trip on overspeed. The test showed that the DG could reject a large load (i.e, a Containment Spray pump and a Containment Cooling Unit) without experiencing an overspeed trip. Since the DG does not trip, the DG remains OPERABLE and the emergency bus continues to perform its required function.

46 Not Used.

(1)

BASES

ACTIONS

A.2 (continued)

(10)

The Completion Time for Required Action A.2 is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." In this Required Action, the Completion Time only begins on discovery that both:

a. The train has no offsite power supplying it loads; and

b. A required feature on the other train is inoperable.

If at any time during the existence of Condition A (one offsite circuit inoperable) a redundant required feature subsequently becomes inoperable, this Completion Time begins to be tracked.

Discovering no offsite power to one train of the onsite Class 1E Electrical Power Distribution System coincident with one or more inoperable required support or supported features, or both, that are associated with the other train that has offsite power, results in starting the Completion Times for the Required Action. Twenty-four hours is acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

The remaining OPERABLE offsite circuit and DGs are adequate to supply electrical power to Train A and Train B of the onsite Class 1E Distribution System. The 24 hour Completion Time takes into account the component OPERABILITY of the redundant counterpart to the inoperable required feature. Additionally, the 24 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

A.3 (2)

(11)

~~According to Regulatory Guide 1.93 (Ref. 6)~~ operation may continue in Condition A for a period that should not exceed (the) 72 (24) hours. With one offsite circuit inoperable, the reliability of the ~~offsite~~ (AC Power) system is degraded, ~~and the~~ (3)

(continued)

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BASES

ACTIONS

A.2 (continued)

potential for a loss of offsite power is increased, with attendant potential for a challenge to the unit safety systems. In this Condition, however, the remaining OPERABLE offsite circuits and DGs are adequate to supply electrical power to the onsite Class 1E Distribution System.

The 72 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

The second Completion Time for Required Action A.2 establishes a limit on the maximum time allowed for any combination of required AC power sources to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition A is entered while, for instance, a DG is inoperable and that DG is subsequently returned OPERABLE, the LCO may already have been not met for up to 72 hours. This could lead to a total of 144 hours, since initial failure to meet the LCO, to restore the offsite circuit. At this time, a DG could again become inoperable, the circuit restored OPERABLE, and an additional 72 hours (for a total of 9 days) allowed prior to complete restoration of the LCO. The 6 day Completion Time provides a limit on the 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. The "AND" connector between the 72 hour and 6 day Completion Times means that both Completion Times apply simultaneously, and the more restrictive Completion Time must be met.

As in Required Action A.2, the Completion Time allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." This will result in establishing the "time zero" at the time that the LCO was initially not met, instead of at the time Condition A was entered.

B.1

To ensure a highly reliable power source remains with an inoperable DG, it is necessary to verify the availability of

(continued)

Supplement 7

①

BASES

③

LCO (continued)

It is acceptable for trains to be cross tied during shutdown conditions, allowing a single offsite power circuit to supply all required trains.

APPLICABILITY

The AC sources required to be OPERABLE in MODES 5 and 6 and 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.

The AC power requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.1.

ACTIONS

A.1

An offsite circuit would be considered inoperable if it were not available to one required ESF train. Although two trains are required by LCO 3.8.10, the one train with offsite power available may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS and fuel movement. By the allowance of the option to declare required features inoperable, with no offsite power available, appropriate restrictions will be implemented in accordance with the affected required features LCO's ACTIONS.

(continued)

Supplement 7

Insert B3.8.2-1

Not Used.

Insert B3.8.38A

Not Used.

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 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).

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

UFSAR, Section 3.1

85% for Battery "A" or 95% for Battery "B"

average

generally

Insert B 3.8.4-3

Insert B 3.8.4-4

REFERENCES

1. 10 CFR 50, Appendix A, GDC 17.

2. Regulatory Guide 1.6, March 10, 1971.

3. IEEE-308-[1978].

(continued)

LCO (continued)

interconnecting cabling within the train, are required to be OPERABLE to support required trains of the distribution systems required OPERABLE by LCO 3.8.10, "Distribution Systems – Shutdown." This ensures the availability of sufficient DC electrical power sources to operate the unit in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents).

APPLICABILITY

The DC electrical power sources required to be OPERABLE in MODES 5 and 6, and 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.

The DC electrical power requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.4.

ACTIONS

A.1, A.2.1, A.2.2, A.2.3, and A.2.4

If two trains are required by LCO 3.8.10, the remaining train with DC power available may be capable of supporting sufficient systems to allow continuation of CORE ALTERATIONS and fuel movement. By allowing the option to declare required features inoperable with the associated DC power source(s) inoperable, appropriate restrictions will be implemented in accordance with the affected required features LCO ACTIONS. In many instances, this option may involve undesired administrative efforts. Therefore, the

(continued)

Supplement 7

Insert B3.8.5-1

Not Used.

Insert B 3.8-61A

Not Used.

AC Instrument Bus Sources (10) (1)

BASES (continued)

LCO

The inverters ensure the availability of electrical power for the instrumentation for systems required to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence or a postulated DBA. The battery powered inverters provide uninterruptible supply of AC electrical power to the AC vital buses even if the 4.16 kV safety buses are de-energized. OPERABILITY of the inverters requires that the AC vital bus be powered by the inverter. This ensures the availability of sufficient inverter power sources to operate the unit in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents).

Insert B 3.8.8-1A (10)

AC Instrument Bus Sources (10)

APPLICABILITY

The inverters required to be OPERABLE in MODES 5 and 6 and during movement of irradiated fuel assemblies provide assurance that:

AC Instrument Bus Sources (10)

a. Systems to provide adequate coolant inventory makeup are available for the irradiated fuel 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.

Inverter requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.7.

AC Instrument Bus Sources (10)

ACTIONS

A.1, A.2.1, A.2.2, A.2.3, and A.2.4

If two trains are required by LCO 3.8.10, "Distribution Systems – Shutdown," the remaining OPERABLE Inverters may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS, fuel movement, and operations with a potential for positive reactivity additions. By the allowance of the option to declare

With one or more required AC instrument bus inoperable when

AC Instrument Bus Sources (10)

(continued)

Supplement 7

Insert B3.8.8-1A

At least one AC instrument bus train energized by one battery powered inverter or a constant voltage transformer (CVT) ensures that the preferred source of AC instrument bus electrical power is available to at least one AC instrument bus. OPERABILITY of the inverters and CVTs requires that the AC instrument bus be powered from the associated inverter or CVT, as applicable. When the redundant train of the AC instrument bus electrical power distribution subsystem is required by LCO 3.8.10, the power source for this AC instrument bus may consist of : 1) the inverter powered by its associated battery; 2) the CVT; or 3) an offsite circuit providing power through a motor control center.

Insert B3.8.8-1

Not Used.

Insert B 3.8-76A

Not Used.

BASES (continued)

LCO

Various combinations of subsystems, equipment, and components are required OPERABLE by other LCOs, depending on the specific plant condition. Implicit in those requirements is the required OPERABILITY of necessary support required features. This LCO explicitly requires energization of the portions of the electrical distribution system necessary to support OPERABILITY of required systems, equipment, and components – all specifically addressed in each LCO and implicitly required via the definition of OPERABILITY.

Maintaining these portions of the distribution system energized ensures the availability of sufficient power to operate the unit in a safe manner to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents).

APPLICABILITY

The AC and DC electrical power distribution subsystems required to be OPERABLE in MODES 5 and 6, and during movement of irradiated fuel assemblies, provide assurance that:

a. Systems to provide adequate coolant inventory makeup are available for the irradiated fuel 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 and refueling condition.

(27) instrument

The AC, DC, and AC vital bus electrical power distribution subsystems requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.9.

(continued)

Insert B 3.8-90A

Not Used.

Insert B 3.8-10-1

Not used.

BASES (continued)

ACTIONS

A.1, A.2.1, A.2.2, A.2.3, A.2.4, and A.2.5

Although redundant required features may require redundant trains of electrical power distribution subsystems to be OPERABLE, one OPERABLE distribution subsystem train may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS and fuel movement. By allowing the option to declare required features associated with an inoperable distribution subsystem inoperable, appropriate restrictions are implemented in accordance with the affected distribution subsystem LCO's Required Actions. In many instances, this option may involve undesired administrative efforts. Therefore, the allowance for sufficiently conservative actions is made (i.e., to suspend CORE ALTERATIONS, movement of irradiated fuel assemblies, and operations involving positive reactivity additions).

Suspension of these activities does not preclude completion of actions to establish a safe conservative condition. These actions minimize the probability of the occurrence of postulated events. It is further required to immediately initiate action to restore the required AC and DC electrical power distribution subsystems and to continue this action until restoration is accomplished in order to provide the necessary power to the unit safety systems.

Notwithstanding performance of the above conservative Required Actions, a required residual heat removal (RHR) subsystem may be inoperable. In this case, Required Actions A.2.1 through A.2.4 do not adequately address the concerns relating to coolant circulation and heat removal. Pursuant to LCO 3.0.6, the RHR ACTIONS would not be entered. Therefore, Required Action A.2.5 is provided to direct declaring RHR inoperable, which results in taking the appropriate RHR actions.

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required distribution subsystems should be completed as quickly as possible in order to minimize the time the unit safety systems may be without power.

(continued)

Supplement 7

systems. Therefore to ensure accuracy as well as consistency with other ITS sections, the term "single active failure" is used.

53 Provided clarification that in MODES 5 and 6 the unit auxiliary transformer backfed through the unit main transformer can be used as part of the qualified offsite circuit. This is CLB for HBRSEP Unit No. 2. The use of back charged unit auxiliary transformer when unit is shutdown is described in UFSAR Sections 8.2 and 8.3. This capability was reviewed and approved by NRC by issuance of Amendment No. 88 dated 1/2/85.

54 The references are modified based upon either plant specific utilization in the associated Bases or specific applicability to the facility.

55 The minimum battery voltage output of 2.13 volts per cell and total output of 128 volts is not discussed in the UFSAR.

56 The bases to SR 3.8.4.1 are revised to reflect the voltage associated with a single battery cell jumpered out. This change is consistent with the current licensing basis which does not specify the battery float voltage requirement.

57 Not Used.

58 The Bases description for ITS SR 3.8.4.6 is modified to indicate "average on previous performance test." This corrects the Bases text to be consistent with the applicable revision of IEEE-450.

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 AC Sources – Shutdown

LCO 3.8.2 The following AC electrical power sources shall be OPERABLE:

a. One qualified circuit between the offsite transmission network and the onsite AC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems – Shutdown"; and

b. One diesel generator (DG) capable of supplying one train of the onsite AC electrical power distribution subsystem(s) required by LCO 3.8.10.

APPLICABILITY: MODES 5 and 6 and
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. The required offsite circuit inoperable.	------------NOTE------------ Enter applicable Conditions and Required Actions of LCO 3.8.10, with one required train de-energized as a result of Condition A. ----------------------------	
	A.1 Declare affected required feature(s) with no offsite power available inoperable.	Immediately
	<u>OR</u>	
		(continued)

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources – Shutdown

LCO 3.8.5 DC electrical power subsystem shall be OPERABLE to support the DC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems – Shutdown."

APPLICABILITY: MODES 5 and 6, and
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required DC electrical power subsystems inoperable.	A.1.1 Declare affected required feature(s) inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	<u>AND</u>	
		(continued)

3.8 ELECTRICAL POWER SYSTEMS

3.8.8 AC Instrument Bus Sources – Shutdown

LCO 3.8.8 AC instrument bus source shall be OPERABLE to support the onsite AC instrument bus electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems – Shutdown."

APPLICABILITY: MODES 5 and 6, and
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more AC instrument bus sources inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	<u>AND</u>	
		(continued)

3.8 ELECTRICAL POWER SYSTEMS

3.8.10 Distribution Systems – Shutdown

LCO 3.8.10 The necessary portion of AC, DC, and AC instrument bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE.

APPLICABILITY: MODES 5 and 6, and
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required AC, DC, or AC instrument bus electrical power distribution subsystems inoperable.	A.1 Declare associated supported required feature(s) inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	<u>AND</u>	(continued)

BASES

ACTIONS

A.1 (continued)

upon the assumption that two complete safety trains are OPERABLE. When no offsite sources are OPERABLE, this assumption is not the case, and a shorter Completion Time of 12 hours is appropriate.

A.2

Operation may continue in Condition A for a period that should not exceed 24 hours. With the offsite circuit inoperable, the reliability of the AC system is degraded, with attendant potential for a challenge to the unit safety systems. In this Condition, however, the remaining OPERABLE DGs are adequate to supply electrical power to the onsite Distribution System.

