SUPPLEMENT 6
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)"	
	NA	
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)"	
	3.3-55	3.3-55
	-	3.3-55a
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	15	15
f.	Part 6, "Markup of ISTS Bases"	
	B 3.3-161, B 3.3-161a	B 3.3-161, B 3.3-161a
g.	Part 7, "Justification for Differences (JFDs) to ISTS Bases"	
	NA	
h.	Part 8, "Proposed HBRSEP, Unit No. 2 ITS"	
	3.3-42	3.3-42
i.	Part 9. "Proposed Bases to HBRSEP, Unit No. 2 ITS Bases"	
	B 3.3-127	B 3.3-127
	-	B 3.3-127a
j.	Part 10. "ISTS Generic Changes"	
	NA	

CTS

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, [5 and 6]
During movement of irradiated fuel assemblies.
During CORE ALTERATIONS.

INSERT 3.3-55A

ACTIONS

NOTE
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one channel or train inoperable.	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.	7 days

Automatic Actuation

Pressurization

(continued)

Insert 3.3-5A

---NOTE---

Not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration.

---

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 The Applicability for Specifications 3.3.7 is modified by a Note. This Note provides clarification that the Specification is not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration. This Note is necessary to eliminate the potential for confusion regarding the Applicability of the requirements of this Specification to activities associated with shipments of irradiated fuel assemblies. The requirements of this Specification are not necessary when irradiated fuel assemblies are in a spent fuel shipping cask in its full shipping configuration 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. NRC has reviewed and approved the shipments of spent fuel by rail from the H. B. Robinson Plant near Darlington, SC to the Shearon Harris Nuclear Power Plant near New Hill, North Carolina as documented in NRC's May 24, 1990 letter to Carolina Power and Light Company.

BASES

LCO

Automatic Actuation Logic and Actuation Relays (continued)

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

Control Room Radiation

The LCO specifies two required Control Room Atmosphere 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.

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.

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)

Insert B 3.3-161A

The Applicability is modified by a Note. This Note provides clarification that the Specification is not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration. A spent fuel shipping cask is in its full shipping configuration when the cask is properly closed, sealed and in the configuration necessary to withstand the analyzed accident condition associated with the spent fuel shipping cask. 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.

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.

----------NOTE----------
Not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration.

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)

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.

The Applicability is modified by a Note. This Note provides clarification that the Specification is not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration. A spent fuel shipping cask is in its full shipping configuration when the cask is properly closed, sealed and in the configuration necessary to withstand the analyzed accident condition associated with the spent fuel shipping cask. 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.

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)

SUPPLEMENT 6
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)"	
	3.1-4a, 3.3-5	3.1-4a, 3.3-5
b.	Part 2, "Discussion of Changes (DOCs) for CTS Markup"	
	4, 16, 17, 21, 22, 23, 24, 26b, 29	4, 16, 17, 21, 22, 23, 24, 26b, 29
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)"	
	3.4-27, 3.4-27a, 3.4-28, 3.4-28a, 3.4-30	3.4-27, 3.4-27a, 3.4-28, 3.4-28a, 3.4-30
	3.4-30a, 3.4-31	3.4-30a, 3.4-31
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	6 & 7	6 & 7
f.	Part 6, "Markup of ISTS Bases"	
	B 3.4-58, B 3.4-60, B 3.4-62	B 3.4-58, B 3.4-60, B 3.4-62
	-	B 3.4-62b
	B 3.6-64, B 3.4-65, B 3.4-66, B 3.4-67a	B 3.6-64, B 3.4-65, B 3.4-66, B 3.4-67a
	B 3.4-68, B 3.4-69a, B 3.4-70	B 3.4-68, B 3.4-69a, B 3.4-70
g.	Part 7, "Justification for Differences (JFDs) to ISTS Bases"	
	NA	
h.	Part 8, "Proposed HBRSEP, Unit No. 2 ITS"	
	3.4-29, 3.4-30, 3.4-31, 3.4-32, 3.4-33	3.4-29, 3.4-30, 3.4-31, 3.4-32, 3.4-33
	3.4-34, 3.4-35	3.4-34, 3.4-35
i.	Part 9. "Proposed Bases to HBRSEP, Unit No. 2 ITS Bases"	
	B 3.4-61, B 3.4-65, B 3.4-66, B 3.4-67	B 3.4-61, B 3.4-65, B 3.4-66, B 3.4-67
	B 3.4-68, B 3.4-69, B 3.4-70, B 3.4-71	B 3.4-68, B 3.4-69, B 3.4-70, B3.4-71
	B 3.4-72, B 3.4-73, B 3.4-74	B 3.4-72, B 3.4-73, B 3.4-74

SUPPLEMENT 6
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

Specification 3.4.12

A1

[LCO 3.4.12.a.1] [LCO 3.4.12.b] cold leg temperature is less than or equal to 350°F and when the head is on the reactor vessel and the RCS is not vented to the containment.

[ACTION E]

1. With one PORV inoperable and T_{avg} greater than 200°F and any RCS cold leg temperature less than 350°F:

   A. Restore the inoperable PORV to OPERABLE status within 7 days; or

   B. Depressurize and vent the RCS to the CV within the next 12 hours

[ACTION G]

[ACTION F]

2. With one PORV inoperable and T_{avg} less than or equal to 200°F:

   A. Restore the inoperable PORV to OPERABLE status within 24 hours; or

   B. Complete depressurization and venting of the RCS to the CV within an additional 12 hours.

[ACTION G]

[ACTION G]

3. With both PORVs inoperable, complete depressurization and venting of the RCS to the CV within 12 hours.

[SR 3.4.12.4] [NOTE]

4. With the RCS vented per 1, 2, or 3, verify the vent pathway:

   A. At least once per 31 days when the pathway is provided by a valve(s) that is locked, sealed, or otherwise secured in the open position; or

   B. At least once per shift

12 hours

8

8

M24

M25

Add LCO 3.4.12 (accumulator isolation)

Add Applicability NOTE

ACTIONS A, B, C, D

SR 3.4.12.1

SR 3.4.12.2

SR 3.4.12.3

A23

Add LCO 3.4.12a.3

3.1-4a Amendment No. 162 1

Add LCO 3.4.12.b

M37

Supplement 6

ITS

A1

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

See 3.5.1, 3.5.2, 3.5.3 & 3.5.4

All but one

L8

with the RCS temperature ≥175°

[LCO 3.4.12 a.2]

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

M26

MODE 4, 5, 6 (reason)

3.4.7
3.4.8

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

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

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

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

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

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

A23 CTS Specification 3.1.2.1 is modified to add LCO 3.4.12.a.3 to the LCO. LCO 3.4.12.a.3 requires no SI pump be capable of injecting into the RCS with any RCS cold leg temperature less than 175°F. Since this requirement existed in the CTS prior to the change to CTS, for the plant condition when any RCS cold leg temperature is less than 175°F, this change is administrative, and has no adverse impact on safety.

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

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

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

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

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

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

M25 The CTS is revised to adopt LCO 3.4.12 (accumulator isolation); ITS Specification 3.4.12 Applicability Note; ACTIONS A, B, C, D and G (last two conditions); and SRs 3.4.12.1 and Note, 3.4.12.2 and Note, and

3.4.12.3 to require that the RCS be adequately protected from excessive mass input capability during low temperature operation. LCO 3.4.12 and the Applicability Note requires the accumulators to be isolated when accumulator pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature. These restrictions are necessary to limit the coolant input capability consistent with assumptions of the analysis. With two or more SI pumps capable of injection when RCS cold leg temperature ≥ 175°F and the RCS not vented to ≥ 4.4 square inches, Action A requires immediately initiating action to limit the number of SI pumps capable of injection. With one or more SI pumps capable of injection when RCS cold leg temperature ≤ 175°F and the RCS not vented ≥ 4,4 square inches, Action B requires immediately initiating action to disable any SI pump capable of injection. To immediately initiate action to restore restricted coolant input capability to the RCS reflects the urgency of removing the RCS from this condition. With an accumulator not isolated when required, Action C requires isolation of the accumulator within one hour. If isolation is needed and cannot be accomplished in 1 hour, Required Action D.1 and Required Action D.2 provide two options, either of which must be performed in the next 12 hours. By increasing the RCS temperature to > 350°F, an accumulator pressure of 600 psig cannot exceed the LTOP limits if the accumulators are fully injected. Depressurizing the accumulators below the LTOP limit also gives this protection. The Completion Times are based on operating experience that these activities can be accomplished in these time periods consideration that an event requiring LTOP is not likely in the allowed times.