The 24 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

The second Completion Time for Required Action A.1 establishes a limit on the maximum time allowed for any combination of required AC power sources to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition A is entered while, for instance, a DG is inoperable and that DG is subsequently returned OPERABLE, the LCO may already have been not met for up to 7 days. This could lead to a total of 8 days, since initial failure to meet the LCO, to restore the offsite circuit. At this time, a DG could again become inoperable, the circuit restored OPERABLE, and an additional 7 days (for a total of 15 days) allowed prior to complete restoration of the LCO. The 8 day Completion Time provides a limit on the 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. The "AND" connector between the 24 hours and 8 day Completion Times means that both Completion Times apply simultaneously, and the more restrictive Completion Time must be met.

The Completion Time allows for an exception to the normal "time zero" for beginning the allowed outage time "clock."

(continued)

BASES

ACTIONS

A.2 (continued)

This will result in establishing the "time zero" at the time that the LCO was initially not met, instead of at the time Condition A was entered.

B.1

To ensure a highly reliable power source remains with an inoperable DG, it is necessary to verify the availability of the offsite circuit on a more frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action being not met. However, if a circuit fails to pass SR 3.8.1.1, it is inoperable. Upon offsite circuit inoperability, additional Conditions and Required Actions must then be entered.

B.2

Required Action B.2 is intended to provide assurance that a loss of offsite power, during the period that a DG is inoperable, does not result in a complete loss of safety function of critical systems. These features are designed with redundant safety related trains. This includes motor driven auxiliary feedwater pumps. Single train systems, such as turbine driven auxiliary feedwater pumps, are not included. Redundant required feature failures consist of inoperable features associated with a train, redundant to the train that has an inoperable DG.

The Completion Time for Required Action B.2 is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." In this Required Action, the Completion Time only begins on discovery that both:

a. An inoperable DG exists; and

b. A required redundant feature on the other train (Train A or Train B) is inoperable.

(continued)

BASES

ACTIONS

B.2 (continued)

If at any time during the existence of this Condition (one DG inoperable) a required feature subsequently becomes inoperable, this Completion Time would begin to be tracked.

Discovering one required DG inoperable coincident with one or more inoperable required support or supported features, or both, that are associated with the OPERABLE DG, results in starting the Completion Time for the Required Action. Four hours from the discovery of these events existing concurrently is Acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

In this Condition, the remaining OPERABLE DG and offsite circuit is adequate to supply electrical power to the onsite Distribution System. Thus, on a component basis, single failure protection for the required feature's function may have been lost; however, function has not been lost. The 4 hour Completion Time takes into account the OPERABILITY of the redundant counterpart to the inoperable required feature. Additionally, the 4 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

B.3.1, B.3.2.1, and B.3.2.2

Required Action B.3.1 requires performing SR 3.8.1.2 for the OPERABLE DG within 24 hours. This action is required to confirm the remaining DG remains OPERABLE.

Required Action B.3.2.1 provides an allowance to avoid unnecessary testing of the OPERABLE DG. If it can be determined that the cause of the inoperable DG does not exist on the OPERABLE DG, SR 3.8.1.2 does not have to be performed within 24 hours. If the cause of inoperability exists on the other DG, the other DG would be declared inoperable upon discovery and Condition D of LCO 3.8.1 would be entered. Once the failure is repaired, the common cause failure no longer exists, and Required Action B.3.1 is satisfied. If the cause of the initial inoperable DG cannot be confirmed not to exist on the remaining DG(s),

(continued)

BASES

ACTIONS

B.3.1, B.3.2.1, and B.3.2.2 (continued)

performance of SR 3.8.1.2 suffices to provide assurance of continued OPERABILITY of that DG.

If it is verified within 24 hours that the OPERABLE DG is not inoperable due to common cause failure, SR 3.8.1.2 need not be performed within 24 hours. However, it is still necessary to verify the OPERABILITY of the OPERABLE DG within 96 hours. Testing the OPERABLE DG more than once during the 7 day Completion Time is not required.

In the event the inoperable DG is restored to OPERABLE status prior to completing either B.3.1 or B.3.2, the plant corrective action program will continue to evaluate the common cause possibility. This continued evaluation, however, is no longer under the 24 hour constraint imposed while in Condition B.

According to Generic Letter 84-15 (Ref. 6), 24 hours is reasonable to confirm that the OPERABLE DG(s) is not affected by the same problem as the inoperable DG.

B.4

Operation may continue in Condition B for a period that should not exceed 7 days.

In Condition B, the remaining OPERABLE DG and offsite circuit are adequate to supply electrical power to the onsite Distribution System. The 7 day Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

The second Completion Time for Required Action B.4 establishes a limit on the maximum time allowed for any combination of required AC power sources to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition B is entered while, for instance, an offsite circuit is inoperable and that circuit is subsequently restored OPERABLE, the LCO may already have been not met for up to 24 hours. This could lead to a total of 8 days, since initial failure to meet the LCO, to restore the DG. At this time, an offsite circuit could again become

(continued)

BASES

ACTIONS

B.4 (continued)

inoperable, the DG restored OPERABLE, and an additional 24 hours (for a total of 9 days) allowed prior to complete restoration of 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. The "AND" connector between the 7 day and 8 day Completion Times means that both Completion Times apply simultaneously, and the more restrictive Completion Time must be met.

As in Required Action B.2, the Completion Time allows for an exception to the normal "time zero" for beginning the allowed time "clock." This will result in establishing the "time zero" at the time that the LCO was initially not met, instead of at the time Condition B was entered.

C.1 and C.2

If the inoperable AC electric power sources cannot be restored to OPERABLE status within the required Completion Time, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to 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.

D.1

Condition D 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.

(continued)

BASES

ACTIONS

D.1 (continued)

Condition is modified by a Note which permits delaying entry into the Condition for no longer than 2 hours to permit the testing required by SR 3.8.1.2 for the OPERABLE DG since this testing renders the DG inoperable.

SURVEILLANCE REQUIREMENTS

The AC sources are designed to permit inspection and testing of all important areas and features, especially those that have a standby function, in accordance with HBRSEP Design Criteria (Ref. 1). Periodic component tests are supplemented by extensive functional tests during refueling outages (under simulated accident conditions). The SRs for demonstrating the OPERABILITY of the DGs are consistent with the recommendations of Regulatory Guide 1.137 (Ref. 6), as addressed in the UFSAR.

Where the SRs discussed herein specify voltage and frequency tolerances, the following is applicable. The minimum steady state output voltage of 467 V is 97% of the nominal 480 V output voltage. It allows for voltage drops to motors and other equipment down through the 120 V level where minimum operating voltage is also usually specified as 90% of name plate rating. The specified maximum steady state output voltage of 493 V is within the maximum operating voltage specified for the motors supplied by the 480 V subsystem. It ensures that for a lightly loaded distribution system, the voltage at the terminals of motors is no more than the maximum rated operating voltages. The specified minimum and maximum frequencies of the DG are 58.8 Hz and 61.2 Hz, respectively. These values are equal to ± 2% of the 60 Hz nominal frequency and are consistent with the recommendations given in Regulatory Guide 1.9 (Ref. 7).

SR 3.8.1.1

This SR 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

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.1.2 and SR 3.8.1.7

to change without the operator being aware of it and because its status is displayed in the control room.

These SRs help 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.

To minimize the wear on moving parts that do not get lubricated when the engine is not running, these SRs are modified by a Note (Note 2 for SR 3.8.1.2) to indicate that all DG starts for these Surveillances may be preceded by an engine prelube period and followed by a warmup period prior to loading.

For the purposes of SR 3.8.1.2 and SR 3.8.1.7 testing, the DGs are started from standby conditions. Standby conditions for a DG mean that the diesel engine coolant and oil are being continuously circulated and temperature is being maintained consistent with manufacturer recommendations.

In order to reduce stress and wear on diesel engines, the manufacturer recommends a modified start in which the starting speed of DGs is limited, warmup is limited to this lower speed, and the DGs are gradually accelerated to synchronous speed prior to loading. These start procedures are the intent of Note 3, which is only applicable when such modified start procedures are recommended by the manufacturer.

SR 3.8.1.7 requires that, at a 184 day Frequency, the DG starts from standby conditions and achieves required voltage and frequency within 10 seconds. 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, 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. In lieu of a time constraint in the SR, HBRSEP Unit No. 2 will monitor and trend the actual

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.2 and SR 3.8.1.7 (continued)

time to reach steady state operation as a means of assuring there is no voltage regulator or governor degradation which could cause a DG to become inoperable. The 10 second start requirement supports the assumptions of the design basis LOCA analysis in the UFSAR, Chapter 15 (Ref. 4).

The 10 second start requirement is not applicable to SR 3.8.1.2 (see Note 3) when a modified start procedure as described above is used. If a modified start is not used, the 10 second start requirement of SR 3.8.1.7 applies.

Since SR 3.8.1.7 requires a 10 second start, it is more restrictive than SR 3.8.1.2, and it may be performed in lieu of SR 3.8.1.2. This is the intent of Note 1 of SR 3.8.1.2.

The 31 day Frequency for SR 3.8.1.2 is consistent with Regulatory Guide 1.9 (Ref. 7). The 184 day Frequency for SR 3.8.1.7 is a reduction in cold testing consistent with Generic Letter 84-15 (Ref. 5). These Frequencies provide adequate assurance of DG OPERABILITY, while minimizing degradation resulting from testing.

SR 3.8.1.3

This Surveillance verifies that the DGs are capable of synchronizing with the offsite electrical system and accepting loads approximating the design rating of the DGs. A minimum run time of 60 minutes is required to stabilize engine temperatures, while minimizing the time that the DG is connected to the offsite source.

Although no power factor requirements are established by this SR, the DG is normally operated at a power factor between 0.8 lagging and 1.0. The 0.8 value is the design rating of the machine, while the 1.0 is a physical limitation. 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 31 day Frequency for this Surveillance is consistent with Regulatory Guide 1.9 (Ref. 7).

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.3 (continued)

This SR is modified by five Notes. Note 1 indicates that diesel engine runs for this Surveillance may include gradual loading, as recommended by the manufacturer, so that mechanical stress and wear on the diesel engine are minimized. Note 2 states that momentary transients, because of changing bus loads, do not invalidate this test. Similarly, momentary power factor transients above the limit do not invalidate the test. Note 3 indicates that this Surveillance should be conducted on only one DG at a time in order to avoid common cause failures that might result from offsite circuit or grid perturbations. Note 4 stipulates a prerequisite requirement for performance of this SR. A successful DG start must precede this test to credit satisfactory performance. Note 5 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 3.8.1.4

This SR 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

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. Water may

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.5 (continued)

come from any of several sources, including condensation, ground water, rain water, contaminated fuel oil, and breakdown of the fuel oil by bacteria. Frequent checking for and removal of accumulated water minimizes fouling and provides data regarding the watertight integrity of the fuel oil system. The Surveillance Frequencies are established by Regulatory Guide 1.137 (Ref. 6). This SR is for preventative maintenance. The presence of water does not necessarily represent failure of this SR, provided the accumulated water is removed during the performance of this Surveillance.

SR 3.8.1.6

This Surveillance 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

See SR 3.8.1.2.

SR 3.8.1.8

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 overspeed, which, if excessive, might result in a trip of the engine. This Surveillance demonstrates the DG load

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.8 (continued)

response characteristics and capability to reject the largest single load without exceeding the overspeed trip.

For this unit, the single load for each DG is a safety injection pump rated at 380 Brake Horsepower. 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.

The 18 month Frequency is consistent with the recommendation of Regulatory Guide 1.108 (Ref. 8).

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. In order to ensure that the DG is tested under load conditions that are as close to design basis conditions as possible, Note 2 requires that, if synchronized to offsite power, 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.

SR 3.8.1.9

This Surveillance 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.

The DG autostart time of 10 seconds is derived from requirements of the accident analysis to respond to a design

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.9 (continued)

basis large break LOCA. The Surveillance should be continued for a minimum of 5 minutes in order to demonstrate that all starting transients have decayed and stability is achieved.

The requirement to verify the connection and power supply of permanent and auto connected 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, emergency Core Cooling Systems (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 residual heat removal (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 systems 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.