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

a. Both required PORVs are inoperable; or

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

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

The vent must be sized ≥ 4.4 square inches to ensure that the flow capacity is greater than that required for the worst case mass input transient reasonable (i.e., two SI pumps, three charging pumps, and RHR in operation and aligned for shutdown cooling) during the applicable MODES. This action is needed

detectable by a Channel Operational Test (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.

This change therefore imposes more restrictive requirements, and has no adverse impact on safety.

M36 CTS Specification 3.1.1.2 requires two steam generators to be operable whenever the average primary coolant temperature is above 350°F. ITS Specification 3.4.5 requires two RCS loops to be OPERABLE in MODE 3. The ITS Bases for Specification 3.4.5 describes that an OPERABLE RCS loop consists of one OPERABLE reactor coolant pump and one OPERABLE steam generator in accordance with the Steam Generator Tube Surveillance Program, which has a water level within required limits. This LCO ensures forced circulation of the reactor coolant to remove decay heat from the core and to provide proper boron mixing. As a result, the ITS Specification 3.4.5 requirement constitutes an additional restriction on plant operation necessary to help ensure decay heat removal capability is maintained.

M37 CTS Specification 3.1.2.1.d requires the overpressure protection system to be OPERABLE whenever RCS temperature is less than or equal to 350°F and the reactor vessel head is on the reactor vessel and the RCS is not vented. Implicit in CTS Specification 3.1.2.1.d is the allowance that adequate overpressure protection is provided by removal of the reactor vessel head or venting the RCS. ITS Specification 3.4.12.b is added to provide the details of what constitutes acceptable low temperature overpressure protection (the RCS depressurized and an RCS vent of $\geq$ 4.4 square inches). Adding these details into the Technical Specifications represents an additional restriction on unit operation and is necessary to ensure protection of the reactor coolant pressure boundary from a low temperature overpressure event. The 4.4 square inch vent size is based upon an analysis assuming a mass input from two safety injection pumps, three charging pumps and the RHR system in operation aligned for shutdown cooling. Under these circumstances, the ASME Appendix G limit will not be reached.

M38 The CTS is revised by adopting ISTS Specification 3.4.5 LCO "Note," Specification 3.4.6 LCO "Note 1," and Specification 3.4.7 LCO "Note 1." These Notes permit all RCPs or RHR pumps to be de-energized for up to 1 hour in any 8 hour period, to permit tests that are designed to validate various accident analyses values. CTS Specification 3.1.1.1.a currently allows operation with less than two RCPs in operation when the conditions set forth in CTS Specifications 3.1.1.1.a.1, 3.1.1.1.a.2, and 3.1.1.1.a.3 are met. The CTS has no time restriction for operation in this condition. Because these notes impose a time restriction on operation with one or no RCPs in operation, this change is a more restrictive change. This change is acceptable, however, because

unlimited operation with no RCPs in operation could permit boron stratification. In addition, the Note may only be used if no operations which could cause a reduction of RCS boron concentration are being performed, core outlet temperature reduction of RCS boron concentration are being performed, core outlet temperature is maintained at least 10 degrees F below saturation temperature, and measures are taken to preclude a power excursion resulting from an inadvertent control rod withdrawal event (for Specifications 3.4.5 and 3.4.6). Industry operating experience has also shown that boron stratification is not a problem during this short period with no forced flow.

M39 CTS Specification 3.3.1.4.a, which requires the inoperable RHR loop to be restored within 14 days if one RHR loop is inoperable, is revised in ITS LCO 3.4.7 Required Actions A.1 and A.2 to require a Completion Time of immediately. This change imposes a more restrictive completion time. If one RHR train is inoperable and the required SG has secondary side water level < 16% or the RCS is vented, redundancy for heat removal is lost. Action must be initiated immediately to restore a second RHR train to OPERABLE status or to restore the required SG secondary side water level and the RCS pressure boundary. Either Required Action A.1 or Required Action A.2 will restore redundant heat removal paths. The immediate Completion Time reflects the importance of maintaining the availability of two paths for heat removal. Therefore, this change has no adverse impact on safety.

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA1 CTS Specifications 3.1.2.1.a, 3.1.2.1.b, 3.1.2.1.c, and 3.1.2.4 provide limitations on use of, and instructions for updating the pressure and temperature (P/T) limit curves (CTS Figures 3.1-1 and 3.1-2). This detail is not retained in the ITS and is relocated to the Bases to ITS LCO 3.4.3.

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

LA2 CTS Specification 3.1.1.1.a.1 requires that a shutdown margin of at least 4% $\Delta k/k$ be maintained. This detail is not retained in the ITS and is relocated to the Core Operating Limits Report (COLR). The COLR includes the methodology for SDM limit determinations as identified in ITS Chapter 5.0.

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

LA3 CTS Specification 3.1.1.3.a requires that one pressurizer safety valve be OPERABLE whenever the reactor head is on the vessel, and the RCS is not open for maintenance. This detail is not retained in the ITS and is relocated to licensee controlled documents.

The details associated with the involved Specifications are not required to be in the ITS to provide adequate protection of the public health and safety, since the ITS still retains Low Temperature Overpressure Protection (LTOP) requirements. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall

operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these details is acceptable.

LA4 CTS Specifications 4.2.4.1 and 4.2.4.3 require performance of a PORV CHANNEL CALIBRATION and isolation of normal air and nitrogen supplies to the PORV accumulators when conducting the 18 month accumulator test, respectively. This detail is not retained in the ITS and is relocated to 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.

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

Restructured and Improved Technical Specifications," Westinghouse Electric Corporation, November 1987, the response to a malfunction of the CVCS, which causes a boron dilution event, is to close the appropriate valves in the reactor makeup system. This action is required before the shutdown margin is lost. Since the boron addition capability is not assumed to function to mitigate the consequences of any analyzed accident these requirements for component operability relating to boron addition to the RCS are details that are relocated to the Technical Requirements Manual.

This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the overall operational requirements. Furthermore, NRC and licensee resources associated with processing license amendments to these requirements will be reduced. Therefore, relocation of these requirements is acceptable.

such that natural circulation can be achieved. Actions to ensure these conditions are present, prior to assuming the SG is capable of replacing an RHR loop, are contained in the normal operating procedures and are not provided in the specification. This change provides more flexibility in operation, and is therefore less restrictive. This change is acceptable, however, because with either choice, redundant decay heat removal systems are OPERABLE and available for use. In MODE 5 with the RCS loops filled, the primary function of the reactor coolant is the removal of decay heat and transfer this heat either to the steam generator (SG) secondary side coolant or the component cooling water via the residual heat removal (RHR) heat exchangers. While the principal means for decay heat removal is via the RHR System, the SGs are specified as a backup means for redundancy when the RCS is not vented. Even though the SGs cannot produce steam in this MODE, they are capable of being a heat sink due to their large contained volume of secondary water. As long as the SG secondary side water is at a lower temperature than the reactor coolant, heat transfer will occur. The rate of heat transfer is directly proportional to the temperature difference. This change is consistent with NUREG-1431.

L7 CTS Specification 3.1.1.3.c.1 requires that pressurizer code safety valve lift settings be between 2485 psig and 2560 psig. ITS Specification 3.4.10 requires that safety valve lift settings be between 2410 psig and 2560 psig. This is a relaxation of requirements, and is less restrictive. This change is acceptable, however, since the same level of overpressure protection is provided. The wider OPERABILITY range of 2485 psig $\pm$ 3% allows for drift during valve setpoint test intervals, as permitted by Section III of the ASME Code. During setpoint testing, the valves are reset to 2485 psig $\pm$ 1%, as required by Section XI of the ASME Code. This change is consistent with NUREG-1431.