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 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 3.8.1.10

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

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.10 (continued)

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. In lieu of a time constraint in the SR, HBRSEP Unit No. 2 will monitor and trend the actual time to reach steady state operation as a means of assuring there is no voltage regulator or governor degradation which could cause a DG to become inoperable. The 5 minute period provides sufficient time to demonstrate stability. SR 3.8.1.10.d and SR 3.8.1.10.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 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 3.8.1.10 (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. 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 3.8.1.11

This Surveillance demonstrates that DG noncritical protective functions (e.g., high coolant 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. This SR is satisfied by simulating a trip signal to each of the non-critical trip devices and observing the DG does not receive a trip signal.

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.

(continued)

BASES

APPLICABILITY (continued)

d. Instrumentation and control capability is available for monitoring and maintaining the unit in a cold shutdown condition or refueling condition.

The AC power requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.1.

ACTIONS

A.1

An offsite circuit would be considered inoperable if it were not available to one required ESF train. Although two trains are required by LCO 3.8.10, the one train with offsite power available may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS and fuel movement. By the allowance of the option to declare required features inoperable, with the circuit inoperable, appropriate restrictions will be implemented in accordance with the affected required features LCO's ACTIONS.

With the offsite circuit not available to all required trains, the option would still exist to declare all required features inoperable. Since this option may involve undesired administrative efforts, the allowance for sufficiently conservative actions is made. With the required DG inoperable, the minimum required diversity of AC power sources is not available. It is, therefore, required to suspend CORE ALTERATIONS, movement of irradiated fuel assemblies, and operations involving positive reactivity additions. The Required Action to suspend positive reactivity additions does not preclude actions to maintain or increase reactor vessel inventory provided the required SDM is maintained.

Suspension of these activities does not preclude completion of actions to establish a safe conservative condition. These actions minimize the probability or the occurrence of postulated events. It is further required to immediately initiate action to restore the required AC sources and to continue this action until restoration is accomplished in order to provide the necessary AC power to the unit safety systems.

(continued)

BASES

ACTIONS

A.1 (continued)

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required AC electrical power sources should be completed as quickly as possible in order to minimize the time during which the unit safety systems may be without sufficient power.

Pursuant to LCO 3.0.6, the Distribution System's ACTIONS would not be entered even if all AC sources to it are inoperable, resulting in de-energization. Therefore, the Required Actions of Condition A are modified by a Note to indicate that when Condition A is entered with no AC power to any required ESF bus, the ACTIONS for LCO 3.8.10 must be immediately entered. This Note allows Condition A to provide requirements for the loss of the offsite circuit, whether or not a train is de-energized. LCO 3.8.10 would provide the appropriate restrictions for the situation involving a de-energized train.

SURVEILLANCE REQUIREMENTS

SR 3.8.2.1

SR 3.8.2.1 requires the SRs from LCO 3.8.1 that are necessary for ensuring the OPERABILITY of the AC sources in other than MODES 1, 2, 3, and 4. SR 3.8.1.5 is not required to be met since only one offsite circuit is required to be OPERABLE. SR 3.8.1.6 is excepted because starting independence is not required with the DG(s) that is not required to be operable.

This SR is modified by a Note. The reason for the Note is to minimize the frequency of requiring the OPERABLE DG(s) from being paralleled with the offsite power network or otherwise rendered inoperable during performance of SRs, and to minimize the frequency of deenergizing a required 480 V ESF bus or disconnecting a required offsite circuit during performance of SRs. With limited AC sources available, a single event could compromise both the required circuit and the DG. It is the intent that these SRs must still be capable of being met, but actual performance is not required during periods when the DG and offsite circuit is required to be OPERABLE. Refer to the corresponding Bases for LCO 3.8.1 for a discussion of each SR.

(continued)

BASES (continued)

REFERENCES None.

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 battery's capacity 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 average on the previous performance tests 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 (continued)

LCO

The DC electrical power subsystems, each subsystem consisting of one battery, a battery charger, and the corresponding control equipment and interconnecting cabling within the train, are required to be OPERABLE to support required trains of the distribution systems required OPERABLE by LCO 3.8.10, "Distribution Systems – Shutdown." This ensures the availability of sufficient DC electrical power sources to operate the unit in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents).

APPLICABILITY

The DC electrical power sources required to be OPERABLE in MODES 5 and 6, and 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.

The DC electrical power requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.4.

ACTIONS

A.1, A.2.1, A.2.2, A.2.3, and A.2.4

If two trains are required by LCO 3.8.10, the remaining train with DC power available may be capable of supporting sufficient systems to allow continuation of CORE ALTERATIONS and fuel movement. By allowing the option to declare required features inoperable with the associated DC power source(s) inoperable, appropriate restrictions will be implemented in accordance with the affected required

(continued)

BASES

ACTIONS

A.1, A.2.1, A.2.2, A.2.3, and A.2.4 (continued)

features LCO ACTIONS. In many instances, this option may involve undesired administrative efforts. Therefore, the allowance for sufficiently conservative actions is made (i.e., to suspend CORE ALTERATIONS, movement of irradiated fuel assemblies, and operations involving positive reactivity additions). The Required Action to suspend positive reactivity additions does not preclude actions to maintain or increase reactor vessel inventory, provided the required SDM is maintained.

Suspension of these activities shall not preclude completion of actions to establish a safe conservative condition. These actions minimize probability of the occurrence of postulated events. It is further required to immediately initiate action to restore the required DC electrical power subsystems and to continue this action until restoration is accomplished in order to provide the necessary DC electrical power to the unit safety systems.

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required DC electrical power subsystems should be completed as quickly as possible in order to minimize the time during which the unit safety systems may be without sufficient power.

SURVEILLANCE REQUIREMENTS

SR 3.8.5.1

SR 3.8.5.1 requires performance of all Surveillances required by SR 3.8.4.1 through SR 3.8.4.6. Therefore, see the corresponding Bases for LCO 3.8.4 for a discussion of each SR.

This SR is modified by a Note. The reason for the Note is to preclude requiring the OPERABLE DC sources from being discharged below their capability to provide the required power supply or otherwise rendered inoperable during the performance of SRs. It is the intent that these SRs must still be capable of being met, but actual performance is not required.

(continued)

BASES (continued)

REFERENCES

1. UFSAR, Chapter 6.
2. UFSAR, Chapter 15.

BASES

APPLICABILITY (continued)

AC Instrument Bus Sources requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.7.

ACTIONS

A.1, A.2.1, A.2.2, A.2.3, and A.2.4

With one or more required AC instrument bus sources inoperable when two trains are required by LCO 3.8.10, "Distribution Systems — Shutdown," the remaining OPERABLE AC Instrument Bus Sources may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS, fuel movement, and operations with a potential for positive reactivity additions. By the allowance of the option to declare required features inoperable with the associated AC Instrument Bus Source inoperable, appropriate restrictions will be implemented in accordance with the affected required features LCOs' Required Actions. In many instances, this option may involve undesired administrative efforts. Therefore, the allowance for sufficiently conservative actions is made (i.e., to suspend CORE ALTERATIONS, movement of irradiated fuel assemblies, and operations involving positive reactivity additions). The

Required Action to suspend positive reactivity additions does not preclude actions to maintain or increase reactor vessel inventory, provided the required SDM is maintained.

Suspension of these activities shall not preclude completion of actions to establish a safe conservative condition. These actions minimize the probability of the occurrence of postulated events. It is further required to immediately initiate action to restore the required AC Instrument Bus Sources and to continue this action until restoration is accomplished in order to provide the necessary AC Instrument Bus Source of power to the unit safety systems.

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required AC Instrument Bus Sources should be completed as quickly as possible in order to minimize the time the unit safety systems may be without power or powered from a non-preferred source.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.8.8.1

This Surveillance verifies that the inverters are functioning properly with all required circuit breakers closed and required AC instrument buses energized from the inverter and that required circuit breakers are closed and required instrument buses are energized from the CVTs or other sources, as allowed by LCO 3.8.8.b. The verification of proper voltage and frequency output for the inverters ensures that the required power is readily available for the instrumentation connected to the associated AC instrument buses. The 7 day Frequency takes into account the redundant capability of the AC Instrument Bus Sources, other indications available in the control room that alert the operator to inverter malfunctions, and administrative requirements governing alignment of electrical equipment.

This SR is modified by a Note which states that voltage and frequency measurement is not required for the AC instrument buses supplied from CVTs. For these buses, observing status lights, instrument displays, etc. is sufficient to confirm that the required power is readily available to the AC instrument buses supplied from CVTs

REFERENCES

1. UFSAR, Chapter 6.
2. UFSAR, Chapter 15.

BASES (continued)

LCO

Various combinations of subsystems, equipment, and components are required OPERABLE by other LCOs, depending on the specific plant condition. Implicit in those requirements is the required OPERABILITY of necessary support required features. This LCO explicitly requires energization of the portions of the electrical distribution system necessary to support OPERABILITY of required systems, equipment, and components – all specifically addressed in each LCO and implicitly required via the definition of OPERABILITY.

Maintaining these portions of the distribution system energized ensures the availability of sufficient power to operate the unit in a safe manner to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents).

APPLICABILITY

The AC and DC electrical power distribution subsystems required to be OPERABLE in MODES 5 and 6, and during movement of irradiated fuel assemblies, provide assurance that:

a. Systems to provide adequate coolant inventory makeup are available for the irradiated fuel 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 and refueling condition.

The AC, DC, and AC instrument bus electrical power distribution subsystems requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.9.

(continued)

BASES (continued)

ACTIONS

A.1, A.2.1, A.2.2, A.2.3, A.2.4, and A.2.5

Although redundant required features may require redundant trains of electrical power distribution subsystems to be OPERABLE, one OPERABLE distribution subsystem train may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS and fuel movement. By allowing the option to declare required features associated with an inoperable distribution subsystem inoperable, appropriate restrictions are implemented in accordance with the affected distribution subsystem LCO's Required Actions. In many instances, this option may involve undesired administrative efforts. Therefore, the allowance for sufficiently conservative actions is made (i.e., to suspend CORE ALTERATIONS, movement of irradiated fuel assemblies, and operations involving positive reactivity additions).

Suspension of these activities does not preclude completion of actions to establish a safe conservative condition. These actions minimize the probability of the occurrence of postulated events. It is further required to immediately initiate action to restore the required AC and DC electrical power distribution subsystems and to continue this action until restoration is accomplished in order to provide the necessary power to the unit safety systems.

Notwithstanding performance of the above conservative Required Actions, a required residual heat removal (RHR) subsystem may be inoperable. In this case, Required Actions A.2.1 through A.2.4 do not adequately address the concerns relating to coolant circulation and heat removal. Pursuant to LCO 3.0.6, the RHR ACTIONS would not be entered. Therefore, Required Action A.2.5 is provided to direct declaring RHR inoperable, which results in taking the appropriate RHR actions.

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required distribution subsystems should be completed as quickly as possible in order to minimize the time the unit safety systems may be without power.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.8.10.1

This Surveillance verifies that the AC, DC, and AC instrument bus electrical power distribution subsystems are functioning properly, with all the buses energized. The 7 day Frequency takes into account the capability of the electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions.

This SR is modified by Note which states that voltage measurement is not required for the AC Instrument buses supplied from Constant Voltage Transformers (CVTs). For these buses confirmation that the buses are energized by observing status lights, instrument displays, etc., is sufficient to confirm the buses are energized.

REFERENCES

1. UFSAR, Chapter 6.
2. UFSAR, Chapter 15.

SUPPLEMENT 7
CONVERSION PACKAGE SECTION 3.9
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 17 to Serial: RNP-RA/96-0141.

	Remove Page	Insert Page
a.	Part 1, "Markup of Current Technical Specifications (CTS)"	
	3.8-1(3.9.3),	3.8-1(3.9.3),
	4.12-2, 3.8-3(3.9.7)	4.12-2, 3.8-3(3.9.7)
b.	Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
	1, 7, 5	1, 7, 15, 15a
c.	Part 3, " No Significant Hazards Consideration (NSHC), And Basis for Categorical Exclusion from 10 CFR 51.22	
	12 and 12a	12 and 12a
d.	Part 4, "Markup of NUREG-4131, Revision 1, Standard Technical Specifications-Westinghouse Plants, (ISTS)"	
	NA	
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	NA	
f.	Part 6, "Markup of ISTS Bases"	
	NA	
g.	Part 7, "Justification for Differences (JFDs) to ISTS Bases"	
	NA	
h.	Part 8, "Proposed HBRSEP, Unit No. 2 ITS"	
	NA	
i.	Part 9. "Proposed Bases to HBRSEP, Unit No. 2 ITS Bases"	
	NA	
j.	Part 10. "ISTS Generic Changes"	
	NA	

ITS

A1

3.8 REFUELING

Applicability

Applies to operating limitations during refueling operations.