L8 CTS Specification 3.3.1.3 requires that the SI pump breakers be racked out when RCS temperature is below 350°F and the system is not vented to containment atmosphere. ITS LCO 3.4.12.a.2 requires all but one SI pump to be made incapable of injecting into the RCS when the RCS temperature is $\geq$ 175°F. This is a relaxation of requirements, and is less restrictive. This change is acceptable based on a new overpressure protection analysis that has been performed to allow OPERABILITY of one train of SI in MODE 4. This analysis assumes one SI pump capable of injection into the RCS with RCS temperature $\geq$ 175°F and < 350°F.

L9 CTS Specification 3.1.1.3.c, which requires that all three pressurizer code safety valves be operable when RCS temperature is above 350°F, is revised to add ITS LCO 3.4.10 NOTE, which allows the safety valve lift settings to be outside the LCO limits for the purpose of setting the safety valves under ambient (hot) conditions. Because this note allows the pressurizer safety valves to be potentially inoperable in MODE 3 until the safety valves can be tested and set, this change is less restrictive. This change is acceptable because the limitations included

CTS

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.12 Low Temperature Overpressure Protection (LTOP) System

[3.1.2.1.d] [3.3.1.3] LCO 3.4.12 An LTOP System shall be OPERABLE with a maximum of [one] [high pressure injection (HPI)] pump [and one charging pump] capable of injecting into the RCS and the accumulators isolated and either a or b below.

a. Two RCS relief valves, as follows:

1. Two power operated relief valves (PORVs) with lift settings within the limits specified in the PTLR or

[2. Two residual heat removal (RHR) suction relief valves with setpoints ≥ [436.5] psig and ≤ [463.5] psig, or]

[3. One PORV with a lift setting within the limits specified in the PTLR and one RHR suction relief valve with a setpoint ≥ [436.5] psig and ≤ [463.5] psig].

b. The RCS depressurized and an RCS vent of ≥ [2.07] square inches.

[3.1.2.1.d] APPLICABILITY: MODE 4 when all RCS cold leg temperature is ≤ [275]°F and 5

MODE 5

MODE 6 when the reactor vessel head is on.

[M25]

---NOTE---

Accumulator isolation is only required when accumulator pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature allowed by the P/T limit curves provided in the PTLR.

Figures 3.4.3-1 and 3.4.3-2

Insert 3.4.12-1

isolation valve closed and deenergized

a. 1. Two power operated relief valves (PORVs) with the lift settings of ≤ 400 psig and an allowable value ≤ 418 psig,

2. A maximum of one Safety Injection (SI) pump capable of injecting into the RCS when all cold leg temperatures are ≥ 175°F; and

3. No SI pumps capable of injecting into the RCS when any cold leg temperature is < 175°F.

CTS

AND

Requirements of LCO 3.4.12.b not met

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
[M25] A. Two or more ~~HPI~~ pumps capable of injecting ~~into~~ the RCS with all RCS cold leg temperature ≥ 175°F.	A.1 Initiate action to verify a maximum of ~~one~~ HPI pump is capable of injecting into the RCS.	Immediately
[M25] B. Two or more charging pumps capable of injecting into the RCS.	B.1 ----------NOTE---------- Two charging pumps may be capable of injecting into the RCS during pump swap operation for ≤ 15 minutes. ---------- Initiate action to verify a maximum of [one] charging pump is capable of injecting into the RCS.	Immediately
[M25] C. An accumulator (isolation valve) not ~~isolated~~ when the accumulator pressure is greater than or equal to the maximum RCS pressure for existing cold leg temperature allowed in the PTLR.	C.1 (Close and deenergize) ~~Isolate~~ affected accumulator (isolation valve)	1 hour

(continued)

Figures 3.4.3-1 and 3.4.3-2

ITS INSERT 3.4.12-2 (LTOP System)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more SI pumps capable of injecting into the RCS with any RCS cold leg temperature < 175°F. AND Requirements of LCO 3.4.12.b not met.	B.1 Initiate action to verify no SI pumps capable of injecting into the RCS.	Immediately

ITS INSERT 3.4.12-3 (LTOP System)

Not used.