Objective

To minimize the possibility of an accident occurring during refueling operations that could affect public health and safety.

Specification

CORE ALTERATIONS, movement of irradiated fuel assemblies within containment — L10

[Applicability] 3.8.1 During refueling operations the following conditions shall be satisfied:

Closed with 4 bolts — L2

[LCO 3.9.3 a, b, c.1]

a. The equipment door and at least one door in the personnel air lock shall be properly closed. For those systems which provide a direct path from containment atmosphere to the outside atmosphere, all automatic containment isolation valves shall be operable or at least one valve shall be securely closed in each line penetrating the containment. — L9

manual or automatic; blind flange or equivalent

[SR 3.9.3.2] b. The containment vent and purge system, including the radiation monitors which initiate isolation shall be tested and verified to be operable immediately prior to refueling operations. — See 3.3.6

18 mo — L7

c. Radiation levels in the containment and spent fuel storage areas shall be monitored continuously. — R1

d. Whenever core geometry is being changed, core subcritical neutron flux shall be continuously monitored by at least two source range neutron monitors, each with continuous visual indication in the control room and one with audible — See 3.9.2

each valve actuates to isolation position on an actual or simulated actuation signal — A5, L8

Specification 3.9.7

each refueling outage operation or after every 720 hours of system operation, whichever occurs first, and following significant painting, fire, or chemical release in any ventilation zone communicating with the filter system.

c. Cold DOP testing shall be performed after each complete or partial replacement of a HEPA filter bank or after any structural maintenance of the filter system housing.

d. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of a charcoal adsorber bank or after any structural maintenance on the filter system housing.

e. A uniform air distribution within ± 20% across HEPA filters and charcoal adsorbers must be demonstrated initially and after each major repair or modification to the systems which would affect the air distribution.

See 5.5

[SR 3.9.7.1 Frequency]

4.12.3 The relative humidity of the air processed by the refueling filter system shall be monitored hourly during fuel handling operations.

Basis

Pressure drop across the combined HEPA filters and charcoal adsorbers of less than 6 inches of water at the system design flow rate will indicate that the filters and adsorbers are not clogged by excessive amounts of foreign matter. Pressure drop and fan capacity should be determined a least once per operating cycle to show system performance capability.

The frequency of tests and sample analysis are necessary to show that the HEPA filters and charcoal adsorbers can perform as evaluated under postulated accident conditions. The charcoal adsorber efficiency test procedures should allow for the removal of one adsorber tray, emptying of one bed from the tray, mixing the adsorbent thoroughly and obtaining at least two samples. Each sample should be at least two inches in diameter and a length equal to the thickness of the bed. If test results are unacceptable, all adsorbent in the system shall be replaced

ITS

Suspend CORE ALTERATIONS
Suspend movement of irradiated fuel in containment

A1

[Required Action A.2.1 & A.2.2]

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.

L4

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.

[LCO 3.9.7]

[APPLICABILITY]

[Required Action A.1]

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.

L9

[SR 3.9.7.1] 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

Add SR 3.9.7.2
SR 3.9.7.3

M18

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 3.8.1.k requires that the reactor be subcritical as required by CTS 3.10.8.3; and CTS 3.10.8.3 requires the shutdown margin to be at least 6 percent $\Delta k/k$ during refueling (relocation of CTS 3.10.8.3 is addressed in Discussion of Change LA3). CTS 3.8.1.f also requires a minimum boron concentration to be maintained during refueling operations. The requirement in CTS 3.8.1.f is included in ITS 3.9.1 with the actual value of minimum boron concentration relocated to the COLR. However, the Bases of ITS 3.9.1 states the minimum boron concentration requirement in the COLR ensures that core K_{eff} is maintained ≤ 0.94 (which is equivalent to 6 percent $\Delta k/k$). As a result, it is unnecessary to state that the reactor must be subcritical as required by CTS 3.10.8.3 since meeting the requirements of ITS 3.9.1 ensures that the reactor is subcritical with a shutdown margin equivalent to at least 6 percent $\Delta k/k$. Therefore, CTS 3.8.1.k is not retained in the ITS and the change is considered to be administrative with 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 Not Used.

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. The addition of the allowance for actuation on an actual or simulated

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.

M18 The CTS is revised to adopt ITS SR 3.9.7.2, and SR 3.9.7.3 to require that the Containment Purge Filter System be verified OPERABLE and in operation.

SR 3.9.7.2 requires verification that the Containment Purge Filter System is in operation and maintaining containment pressure negative relative to the adjacent auxiliary building areas once every 12 hours. This verification ensures that containment pressure is being maintained negative with respect to the outside atmosphere since the pressure of the auxiliary building areas is normally maintained negative with respect to the outside atmosphere. This change is necessary to ensure plant operation is consistent with the assumptions related to the capability of the Containment Purge Filter System to maintain a slight negative pressure in the containment. The Frequency of 12 hours is

barrier during CORE ALTERATIONS or irradiated fuel movements in containment. In addition, isolation devices capable of being automatically closed by an OPERABLE Containment Ventilation Isolation System, when the containment purge fan is operable, also satisfy this criterion. Since the proposed isolation methods will continue to acceptably isolate the affected penetrations during the applicable conditions, the change does not adversely affect safe refueling operations.

L10 The Applicability for CTS 3.8.1 is during refueling operations. The Applicability for ITS 3.9.3 is MODE 6 and during movement of irradiated fuel assemblies within containment. The CTS definition for refueling operations is, "Any operation involving movement of core components when there is fuel in the containment vessel and the pressure vessel head is unbolted or removed." A comparison of the CTS applicability to the ITS Applicability identified a slight reduction in Applicability. The ITS Applicability allows the containment penetrations to be inoperable during core alterations in the reactor vessel that do not involve fuel assemblies when the reactor vessel head is not fully tensioned and there is fuel in the containment but not in the reactor vessel. This is acceptable since core alterations without fuel in the reactor vessel cannot result in criticality or a significant release of fission products. This change is a less restrictive change upon unit operation and is consistant with the NUREG.

<u>RELOCATED SPECIFICATIONS</u>

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.

capable of restricting a fission product radioactivity release within containment from escaping to the environment. In addition, the change establishes allowances to use isolation barriers which are equivalent to those already included in the current Technical Specifications. As a result, any reduction in a margin of safety will be insignificant and offset by the benefit gained through the use equivalent isolation devices that can provide atmospheric pressure and ventilation barriers to ensure fission product radioactivity within containment will be restricted from escaping to the environment during CORE ALTERATIONS or irradiated fuel movements in containment. Therefore, the change does not involve a significant reduction in a margin of safety.

LESS RESTRICTIVE-SPECIFIC CHANGES
("L10" 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 result in any hardware or operating procedure changes. The core alterations without fuel in the reactor vessel is not assumed to be initiators of any analyzed event. The proposed change does not allow continuous refueling operations when a fission product radioactivity release in containment could escape through an unisolated or unisolable path. Therefore, this change will 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 change does not introduce a new mode of plant operation and does not involve physical modification to the plant. The change still ensures the containment boundary is maintained when core alterations take place with fuel in the reactor vessel. Therefore, it does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   CORE ALTERATIONS taking place without fuel in the reactor vessel cannot cause a reactor criticality or result in significant release of radioactive material. Therefore, the change does not involve a significant reduction in a margin of safety.

RELOCATED CHANGES
("R" Labeled Comments/Discussions)

Relocating Requirements which do not meet the Technical Specification criteria to documents with an established control program allows the Technical Specifications to be reserved only for those conditions or limitations upon reactor operation which are necessary to adequately limit the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety, thereby focusing the scope of Technical Specifications.

Therefore, requirements which do not meet the Technical Specification criteria in the NRC Final Policy Statement on Technical Specification Improvement for Nuclear Power Reactors (58FR 39132, dated 7/22/93) have been relocated to licensee controlled documents. This policy statement addresses the scope and purpose of Technical Specifications. In doing so, it establishes a specific set of objective criteria for determining which regulatory requirements and operating restrictions should be included in Technical Specifications. These criteria are as follows:

Criterion 1: Installed instrumentation that is used to detect and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary;

Criterion 2: A process variable that is an initial condition of a design basis accident (DBA) or transient analyses that either assumes the failure of or presents a challenge to the integrity of a fission product barrier;

Criterion 3: A structure, system or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission barrier;

Criterion 4: A structure, system or component which operating experience or probabilistic safety assessment has shown to be significant to public health and safety.

SUPPLEMENT 7
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)"	
	3.16-2(5.5)	3.16-2(5.5)
	4.12-2(5.5),	4.12-2(5.5),
	6.13-1(5.7)	6.13-1(5.7)
b.	Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
	6	6
c.	Part 3, "No Significant Hazards Consideration (NSHC), And Basis for Categorical Exclusion form 10 CFR 51.22"	
	NA	
d.	Part 4, "Markup of NUREG-1431, Revision 1, Standard Technical Specifications Westinghouse plants, (ISTS)"	
	5.0-15, -(5.5)	5.0-15, 5.0-24b (5.5)
e.	Part 5, "Justification of differences (JFDs) to ISTS"	
	2	2 and 2a
f.	Part 6, "Markup of ISTS Bases"	
	NA	
g.	Part 7, "Justification for Differences (JFDs) to ISTS Bases"	
	NA	
h.	Part 8, "Proposed HBRSEP, Unit No. 2 ITS"	
	5.0-21(5.5)	5.0-21 (5.5)
	5.0-34(5.7)	5.0-34 (5.7)
i.	Part 9, "Proposed Bases to HBRSEP, Unit No. 2 ITS"	
	NA	
j.	Part 10, "ISTS Generic Changes"	
	NA	

ITS

Specification 5.5

A1

Objective

To define the operating requirements for the liquid holdup tanks.

Specification

[5.5.12]

3.16.2.1 The quantity of radioactive material contained in each of the following tanks shall at all times be limited to ≤10 curies, excluding tritium and dissolved or entrained noble gases.

a. A monitor tank
b. B monitor tank
c. C Waste Condensate tank
d. D Waste Condensate tank
e. E Waste Condensate tank
f. Any Outside temporary tank*

LA10

3.16.2.2 With the quantity of radioactive material in any of the above listed tanks exceeding the above limit, immediately suspend all additions of radioactive material to the tank, within 48 hours reduce the tank contents to within the limit, and the event should be described in the Semiannual Radioactive Effluent Release Report, Specification 6.9.1.d.

3.16.2.3 If Specification 3.16.2.2 is not completed within 48 hours a notification must be made to the Commission in accordance with Specification 6.6.

3.16.3 Gaseous Radwaste and Ventilation Exhaust Treatment Systems

Applicability

Applies to the gaseous radwaste and ventilation exhaust treatment systems.

Add 5.5.12

A33

* A temporary tank is defined as any tank having a capacity of ≥ 100 gallons used for the receipt or transfer of radioactive liquids.

LA10

Specification 5.5

each refueling outage operation or after every 720 hours of system operation, whichever occurs first, and following significant painting, fire, or chemical release in any ventilation zone communicating with the filter system.

c. Cold DOP testing shall be performed after each complete or partial replacement of a HEPA filter bank or after any structural maintenance of the filter system housing.

d. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of a charcoal adsorber bank or after any structural maintenance on the filter system housing.

e. A uniform air distribution within ± 20% across HEPA filters and charcoal adsorbers must be demonstrated initially and after each major repair or modification to the systems which would affect the air distribution.

LA9

4.12.3 The relative humidity of the air processed by the refueling filter system shall be monitored hourly during fuel handling operations.

see 3.7.11 3.9.7

Basis

Pressure drop across the combined HEPA filters and charcoal adsorbers of less than 6 inches of water at the system design flow rate will indicate that the filters and adsorbers are not clogged by excessive amounts of foreign matter. Pressure drop and fan capacity should be determined a least once per operating cycle to show system performance capability.

The frequency of tests and sample analysis are necessary to show that the HEPA filters and charcoal adsorbers can perform as evaluated under postulated accident conditions. The charcoal adsorber efficiency test procedures should allow for the removal of one adsorber tray, emptying of one bed from the tray, mixing the adsorbent thoroughly and obtaining at least two samples. Each sample should be at least two inches in diameter and a length equal to the thickness of the bed. If test results are unacceptable, all adsorbent in the system shall be replaced

A17

ITS

(A1)

[5.7] 6.13 HIGH RADIATION AREA

[5.7.1] 6.13.1 In lieu of the "control device" or "alarm signal" required by paragraph 20.1601(a) of 10 CFR 20, each High Radiation Area in which the intensity of radiation is 1000 mRem/hr or less shall be barricaded and consipcuously posted by requiring issuance of a Radiation Work Permit (RWP).* Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

a. A radiation monitoring device which continuously indicates the radiation dose rate in the area.

b. A radiation monitoring device provided for each individual which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel have been made knowledgeable of them. (LA21)

c. An indvidual qualified ~~in~~ as a radiation ~~protection procedures~~ control technician who is equipped with a radiation dose monitoring device. This individual shall be responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the Radiation Control Supervisor in the Radiation Work Permit.

[5.7.2] 6.13.2 The requirements of ~~6.13.1~~ 5.7.1 above shall apply to each high radiation area in which the intensity of radiation is greater than 1000 mRem/hr at 30 centimeters (12 inches) from the radiation source or from any surface penetrated by the radiation, but less than 500 rads/hour at 1 meter from the radiation source or from any surface penetrated by the radiation. In addition, locked doors shall be provided to prevent unauthorized entry into such areas and the keys shall be maintained under the administrative control of the ~~Operations Shift Supervisor~~ Shift Superintendent on duty and/or the Radiation Control Supervisor. Entrance there to shall also be controlled by requiring issuance of a Radiation Work Permit. The footnote for Section ~~6.13.1~~ 5.7.1 is not applicable to each high radiation area in which the intensity of radiation is greater than 1000 mRem/hr.

(LA21) (A37)

* ~~Health Physics~~ Radiation control personnel or personnel escorted by ~~Health Physics~~ Radiation control personnel shall be exempt from RWP issuance rquirement during the performance of their assigned duties within the RCA, provided they comply with approved radiation protection procedures for entry into high radiation areas.

A28 Not Used.

A29 CTS Specifications 6.6.1.a and 6.6.2.a, which contain requirements regarding notification and submittal of reports to the NRC pursuant to the requirements of 10 CFR 50.72 and 10 CFR 50.73, are not retained in the ITS. These reporting requirements are specified within the cited regulations and need not be repeated in the ITS. This change is administrative, and has no adverse impact on safety.

A30 CTS Specification 6.2.3.a is revised in ITS Specification 5.2.2 to incorporate the current plant practice regarding the function of the shift technical advisor. Since no technical requirements are modified, this change is administrative, and has no adverse impact on safety.

A31 CTS Specification 6.9.1.2.1, which specifies occupational radiation exposure reporting requirements, is modified in ITS Specification 5.6.1, where examples of work and job functions identified as, "routine maintenance, special maintenance [describe maintenance]," are condensed to simply read, "maintenance," to be consistent with other examples given. This change is administrative, and has no adverse impact on safety.

A32 CTS Specifications 4.2.3 (Primary Pump Flywheels) and 6.12 (Containment Leakage Rate Testing Program), are revised in ITS Specifications 5.5.7 and 5.5.16, respectively to modify the presentation of text to be consistent with the presentation of purpose statements of other programs in this Chapter. In addition, for the reactor coolant pump flywheel inspection requirements, a general program statement has been added consistent with current plant practice which includes reactor coolant pump flywheel inspection requirements in the Inservice Inspection Program. Since no technical requirements are modified, this change is administrative and has no adverse impact on safety.

A33 The CTS is revised to adopt ISTS Specification 5.5.12, "Explosive Gas and Storage Tank Radioactivity Monitoring Program," in the ITS. This program captures the existing requirements for explosive gas and storage tank radioactivity contained in CTS Specifications 3.16.2, 3.16.4, 3.16.5,4.20.2, 4.20.4, and 4.20.5. Consequently, the adoption of this program is an administrative change, and is consistent with NUREG-1431.

A34 CTS 4.4.4.3.c requires submitting a report and evaluation of a Containment Tendon Test within 6 months of completing the test. CTS

5.5 Programs and Manuals

[A33] 5.5.12 Explosive Gas and Storage Tank Radioactivity Monitoring Program (Continued)

appropriate to the system's design criteria (i.e.. whether or not the system is designed to withstand a hydrogen explosion);

b. A surveillance program to ensure that the quantity of radioactivity contained in [each gas storage tank and fed into the offgas treatment system] is less than the amount that would result in a whole body exposure of ≥ 0.5 rem to any individual in an unrestricted area. in the event of an uncontrolled release of the tanks' contents; and

each Waste Gas Decay Tank

10

15

c. A surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners. dikes. or walls. capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the Liquid Radwaste Treatment System is less than the amount that would result in concentrations less than the limits of 10 CFR 20. Appendix B. Table 2. Column 2. at the nearest potable water supply and the nearest surface water supply in an unrestricted area. in the event of an uncontrolled release of the tanks' contents.

each 10

Waste Disposal

or equal to ten (10) Curies, excluding tritium and dissolved or entrained noble gases.

10

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program surveillance frequencies.

[M15] 5.5.13 Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

ing 9

29

a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:

15

1. an API gravity or an absolute specific gravity within limits.

Not become contaminated with other products during transit, thus altering the quality of the fuel oil.

(continued)

Supplement 7

The testing methods shall be in accordance with applicable ASTM Standards. The acceptance criteria shall be in accordance with the diesel engine manufacturer's specifications.

15

ITS Insert 5.7.2-1 (High Radiation Area)

5.7.2 The requirements of 5.7.1 shall apply to each High Radiation Area in which the intensity of radiation is greater than 1000 mRem/hour at 30 centimeters (12 inches) from the radiation source or from any surface penetrated by the radiation, but less than 500 rads/hour at 1 meter from the radiation source or from any surface penetrated by the radiation. In addition, locked doors shall be provided to prevent unauthorized entry into such areas and the keys shall be maintained under the administrative control of the SS on duty and/or the radiation control supervisor. Entrance thereto shall also be controlled by requiring issuance of an RWP. The exemption from RWP issuance requirements discussed in 5.7.1 is not applicable for any High Radiation Area in which the intensity of radiation is greater than 1000 mRem/hour.

9 The text presentation in ISTS Specifications 5.5.3, "Post Accident Sampling," 5.5.7, "Reactor Coolant Pump Flywheel Inspection Program," 5.5.11, "Ventilation Filter Testing Program," 5.5.13, "Diesel Fuel Oil Testing Program," 5.5.14, "Technical Specifications (TS) Bases Control Program, and 5.5.15, "Safety Function Determination Program (SFDP)," is modified in the ITS to be consistent with the presentation of purpose statements of other programs in this Chapter.

10 ISTS Specifications 5.5.4, "Radioactive Effluent Controls Program," and 5.6.1, "Occupational Radiation Exposure Report," are revised in the ITS to be consistent with the new 10 CFR 20 requirements. ISTS Specification 5.5.12, "Explosive Gas and Storage Tank Radioactivity Monitoring Program," is revised in ITS to maintain the current licensing basis which was found to be acceptable in the NRC Safety Evaluation for Amendment 85 to Technical Specifications dated November 14, 1984.

11 ISTS Specification 5.5.4.f requires limitations on the functional capability and use of the liquid and gaseous effluent treatment systems to ensure that appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a period of 31 days would exceed 2% of the guidelines for the annual dose or dose commitment, conforming to 10 CFR 50, Appendix I. However, CTS Specifications 3.16.1 and 3.16.3 require that the Liquid Radwaste Treatment System and Gaseous Radwaste Treatment System, respectively, be maintained and used whenever the projected dose commitments exceed specified quarterly limits. Therefore, to maintain the current licensing basis, ISTS Specification 5.5.4.f is modified in the ITS to replace the reference to 2% of the guidelines or dose commitment over 31 days with a reference to ". . . projected dose commitments due to the release of effluents to unrestricted areas exceeding specified limits conforming to 10 CFR 50 Appendix I." These limits are those specified in CTS 3.16.1 and 3.16.3. These specifications are relocated to the ODCM. (DOC R1 in the "Relocated Specification" section of the conversion package provides additional information regarding the relocation of these specifications.) These limits are in conformance with the design dose objectives specified in Appendix I of 10 CFR 50 for liquid and gaseous effluents and were reviewed and approved by NRC by issuance of Amendment No. 85 dated 11/14/84.

12 ISTS Specification 5.5.7, "Reactor Coolant Pump Flywheel Inspection Program," is modified in the ITS to be consistent with current licensing basis, which includes visual and ultrasonic inspections conducted in accordance with the Inservice Inspection Program. This reflects the CLB for HBRSEP Unit No. 2. HBRSEP Unit No. 2 is not committed to Regulatory Guide 1.14.

13 ISTS Specification 5.5.8, "Inservice Testing (IST) Program," is modified in the ITS to state that the IST Program provides control for ASME Code Class 1, 2, and 3 "pumps and valves," in place of "components including

applicable supports." 10 CFR 50.55a(f) provides the regulatory requirements for an IST Program, and specifies that ASME Code Class 1, 2, and 3 pumps and valves are the only components covered by an IST

5.5 Programs and Manuals

5.5.12 Explosive Gas and Storage Tank Radioactivity Monitoring Program (continued)

to the system's design criteria (i.e., whether or not the system is designed to withstand a hydrogen explosion);

b. A surveillance program to ensure that the quantity of radioactivity contained in each Waste Gas Decay Tank is less than the amount that would result in a whole body exposure of ≥ 0.5 rem to any individual in an unrestricted area, in the event of an uncontrolled release of the tanks' contents; and

c. A surveillance program to ensure that the quantity of radioactivity contained in each outdoor liquid radwaste tank that is not surrounded by liners, dikes, or walls, capable of holding the tank's contents and that does not have tank overflows and surrounding area drains connected to the Liquid Waste Disposal System is less than or equal to ten (10) Curies, excluding tritium and dissolved or entrained noble gases.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program surveillance frequencies.

5.5.13 Diesel Fuel Oil Testing Program

A diesel fuel oil testing program shall be established requiring testing of both new fuel oil and stored fuel oil. The program shall include sampling and testing requirements, and acceptance criteria. The testing methods shall be in accordance with applicable ASTM Standards. The acceptance criteria shall be in accordance with the diesel engine manufacturer specifications. The purpose of the program is to establish the following:

a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has not become contaminated with other products during transit, thus altering the quality of the fuel oil.

(continued)

5.7 High Radiation Area (continued)

5.7.2 The requirements of 5.7.1 shall apply to each High Radiation Area in which the intensity of radiation is greater than 1000 mRem/hour at 30 centimeters (12 inches) from the radiation source or from any surface penetrated by the radiation, but less than 500 rads/hour at 1 meter from the radiation source or from any surface penetrated by the radiation. In addition, locked doors shall be provided to prevent unauthorized entry into such areas and the keys shall be maintained under the administrative control of the SS on duty and/or the radiation control supervisor. Entrance thereto shall also be controlled by requiring issuance of an RWP. The exemption from RWP issuance requirements discussed in 5.7.1 is not applicable for any High Radiation Area in which the intensity of radiation is greater than 1000 mRem/hour.

SUPPLEMENT 7
CONVERSION PACKAGE COMPILATION OF CTS PAGES
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 21 to Serial: RNP-RA/96-0141.

Remove Page	Insert Page
1-4 (3.6.1)	1-4 (3.6.1)
2.3-3 (3.3.1)	2.3-3 (3.3.1)
3.1-13 (3.4.16)	3.1-13 (3.4.16)
3.2-2 (3.4.17)	3.2-2 (3.4.17)
3.4-5 (3.3.8)	3.4-5 (3.3.8)
3.5-12 (3.3.1)	3.5-12 (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 (3.3.6)	3.5-14 (3.3.6)
3.5-15a (3.3.2)	3.5-15a (3.3.2)
3.5-16 (3.3.6)	3.5-16 (3.3.6)
3.8-1 (3.9.3)	3.8-1 (3.9.3)
3.8-2 (3.7.11)	3.8-2 (3.7.11)
3.8-3 (3.9.7)	3.8-3 (3.9.7)
3.10-1 (3.1.6)	3.10-1 (3.1.6)
3.15-1 (3.7.9)	3.15-1 (3.7.9)
3.15-1 (3.7.10)	3.15-1 (3.7.10)
3.16-2 (5.5)	3.16-2 (5.5)
4.1-6 (3.3.1)	4.1-6 (3.3.1)
4.1-6 (3.3.2)	4.1-6 (3.3.2)
4.1-7 (3.3.1)	4.1-7 (3.3.1)
4.1-7 (3.3.2)	4.1-7 (3.3.2)
4.4-1 (3.6.1)	4.4-1 (3.6.1)
4.4-7 (3.6.1)	4.4-7 (3.6.1)
4.5-2 (3.5.2)	4.5-2 (3.5.2)
4.8-1 (3.7.4)	4.8-1 (3.7.4)
-	4.12-2 (3.7.11)
-	4.12-2 (3.9.7)
4.12-2 (5.5)	4.12-2 (5.5)
6.13-1 (5.7)	6.13-1 (5.7)

Specification 3.6.1

ITS

a. All non-automatic containment isolation valves not required for normal operation are closed and blind flanges are properly installed where required. — see 3.6.3

b. The equipment door is properly closed and sealed. ← LA 6

c. At least one door in the personnel air lock is properly closed and sealed. — see 3.6.2

[SR 3.6.1.3] d. All automatic containment isolation trip valves required to be closed during accident conditions are operable or are secured closed except as stated in Specification 3.6.3. Manual valves qualifying as automatic containment isolation valves are secured closed. ← see 3.6.3

[SR 3.6.1.1] e. The uncontrolled containment leakage satisfies Specification 4.4. — A22

1.8 QUADRANT POWER TILT

The quadrant power tilt is defined as the ratio of maximum to average of the upper excore detector currents or the lower excore detector currents, whichever is greater. If one excore is out of service, the three in-service units are used in computing the average.