CTS

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
[3.1.2.1.d] G. Two required ~~RCS relief valves~~ PORV inoperable. (21) OR Required Action and associated Completion Time of Condition A. ~~B.~~ D. E, or F not met. OR LTOP System inoperable for any reason other than Condition A. ~~B.~~ C. D. E. or F.	G.1 Depressurize RCS and establish RCS vent of ≥ ~~2.0~~ 4.4 square inches. (35)	8 hours

Only required to be NOT met when all RCS cold leg temperatures ≥ 175°F and requirements of LCO 3.4.12 b not met (1)

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
[M25]	SR 3.4.12.1 Verify a maximum of ~~one~~ NPI (51) pump is capable of injecting into the RCS.	12 hours
[M25]	~~SR 3.4.12.2 Verify a maximum of one charging pump is capable of injecting into the RCS.~~	~~12 hours~~
[M25]	SR 3.4.12.3 Verify each accumulator is ~~isolated~~ closed and deenergized (isolation valve)	12 hours

INSERT 3.4.12-5

15

2

(continued)

ITS Insert 3.4.12-4 (LTOP)

Not Used.

ITS Insert 3.4.12-5 (LTOP)

SURVEILLANCE		FREQUENCY
SR 3.4.12.2	----------NOTE---------- Only required to be met when any RCS cold leg temperature is <175°F and requirements of LCO 3.4.12.b not met. ---------- Verify no SI pumps capable of injecting into the RCS.	12 hours

CTS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
[SR 3.4.12.4	Verify RHR suction valve is open for each required RHR suction relief valve.	12 hours] (21)
[3.1.2.1.4] SR 3.4.12.5 (4)	----------NOTE---------- Only required to be performed (met) when complying with LCO 3.4.12.5. ---------- Verify RCS vent ≥ [8.07] (4.4) square inches open.	(28) 12 hours for unlocked open vent valve(s) (35) AND 31 days for locked open vent valve(s)
[4.2.5.1.c] SR 3.4.12.6 (5)	Verify PORV block valve is open for each required PORV.	72 hours
[SR 3.4.12.7	Verify associated RHR suction isolation valve is locked open with operator power removed for each required RHR suction relief valve.	31 days] (21)
[4.2.5.1.a] [T4.1-1 (31)] SR 3.4.12.8 (6)	----------NOTE---------- Not required to be met until 12 hours after decreasing RCS cold leg temperature to ≤ [275]°F. ---------- (29)	
	Perform a COT on each required PORV, excluding actuation.	31 days (thereafter) (29)

(continued)

Once within 31 days prior to entering MODE 4, 5, or 6 when the reactor vessel head is on AND (29)

Supplement 6

unnecessary burden, since the plant is required to be in MODE 3 with Tavg < 500°F within 6 hours, thereby exiting the MODE of Applicability.

28 ITS SR 3.4.12.4 requires that an RCS vent ≥ 4.4 square inches is open. SR 3.4.12.4 is modified by a Note which states that this SR is only required to be "met" when complying with LCO 3.4.12.b. LCO 3.4.12 provides two options for complying with LCO 3.4.12. As a result, consistent with ITS 1.4, "Frequency," if LCO 3.4.12 is required to be complied with, then LCO 3.4.12.a or LCO 3.4.12.b is required to be met. ITS 1.4 uses the term "performed" to avoid SR 3.0.4 conflicts. In this case, no SR 3.0.4 conflicts exist. Therefore, the term "performed" is not replaced with "met".