1.9 DELETED

1.10 STAGGERED TEST BASIS

A Staggered Test Basis shall consist of:

a. A test schedule for n systems, subsystems, trains or designated components obtained by dividing the specified test interval into n equal subintervals.

— See 3.6.1

[T 3.3.1-1 (5)] [NOTE 1]

(3) For each percent that the magnitude of $(q_t - q_b)$ exceeds -17% in the negative direction, the ΔT trip setpoint shall be automatically reduced by 2.4% of the value of ΔT at rated power (2300 Mwt). A1

$2.4(q_b - q_T) - 17$ percent — A2

[T 3.3.1-1 (6)] [NOTE 2]

e. Overpower Δ T

$$\leq \Delta T_o \left\{ K_4 - K_5 \left[\frac{\tau_3 S}{1 + \tau_3 S}\right] T - K_6 (T - T') - f(\Delta I) \right\}$$

The OPΔT Function Allowable Value shall not exceed the following Trip Setpoint by more than 3.17% of ΔT span. — L1

where:

ΔT_o = Indicated ΔT at rated thermal power, °F;

T = Average temperature, °F;

T′ = 575.4°F Reference T_{avg} rated thermal power; (≤)

K_4 = 1.07; ≤ 1.06 — M1

K_5 = 0.0 for decreasing average temperature, 0.02 sec/°F for increasing average temperature; (≥) — L2

K_6 = 0.00277 for T > T′ and 0 for T ≤ T′;

S = Laplace transform operator, sec^{-1};

$\frac{\tau_3 S}{1 + \tau_3 S}$ = The function generated by the rate-lag controller for T_{avg} dynamic compensation; — LA1

τ_3 = Time constant utilized in the rate-lag controller for T_{avg}, τ_3 = 10 seconds; ≥ 9 — L2

f(ΔI) = As defined in d. above

[T3.3.1-1 (9)] f. Low reactor coolant loop flow ≥ 90% of normal indicated flow. 90.26 — M1

a. Single loop
b. Two loops — A3

[T3.3.1-1 (12)] g. Low reactor coolant pump frequency ≥ 57.5 Hz. 58.2

[T 3.3.1-1 (11)] h. Undervoltage ≥ 70% of normal voltage. 3120

2.3.1.3 Other Reactor Trips

[T3.3.1-1 (8)] a. High pressurizer water level ≤ 92% of span. 91 — M1

[T3.3.1-1 (13)] b. Low-low steam generator water level ≥ 14% of narrow range instrument span. 16

ITS (A1)

3.1.4 Maximum Reactor Coolant Activity

[LCO 3.4.16] The total specific activity in μCi/gram of the reactor coolant shall not exceed 1.0 μCi/gram dose equivalent I-131 and 100/$\bar{E}$ μCi/gram under ~~all modes~~ of operation. (Ē is the average of beta and gamma energy (MEV) per disintegration of the specific activity.) (See 1.1)

[RA A.2] [Action C] With the specific activity of the primary coolant > 1.0 μCi/gram dose equivalent I-131 for more than 48 hours during one continuous time interval or exceeding the limit line shown on Figure 3.1.4-1. be in at least hot shutdown with T_{avg} < 500°F within 6 hours.

MODES 1, 2, 3 (≥500°F) (L14)

[Action B] With the specific activity of the primary coolant > 100/$\bar{E}$ μCi/gram. be in at least hot shutdown with T_{avg} < 500°F within 6 hours.

[RA A.1] In ~~any operating mode~~ with the specific activity of the primary coolant > 1.0 μCi/gram dose equivalent I-131 ~~or > 100/Ē μCi/gram~~, perform the sampling and analysis requirements of Item 1 of Table 4.1-2 ~~until the specific activity of the primary coolant is restored to within its limits~~.

(L14)

With Required Action and Completion Time of Condition A or B not met

A35

e. Two channels of heat tracing shall be operable for the flow path from the boric acid tanks. LA12

f. The primary water storage tank contains not less than 30,000 gallons of water.

A33

3.2.3 During power operation, the requirements of 3.2.2 may be modified to allow any one of the following components to be inoperable. If the system is not restored to meet the requirements of 3.2.2 within the time period specified, the reactor shall be placed in the hot shutdown condition utilizing normal operating procedures. If the requirements of 3.2.2 are not satisfied within an additional 48 hours, the reactor shall be placed in the cold shutdown condition utilizing normal operating procedures. M41

[RA C.1] MODE 3 within 6 hours

A37

[RA A.1] a. One of the two operable (required) charging pumps may be removed from service provided a charging pump is restored to operable status within 24 hours. A34

b. One boric acid transfer pump may be out of service provided the pump is restored to operable status within 24 hours.

c. One channel of heat tracing may be out of service for 24 hours. L23

3.2.4 Extended Maintenance

As soon as there is reason to expect that maintenance to restore components or systems to an operable condition will last longer than periods specified, the circumstances of the extended maintenance and the estimated date for returning the components or systems to an operable condition shall promptly be reported to the Director - Office

M46

Add RA B.1 — L23

Add RA E.1
RA E.2
RA E.3
RA F.1
RA F.2 — M44

L20

Add RA D.1
RA D.2
RA D.3

ITS

TABLE 3.4-1

AUXILIARY FEEDWATER FLOW AUTOMATIC INITATION*

	NO.	FUNCTIONAL UNIT	1 MINIMUM CHANNELS OPERABLE	2 MINIMUM DEGREE OF REDUNDANCY	3 OPERATOR ACTION IF CONDITIONS OF COLUMN 1 OR 2 CANNOT BE MET
[T3.3.8-1(1)] [ACTION C]	1.	Steam Gen. Water Level-low-low a. Start Motor-Driven Pumps b. Start Turbine-Driven Pump	 2/Steam Generator 2/Steam Generator	 1/Steam Generator 1/Steam Generator	 Maintain Hot Shutdown Maintain Hot Shutdown
[T3.3.8-1(4)]	2.	Undervoltage-4KV Busses 1 & 4 Start Turbine-Driven Pump (15 Second Time Delay Pickup)	2 Per Bus	0	Note 1
[T3.3.8-1(2)]	3.	S.I. Start Motor-Driven Pumps	See Table 3.5-3, Item No.1		
[T3.3.8-1(3)]	4.	Station Blackout Start Motor-Driven Pumps (40 Second Time Delay Prior to Starting MD AFW Pumps on Blackout Sequence)	2 Per Bus	0	Note 2
[T3.3.8-1(5)]	5.	Trip of Main Feedwater Pumps Start Motor-Driven Pumps	1/Pump	0	Note 2

place channel in trip - 6 hrs, or MODE 3 - 12 hrs, and MODE 4 - 18 hrs

M51 3 L32 A27

[MODES 1,2,3] [MODES 1,2]

* This table is applicable whenever the RCS is > 350°F except Item 5. Item 5 is applicable only when the RCS is at normal operating temperature and the reactor is critical.

Note 1: 4KV Busses 1, 2, and 4 each have two undervoltage relays. One relay on each of the three busses provides an input to the reactor trip logic. Both relays on Busses 1 and 4 provide inputs to the SD AFW pump start logic. If the undervoltage relay on Busses 1 or 4 that provides the input to the reactor trip logic fails, follow the requirements of Table 3.5-2 Item 14 in addition to the following. If either 4KV undervoltage relay on Busses 1 or 4 fails, within 4 hours insert the equivalent of an undervoltage signal from the affected relay in the SD AFW pump start circuit and repair the affected relay within 7 days. If the affected relay is not repaired in the 7 days, then commence a normal plant shutdown to hot standby. MODE 3 in 10 hours, MODE 4 in 16 hours.

A21 or M48 M48 M44

[ACTION B] [ACTION E] [ACTION D]

Note 2: Restore the inoperable channel to operable status within 48 hours. If the inoperable chanel is not restored to an operable status within 48 hours, then commence a normal plant shutdown and cooldown to ≤ 350°F. MODE 3 in 54 hrs. MODE 4 in 60 hrs.

Supplement 7

Specification 3.3.8

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 2 (C)	MODES 1,2 Reactor Critical 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** (A30) (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) (L) ACTION 5 ACTION 5 (K)	(A31) (d) (e) MODE 2 Reactor Critical*** 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 (Add ACTION J) (M49)	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)	MODES 1,2 Reactor Critical
[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	(N) (M) ACTION 6 ACTION 6	(M50) MODE 1 (g) ≥45% of rated power **** MODE 1 (h)

Amendment No. ~~85~~, 175

Supplement 7

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

A21

A1

ITS

TABLE 3.5-2 (Continued)

REACTOR TRIP INSTRUMENTATION LIMITING OPERATING CONDITIONS

TABLE NOTATIONS

(a) * With the reactor trip breakers closed and either rods not fully inserted or Rod Control System capable of rod withdrawal. L35

(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 Note (c) A30

Add Note (e) A31

ACTION STATEMENTS

[ACTION B] ACTION 1 With the number of OPERABLE channels (48) one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 12 hours, or be in the Hot Shutdown Mode 3 Condition 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: L7

Add RA D.2.2 "NOTE"

[ACTION E] a. The inoperable channel is placed in the tripped condition within 1 hour. 6 L8

[ACTION D] 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. be in MODE 3 in 12 hours M6

[ACTION E]

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

With the number of channels OPERABLE one or two less than the Minimum Channels OPERABLE L38

Amendment No. 175

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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 M] [ACTION N] [ACTION P] 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) (L.4) (M4) (L3) (L.4)

[ACTION N] <P8 in 10 hrs [ACTION P] <P7 in 10 hrs [ACTION M] ~~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, 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 (A40) (L.4) (L.10)

[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 3.3.6

TABLE 3.5-3

ENGINEERED SAFETY FEATURES INSTRUMENTATION LIMITING OPERATING CONDITIONS

ITS T3.3.6-1 Item 4

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				
A.	Manual	2	2	ACTION 11	>200°F
B.	High Containment Pressure (Hi Level)	3	2	ACTION 12	>200°F
C.	High Differential Pressure between Any Steam Line and the Steam Header	3/Steam Line	2/Steam Line	ACTION 12	#
D.	Pressurizer Low Pressure	3	2	ACTION 12	#
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	≥350°F ##
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	≥350°F ##
2.	CONTAINMENT SPRAY				
A.	Manual	2	2	ACTION 13	>200°F
B.	High Containment Pressure (Hi Hi Level)	3/Set	2/Set	ACTION 12	>200°F

See 3.3.2

Amendment No. ~~85~~, 175
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A1

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(b)] ## 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 D, ACTION E] 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 (or restore OPERABLE in 6 hours) 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 42 hours

Add ACTIONS "Note" A5

Supplement 7

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 3.3.2
	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)
[T 3.3.6-1 (3a)]		i.	High Containment Activity, Gaseous	1	0	ACTION 15 (A)	During Containment Purge
[T 3.3.6-1 (3b)]		ii.	High Containment Activity, Particulate	1	0	ACTION 15	During Containment Purge (A27)
[T 3.3.6-1 (4)]		iii.	Phase A	See Item No. 1.A of Table 3.5-4 for all Phase A initiating functions and requirements			

Add 3.3.6 Action A (L46)

Add Table 3.3.6-1 Function 2 (M41)

ITS

A1

3.8 REFUELING

Applicability

Applies to operating limitations during refueling operations.

Objective

To minimize the possibility of an accident occurring during refueling operations that could affect public health and safety.

Specification

[Applicability] 3.8.1 During refueling operations [CORE ALTERATIONS, movement of irradiated fuel assemblies within containment] (L10) the following conditions shall be satisfied:

[LCO 3.9.3 a, b, c.1]

a. The equipment door [closed with 4 bolts] (L2) and at least one door in the personnel air lock shall be properly closed. For those systems which provide a direct path from containment atmosphere to the outside atmosphere, all automatic containment isolation valves shall be operable or at least one valve [blind flange or equivalent] shall be securely closed in each line penetrating the containment. [Manual or automatic] (L9)

[SR 3.9.3.2] b. The containment vent and purge system, including the radiation monitors which initiate isolation shall be tested and verified to be operable immediately prior to refueling operations. [18 mo] (See 3.3.6) (L7)

[each valve actuates to isolation position on an actual or simulated actuation signal] (A5) (L8)

c. Radiation levels in the containment and spent fuel storage areas shall be monitored continuously. (R1)

d. Whenever core geometry is being changed, core subcritical neutron flux shall be continuously monitored by at least two source range neutron monitors, each with continuous visual indication in the control room and one with audible (See 3.9.2)

ITS

Specification 3.7.11

A1

indication available in the containment. When core geometry is not being changed at least one source range neutron flux monitor shall be in service.

e. At least one residual heat removal loop shall be operable, refueling cavity water level ≥ Plant elevation 272 ft. - 2 in. whenever fuel assemblies are being moved within the reactor pressure vessel, and Tave ≤ 140°F.

f. During reactor vessel head removal and while loading and unloading fuel from the reactor, the minimum boron concentration of 1950 ppm shall be maintained in the primary coolant system and verified by sampling once each shift.

g. Direct communication between the control room and the refueling cavity manipulator crane shall be available whenever changes in core geometry are taking place.

h. Movement of fuel within the core shall not be initiated prior to 100 hours after shutdown.

See 3.9.1 3.9.2 3.9.4 3.9.6

[LCO 3.7.11] [Applicability]

i. The Spent Fuel Building ventilation system shall be OPERABLE and operating when handling irradiated fuel in this area. ~~Prior to moving irradiated fuel assemblies in the spent fuel pool, the ventilation system exhaust shall be aligned to discharge through HEPA and impregnated charcoal filters.~~ When in operation, the exhaust flow of the Containment Purge System shall discharge through HEPA and impregnated charcoal filters. When the Containment Purge System is not in operation at least one automatic containment isolation valve shall be secured in each line penetrating the containment which provides a direct path from the containment atmosphere to the outside atmosphere.

A26

See 3.9.3

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ITS

Suspend CORE ALTERATIONS
Suspend movement of irradiated fuel in containment (A1)

[Required Action A.2.1 & A.2.2] 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. (L4)

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. (L9)

[LCO 3.9.7] [APPLICABILITY] [Required Action A.1]

[SR 3.9.7.1] 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)

Add SR 3.9.7.2
SR 3.9.7.3 (M18)

3.10 REQUIRED SHUTDOWN MARGINS, CONTROL ROD, AND POWER DISTRIBUTION LIMITS (A1)

Applicability

Applies to the required shutdown margins, operation of the control rods, and power distribution limits.

Objective

To ensure (1) core subcriticality after a reactor trip and during normal shutdown conditions, (2) limited potential reactivity insertions from a hypothetical control rod ejection, and (3) an acceptable core power distribution during power operation.

Specification

3.10.1 Full Length Control Rod Insertion Limits

3.10.1.1 (Deleted by Change No. 21 issued 7/6/73)

3.10.1.2 When the reactor is critical, except for physics tests and full length control rod exercises, the shutdown control rods shall be limited in physical insertion as specified in the CORE OPERATING LIMITS REPORT (COLR). (see 3.1.5 + 3.1.8)

[Applicability] MODE 1, MODE 2 with Keff ≥ 1.0

3.10.1.3 When the reactor is critical except for physics tests and full length control rod exercises, the control rods (BANKS) shall be limited in (within) physical insertion as specified in the COLR. Control rod bank insertion beyond the limits specified in the COLR shall be corrected within the time criteria established by the axial power distribution methodology or within one (1) hour, whichever occurs sooner. If bank insertion is not restored to the specified limits (i.e., within one (1) hour or within the time criteria established by the axial power distribution methodology, whichever is sooner) the reactor shall be placed in the hot shutdown condition utilizing normal operating procedures within six (6) hours. (see 3.1.8) (LA2)

[LCO 3.1.6]

[RA A.2]

[RA C.1]

3.10.1.4 At 50 percent of the cycle as defined by burnup, the limits shall be adjusted to the end-of-core values as specified in the COLR. (LA1)

the insertion, sequence and overlap (M16)

Add RAs A.1.1, A1.2, B.1.1, B.1.2 + B.2 (M17)

Add SRs 3.1.6.1
3.1.6.2
3.1.6.3 (M18)

ITS

Specification 3.7.9

A1

3.15 CONTROL ROOM AIR CONDITIONING SYSTEM

Applicability

Applies to the Control Room Air Conditioning System which is comprised of two parts, an environmental control system and an air clean-up system.

The Control Room Air Conditioning System contains redundant safety-related active components. Passive safety-related components and nonsafety-related components are not required to be redundant.

Objective

To provide limiting conditions for operation which ensure the operability of the air conditioning system during plant operation, such that normal operation or plant accident conditions requiring operation of the system will not result in consequences more severe than those analyzed.

Specification

[Applicability] [LCO 3.7.9]

3.15.1 During all modes of operation, except cold shutdown, the Control Room Air Conditioning System shall be operable with two trains of active safety-related components and the shared safety-related passive components, except as described below: (A19)

[ACTION A] [ACTION B]

a. With one safety-related active component or train of the Control Room Air Conditioning System inoperable, restore the inoperable component or train to operable status within 7 days or be in at least hot shutdown (MODE 3) within the next 8 (6) hours and in cold shutdown (MODE 5) within the following 30 hours. (M28)

[ACTION E] [ACTION F]

b. With both redundant active components or trains or a safety-related passive component inoperable, restore at least one redundant train active component or the inoperable passive component to operable status within 48 hours or be in at least hot shutdown (Mode 3) within the next 8 (6) hours and cold shutdown (MODE 5) within the following 30 hours. (A19) (M29)

During MODES 1, 2, 3, 4 (A20)

MODES 1, 2, 3, 4
During movement of irradiated fuel assemblies
During core alterations (L10)

Amendment No. ~~89~~, 134

Supplement 7

ITS

A1

3.15 CONTROL ROOM AIR CONDITIONING SYSTEM

Applicability

Applies to the Control Room Air Conditioning System which is comprised of two parts, an environmental control system and an air clean-up system.

The Control Room Air Conditioning System contains redundant safety-related active components. Passive safety-related components and nonsafety-related components are not required to be redundant.

Objective

To provide limiting conditions for operation which ensure the operability of the air conditioning system during plant operation, such that normal operation or plant accident conditions requiring operation of the system will not result in consequences more severe than those analyzed.

A24

[Applicability]

MODES 1, 2, 3, 4, During CORE ALTERATIONS During movement of irradiated fuel assys

L10

Specification

[LCO 3.7.10]

3.15.1 During all modes of operation, except cold shutdown, the Control Room Air Conditioning System shall be operable with two trains of active safety-related components and the shared safety-related passive components, except as described below:

Water cooled condensing units (WCCUs)

During MODES 1, 2, 3, 4

A20

[ACTION A]
[ACTION B]

a. With one safety-related active component or train of the Control Room Air Conditioning System (WCCUs) inoperable, restore the inoperable component or train to operable status within 7 (30) days or be in at least hot shutdown (MODE 3) within the next 8 (6) hours and in cold shutdown (MODE 5) within the following 30 hours.

L16

M28

[ACTION E]
[ACTION F]

b. With both redundant active components or trains or a safety-related passive component inoperable, restore at least one redundant train active component or the inoperable passive component to operable status within 48 hours or be in at least hot shutdown (MODE 3) within the next 8 (6) hours and cold shutdown (MODE 5) within the following 30 hours.

M29

Amendment No. 89, 134

Supplement 7

ITS

Specification 5.5

A1

Objective

To define the operating requirements for the liquid holdup tanks.

Specification

[5.5.12]

3.16.2.1 The quantity of radioactive material contained in each of the following tanks shall at all times be limited to ≤10 curies, excluding tritium and dissolved or entrained noble gases.

a. A monitor tank
b. B monitor tank
c. C Waste Condensate tank
d. D Waste Condensate tank
e. E Waste Condensate tank
f. Any Outside temporary tank*

LA10

3.16.2.2 With the quantity of radioactive material in any of the above listed tanks exceeding the above limit, immediately suspend all additions of radioactive material to the tank, within 48 hours reduce the tank contents to within the limit, and the event should be described in the Semiannual Radioactive Effluent Release Report, Specification 6.9.1.d.

3.16.2.3 If Specification 3.16.2.2 is not completed within 48 hours a notification must be made to the Commission in accordance with Specification 6.6.

3.16.3 Gaseous Radwaste and Ventilation Exhaust Treatment Systems

Applicability

Applies to the gaseous radwaste and ventilation exhaust treatment systems.

Add 5.5.12

A33

* A temporary tank is defined as any tank having a capacity of ≥ 100 gallons used for the receipt or transfer of radioactive liquids.

LA10

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Amendment No. 89

ITS

TABLE 4.1-1 (Continued)

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

	Channel Description	Check	Calibrate	Test		Remarks
9.	Analog Rod Position	S (1,2)	R	M	(1) (2)	With step counters Following rod motion in excess of six inches when the computer is out of service
10.	Rod Position Bank Counters	S (1,2)	N.A.	N.A.	(1) (2)	Following rod motion in excess of six inches when the computer is out of service With analog rod position
[T3.3.1-1 (13)] 11.	Steam Generator Level	S SR 3.3.1.1	R SR 3.3.1.10	M SR 3.3.1.7		
12.	Charging Flow	N.A.	R	N.A.		
13.	Residual Heat Removal Pump Flow	N.A.	R	N.A.		
14.	Boric Acid Tank Level	D (1)	R	N.A.	(1)	Bubbler tube rodded weekly
15.	Refueling Water Storage Tank Level	W	R	N.A.		
16.	Deleted					
17.	Volume Control Tank Level	N.A.	R	N.A.		
18.	Containment Pressure	D	R	B/W (1)	(1)	Containment isolation valve signal
19.	Deleted by Amendment No. 85					
20.	Boric Acid Makeup Flow Channel	N.A.	R	N.A.		

[T3.3.1-1 (10)] Add SR 3.3.1.14 for RCP Breaker Position

[T3.3.1-1 (16)] Add SR 3.3.1.14 for SI input from ESFAS

See ITS 3.1.7

L16

LA4

M14

A1

See ITS 3.3.2

Specification 3.3.1

ITS

TABLE 4.1-1 (Continued)
MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

See ITS 3.1.7

	Channel Description	Check	Calibrate	Test	Remarks
9.	Analog Rod Position	S (1,2)	R	M	(1) With step counters (2) Following rod motion in excess of six inches when the computer is out of service
10.	Rod Position Bank Counters	S (1,2)	N.A.	N.A.	(1) Following rod motion in excess of six inches when the computer is out of service (2) With analog rod position
11.	Steam Generator Level	S	R	M	
12.	Charging Flow	N.A.	R	N.A.	
13.	Residual Heat Removal Pump Flow	N.A.	R	N.A.	
14.	Boric Acid Tank Level	D (1)	R	N.A.	(1) Bubbler tube rodded weekly
15.	Refueling Water Storage Tank Level	W	R	N.A.	
16.	Deleted				
17.	~~Volume Control Tank Level~~	~~N.A.~~	R	N.A.	
18.	Containment Pressure	SR 3.3.2.1 ~~D~~ 12 hours	SR 3.3.2.7 R	SR 3.3.2.4 ~~B/W~~ (1) 92 days [for functions 3.a.(3) and 3.b.(3) only]	(1) Containment isolation valve signal
19.	~~Deleted by Amendment No. 85~~				
20.	Boric Acid Makeup Flow Channel	N.A.	R	N.A.	