29 SR 3.4.12.8 of the ISTS includes a Note that allows the completion of the performance of the Channel Operational Test for each required PORV to be delayed until 12 hours after entering into the applicable MODE in which the PORVs are required to provide Low Temperature Overpressure Protection (LTOP). The purpose of this Note is to provide time to establish the conditions necessary to perform the Surveillance since at some plants the required Channel Operational Test cannot be performed until the plant is in the LTOP MODES. HBRSEP Unit No.2 ITS Specification 3.4.12 is modified to delete this Note. At HBRSEP Unit No. 2, the design of the LTOP System is such that this Surveillance can be performed prior to entering the LTOP MODES. As a result of this change and the incorporation of ITS SR 3.0.4, the Frequency of SR 3.4.12.6 is modified to reflect the current licensing basis approved in Amendment No. 162.

30 LCO 3.4.9.b of the ISTS requires pressurizer heaters to be OPERABLE with a specified capacity (in kW) and be capable of being powered from an emergency power supply. The ISTS ACTIONS of Specification 3.4.9 address inoperable pressurizer heaters but do not address pressurizer heaters not capable of being powered from an emergency power supply. As a result of the definition of OPERABLE-OPERABILITY in ITS 1.1, Definitions, the pressurizer heaters would not be considered inoperable if they were incapable of being powered from an emergency power supply provided they were powered from a normal power supply. Therefore, Condition C is provided for the condition of the required pressurizer heaters not capable of being powered from an emergency power supply. This change is consistent with the current licensing basis approved in Amendment No. 59. HBRSEP Unit No.2 ITS Specification 3.4.9 Condition C requires restoration of the capability to power the required pressurizer heaters from an emergency power supply within 72 hours. The subsequent Condition is renumbered as a result of this change.

31 To meet the LCO requirements for ISTS Specification 3.4.7 (RCS Loops-MODE 5, Loops Filled), ISTS LCO 3.4.7.b provides the allowance to utilize the secondary side water level of the required plant specific

number of steam generators to be greater than or equal to a specified plant specific value. LCO 3.4.7.b of the HBRSEP Unit No.2 ITS is revised to require that the required steam generator also be OPERABLE. The requirement for the steam generator to be OPERABLE is specified in the Bases of ISTS 3.4.7. This change is being done to provide consistency between the requirements in the LCO and the description of these requirements in the associated Bases.

32 ISTS LCO 3.4.5 Condition C, and associated Required Actions, are modified in ITS 3.4.5 Condition C and associated Required Actions to provide a condition, other than LCO 3.0.3, when requirements of the LCO associated with precluding a rod withdrawal accident are not met and that are not covered by Conditions A or D.

33 ISTS LCO 3.4.5 Condition D, is modified in ITS 3.4.5 to add the condition, other than LCO 3.0.3, when the Completion Time of Required Action C.1 is not met. This change is necessary to require actions D.1, D.2, and D.3 to be performed immediately to preclude conditions of the LCO that are not met from continuing to be outside of the applicable safety analyses beyond the allowed one (1) hour of Required Action C.1.

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.

B 3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.12 Low Temperature Overpressure Protection (LTOP) System

BASES

BACKGROUND

The LTOP System controls RCS pressure at low temperatures so the integrity of the reactor coolant pressure boundary (RCPB) is not compromised by violating the pressure and temperature (P/T) limits of 10 CFR 50, Appendix G (Ref. 1). The reactor vessel is the limiting RCPB component for demonstrating such protection. The PTLR provides the maximum allowable actuation logic setpoints for the power operated relief valves (PORVs) and the maximum RCS pressure for the existing RCS cold leg temperature during cooldown, shutdown, and heatup to meet the Reference 1 requirements during the LTOP MODES.

INSERT B 3.4.12-1

The reactor vessel material is less tough at low temperatures than at normal operating temperature. As the vessel neutron exposure accumulates, the material toughness decreases and becomes less resistant to pressure stress at low temperatures (Ref. 2). RCS pressure, therefore, is maintained low at low temperatures and is increased only as temperature is increased.

The potential for vessel overpressurization is most acute when the RCS is water solid, occurring only while shutdown; a pressure fluctuation can occur more quickly than an operator can react to relieve the condition. Exceeding the RCS P/T limits by a significant amount could cause brittle cracking of the reactor vessel. LCO 3.4.3, "RCS Pressure and Temperature (P/T) Limits," requires administrative control of RCS pressure and temperature during heatup and cooldown to prevent exceeding the PTLR limits.