See ITS 3.3.1

See ITS 3.3.1

[Table 3.3.2-1, (1.c), (2.c), (3.a(3)), (3.b(3)), and 4.c]

L 51

M 52

Specification 3.3.2

A1

ITS

TABLE 4.1-1 (Continued)

	Channel Description	Check	Calibrate	Test	Remarks	
	21. Containment Sump Level	N.A.	R	N.A.		See 3.4.15
[T3.3.1-1(15)]	22. Turbine Trip Logic**	N.A.	N.A. SR 3.3.1.10	R SR 3.3.1.15		M17
	23. Accumulator Level and Pressure	S	R	N.A.		LA4
	24. Steam Generator Pressure	S	R	M		See ITS 3.3.2
[T3.3.1-1(17.e)]	25. Turbine First Stage (Impulse) Pressure	S SR 3.3.1.1	R/S SR 3.3.1.10	M SR 3.3.1.13		L17
	26. DELETED				Applicability MODES 1,2,3,4,5	M18
[T3.3.1-1(20)]	27. Logic Channel Testing (Automatic Trip)	N.A.	N.A.	M(1) S/U(2) SR 3.3.1.5 on a STAGGERED TEST BASIS	(1) During hot shutdown and power operations. When periods of reactor cold shutdown and refueling extend this interval beyond one month, this test shall be performed prior to startup.	M19
					(2) Logic channel testing for nuclear source range channels shall only be required prior to each reactor startup, if not performed within the previous seven (7) days.	L18
	28. DELETED					
[T3.3.1-1(12)]	29. 4 KV (RCPs) Frequency	N.A.	R SR 3.3.1.10	R SR 3.3.1.14		

[T3.3.1-1(15)]** Stop valve closure or low EH fluid pressure.

[T3.3.1-1(17.a-d)] Add SR 3.3.1.11 and SR 3.3.1.13 for RPS interlocks P-6, P-8, P-10 and SR 3.3.1.13 and SR 3.3.1.14 for RPS interlock P-7 — M14

Amendment No. ~~83~~, ~~106~~, ~~122~~, ~~127~~, 133

A1

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Specification 3.3.1

TABLE 4.1-1 (Continued)

	Channel Description	Check	Calibrate	Test		Remarks
21.	Containment Sump Level	N.A.	R	N.A.		
22.	Turbine Trip Logic**	N.A.	N.A.	R		
23.	Accumulator Level and Pressure	S	R	N.A.		
24.	Steam Generator Pressure	S	R	M		
25.	Turbine First Stage Pressure	S	R	M		
26.	DELETED					
27.	Logic Channel Testing	N.A.	N.A.	M(1) S/U(2)	(1)	During hot shutdown and power operations. When periods of reactor cold shutdown and refueling extend this interval beyond one month, this test shall be performed prior to startup.
					(2)	Logic channel testing for nuclear source range channels shall only be required prior to each reactor startup, if not performed within the previous seven (7) days.
28.	DELETED					
29.	4 Kv Frequency	N.A.	R	R		

** Stop valve closure or low EH fluid pressure.

See ITS 3.3.1

[Table 3.3.2-1, (1.e), (1.g), and (4.e)]

SR 3.3.2.1 SR 3.3.2.7 SR 3.3.2.4

92 days L52

See ITS 3.3.1

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Specification 3.3.2

A.1

Specification 3.6.1

ITS

A1

4.4 CONTAINMENT TESTS

Applicability

Applies to containment leakage and structural integrity.

Objective

To verify that potential leakage from the containment and that pre-stressing tendon loads are maintained within acceptable values.

Specification

4.4.1 Operational Leakage Rate Testing

A5

[SR 3.6.1.3] Required visual examinations and leakage rate testing for Type A tests shall be performed in accordance with the Containment Leakage Rate Testing Program, except for testing of the containment personnel air lock. The containment personnel air lock shall be tested every six months. See 3.6.2

Add SR 3.6.1.1 — A5

Supplement 7

Specification 3.6.1

(A1)

ITS

used to verify containment structural integrity in accordance with the Containment Tendon Surveillance Program

(A3)

4.4.4.3 Acceptance Criteria

[SR 3.6.1.2]

a. The removed tendon will be ~~sent to a commercial laboratory~~ qualified to perform material tests and analyses. The tendon bars will be removed from the sheath and the grout removed. A visual inspection will be performed to detect and record evidence of corrosion. Tensile tests will be performed on selected bars to determine ultimate strengths. The results of these tests will be compared with the original properties of the original bar material to ascertain significant changes that have occurred. A qualified engineering firm will be retained to assess the results of these tests and to report thereon.

See 5.5.6

b. Observation of the structural test at design pressure indicating no significant differences in containment growth and crack pattern spacing and width from that during the proof test shall be considered as demonstrating the continual integrity of the structure. It is realized that the deflections, in the prestressed direction particularly, will be small, that the significance of differences in these small deflections will be difficult to evaluate, and therefore that only a gross difference in the structure, such as a large loss of prestress force, would be apparent from the measurements. The difference in measurements, if any, will be examined considering the predictable range of variation of time dependent changes in material properties, the thermal conditions at the time of the test, instrument error and other pertinent factors.

See 5.5.16

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Specification 3.5.2

ITS

(A1)

Containment Spray System

4.5.1.3 System tests shall be performed at each refueling interval. The test shall be performed with the isolation valves in the spray supply lines at the containment and spray additive tank blocked closed. Operation of the system is initiated by tripping the normal actuation instrumentation. — See (cloud) 3.6.6 + 3.6.7

4.5.1.4 Verify each spray nozzle is unobstructed at least every 10 years. — See 3.6.6

4.5.1.5 The tests discussed in 4.5.1.3 and 4.5.1.4 will be considered satisfactory if visual observations indicate all components have operated satisfactorily. — See 3.6.6 + 3.6.7

Containment Fan Coolers

4.5.1.6 Each fan cooler unit shall be tested at monthly intervals to verify proper operation of all essential features including valves, dampers and piping. — See 3.6.6

4.5.2 Component Verification

(M22)

[SR 3.5.2.1]

4.5.2.1 ~~When the reactor coolant pressure is in excess of 1,000 psi, it shall~~ be verified at least once per 12 hours ~~from the RTGB indicators/controls~~ that the following valves are in their proper position with control power to the valve operators removed. (LS)

Valve Number	Valve Position	Function
1- MOV 862 A&B	Open	LHSI
2- MOV 863 A&B	Closed	LHSI
3- MOV 864 A&B	Open	LHSI, HHSI
4- MOV 866 A&B	Closed	HHSI
5-MOV 878A+B	Open	HHSI

(A3)

(M15)

Specification 3.7.4

(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

(LA7)

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.

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.

[SR 3.7.4.3] 4.8.3 The auxiliary feedwater ~~pumps discharge~~ automatic valves that are not locked, sealed, or otherwise secured in position will be tested by ~~operator action~~ actual or simulated actuation signal at monthly intervals. (M12) (L8) (L7) (A13)

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)

Add SR 3.7.4.2 (M38)

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Specification 3.7.11

A1

each refueling outage operation or after every 720 hours of system operation, whichever occurs first, and following significant painting, fire, or chemical release in any ventilation zone communicating with the filter system.

c. Cold DOP testing shall be performed after each complete or partial replacement of a HEPA filter bank or after any structural maintenance of the filter system housing.

d. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of a charcoal adsorber bank or after any structural maintenance on the filter system housing.

e. A uniform air distribution within ± 20% across HEPA filters and charcoal adsorbers must be demonstrated initially and after each major repair or modification to the systems which would affect the air distribution.

See 5.5

4.12.3 The relative humidity of the air processed by the refueling filter system shall be monitored hourly during fuel handling operations.

LA8

A6

Basis

Pressure drop across the combined HEPA filters and charcoal adsorbers of less than 6 inches of water at the system design flow rate will indicate that the filters and adsorbers are not clogged by excessive amounts of foreign matter. Pressure drop and fan capacity should be determined a least once per operating cycle to show system performance capability.

The frequency of tests and sample analysis are necessary to show that the HEPA filters and charcoal adsorbers can perform as evaluated under postulated accident conditions. The charcoal adsorber efficiency test procedures should allow for the removal of one adsorber tray, emptying of one bed from the tray, mixing the adsorbent thoroughly and obtaining at least two samples. Each sample should be at least two inches in diameter and a length equal to the thickness of the bed. If test results are unacceptable, all adsorbent in the system shall be replaced

Supp. 7

Specification 3.9.7

each refueling outage operation or after every 720 hours of system operation, whichever occurs first, and following significant painting, fire, or chemical release in any ventilation zone communicating with the filter system.

c. Cold DOP testing shall be performed after each complete or partial replacement of a HEPA filter bank or after any structural maintenance of the filter system housing.

d. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of a charcoal adsorber bank or after any structural maintenance on the filter system housing.

e. A uniform air distribution within ± 20% across HEPA filters and charcoal adsorbers must be demonstrated initially and after each major repair or modification to the systems which would affect the air distribution.

See 5.5

[SR 3.9.7.1 Frequency]

4.12.3 The relative humidity of the air processed by the refueling filter system shall be monitored hourly during fuel handling operations.

Basis

Pressure drop across the combined HEPA filters and charcoal adsorbers of less than 6 inches of water at the system design flow rate will indicate that the filters and adsorbers are not clogged by excessive amounts of foreign matter. Pressure drop and fan capacity should be determined at least once per operating cycle to show system performance capability.

The frequency of tests and sample analysis are necessary to show that the HEPA filters and charcoal adsorbers can perform as evaluated under postulated accident conditions. The charcoal adsorber efficiency test procedures should allow for the removal of one adsorber tray, emptying of one bed from the tray, mixing the adsorbent thoroughly and obtaining at least two samples. Each sample should be at least two inches in diameter and a length equal to the thickness of the bed. If test results are unacceptable, all adsorbent in the system shall be replaced

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Specification 5.5

each refueling outage operation or after every 720 hours of system operation, whichever occurs first, and following significant painting, fire, or chemical release in any ventilation zone communicating with the filter system.

c. Cold DOP testing shall be performed after each complete or partial replacement of a HEPA filter bank or after any structural maintenance of the filter system housing.

d. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of a charcoal adsorber bank or after any structural maintenance on the filter system housing.

e. A uniform air distribution within ± 20% across HEPA filters and charcoal adsorbers must be demonstrated initially and after each major repair or modification to the systems which would affect the air distribution.

LA9

4.12.3 The relative humidity of the air processed by the refueling filter system shall be monitored hourly during fuel handling operations.

see 3.7.11 3.9.7

Basis

Pressure drop across the combined HEPA filters and charcoal adsorbers of less than 6 inches of water at the system design flow rate will indicate that the filters and adsorbers are not clogged by excessive amounts of foreign matter. Pressure drop and fan capacity should be determined a least once per operating cycle to show system performance capability.

The frequency of tests and sample analysis are necessary to show that the HEPA filters and charcoal adsorbers can perform as evaluated under postulated accident conditions. The charcoal adsorber efficiency test procedures should allow for the removal of one adsorber tray, emptying of one bed from the tray, mixing the adsorbent thoroughly and obtaining at least two samples. Each sample should be at least two inches in diameter and a length equal to the thickness of the bed. If test results are unacceptable, all adsorbent in the system shall be replaced

A17

ITS

(A1)

[5.7] 6.13 HIGH RADIATION AREA

[5.7.1] 6.13.1 In lieu of the "control device" or "alarm signal" required by paragraph 20.1601(a) of 10 CFR 20, each High Radiation Area in which the intensity of radiation is 1000 mRem/hr or less shall be barricaded and consipcuously posted by requiring issuance of a Radiation Work Permit (RWP).* Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

a. A radiation monitoring device which continuously indicates the radiation dose rate in the area.

b. A radiation monitoring device provided for each individual which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel have been made knowledgeable of them.

(LA21)

c. An indvidual qualified ~~in~~ as a radiation ~~protection procedures~~ control technician who is equipped with a radiation dose monitoring device. This individual shall be responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the Radiation Control Supervisor in the Radiation Work Permit.

[5.7.2] 6.13.2 The requirements of ~~6.13.1~~ 5.7.1 above shall apply to each high radiation area in which the intensity of radiation is greater than 1000 mRem/hr at 30 centimeters (12 inches) from the radiation source or from any surface penetrated by the radiation, but less than 500 rads/hour at 1 meter from the radiation source or from any surface penetrated by the radiation. In addition, locked doors shall be provided to prevent unauthorized entry into such areas and the keys shall be maintained under the administrative control of the Operations Shift Supervisor Shift Superintendent on duty and/or the Radiation Control Supervisor. Entrance there to shall also be controlled by requiring issuance of a Radiation Work Permit. The footnote for Section ~~6.13.1~~ 5.7.1 is not applicable to each high radiation area in which the intensity of radiation is greater than 1000 mRem/hr.

(LA21) (A37)

* ~~Health Physics~~ Radiation control personnel or personnel escorted by ~~Health Physics~~ personnel shall be exempt from RWP issuance rquirement during the performance of their assigned duties within the RCA, provided they comply with approved radiation protection procedures for entry into high radiation areas.