P/T

This LCO provides RCS overpressure protection by having a minimum coolant input capability and having adequate pressure relief capacity. Limiting coolant input capability requires all but [one] [high pressure injection (HPI)] pump [and one charging pump] incapable of injection into the RCS and isolating the accumulators. The pressure relief capacity requires either two redundant RCS relief valves or a depressurized RCS and an RCS vent of sufficient size. One RCS relief valve or the open RCS vent is the overpressure protection device that acts to terminate an increasing pressure event.

Compliance with the requirements of LCO 3.4.12 and items a.2 and a.3.

(continued)

Supplement 6

BASES

BACKGROUND

PORV Requirements (continued)

When a PORV is opened in an increasing pressure transient, the release of coolant will cause the pressure increase to slow and reverse. As the PORV releases coolant, the RCS pressure decreases until a reset pressure is reached and the valve is signaled to close. The pressure continues to decrease below the reset pressure as the valve closes.

RHR Suction Relief Valve Requirements

During LTOP MODES, the RHR System is operated for decay heat removal and low pressure letdown control. Therefore, the RHR suction isolation valves are open in the piping from the RCS hot legs to the inlets of the RHR pumps. While these valves are open and the RHR suction valves are open, the RHR suction relief valves are exposed to the RCS and are able to relieve pressure transients in the RCS.

The RHR suction isolation valves and the RHR suction valves must be open to make the RHR suction relief valves OPERABLE for RCS overpressure mitigation. Autoclosure interlocks are not permitted to cause the RHR suction isolation valves to close. The RHR suction relief valves are spring loaded, bellows type water relief valves with pressure tolerances and accumulation limits established by Section III of the American Society of Mechanical Engineers (ASME) Code (Ref. 3) for Class 2 relief valves.

RCS Vent Requirements

Once the RCS is depressurized, a vent exposed to the containment atmosphere will maintain the RCS at containment ambient pressure in an RCS overpressure transient, if the relieving requirements of the transient do not exceed the capabilities of the vent. Thus, the vent path must be capable of relieving the flow resulting from the limiting LTOP mass or heat input transient, and maintaining pressure below the P/T limits. The required vent capacity may be provided by one or more vent paths.

For an RCS vent to meet the flow capacity requirement, it requires removing a pressurizer safety valve, removing a PORV's internals, and disabling its block valve in the open

or physically blocking the valve stem of the PORV in the open position

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

Heat Input Type Transients

a. Inadvertent actuation of pressurizer heaters;

b. Loss of RHR cooling; or

c. Reactor coolant pump (RCP) startup with temperature asymmetry within the RCS or between the RCS and steam generators.

The following restrictions are required during the LTOP MODES to ensure that mass and heat input transients do not occur, which either of the LTOP overpressure protection means cannot handle:

a. Rendering all but one [HPI] pump [and one charging pump] incapable of injection; with all RCS cold leg temperatures ≤ 175°F

b. Deactivating the accumulator discharge isolation valves in their closed positions; and

c. Disallowing start of an RCP if secondary temperature is more than 50°F above primary temperature in any one loop. LCO 3.4.6, "RCS Loops – MODE 4," and LCO 3.4.7, "RCS Loops – MODE 5, Loops Filled," provide this protection;

The Reference 4 analyses demonstrate that either one RCS relief valve or the depressurized RCS and RCS vent can maintain RCS pressure below limits when only one [HPI] pump [and one charging pump are] is [are] actuated. Thus, the LCO allows only [one] [HPI] pump [and one charging pump] OPERABLE during the LTOP MODES. Since neither one RCS relief valve nor the RCS vent can handle the pressure transient need from accumulator injection, when RCS temperature is low, the LCO also requires the accumulators' isolation when accumulator pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature allowed in the PTLR.

The isolated accumulators must have their discharge valves closed and the valve power supply breakers fixed in their open positions. The analyses show the effect of accumulator discharge is over a narrower RCS temperature range ([175]°F and below) than that of the LCO ([275]°F and below).

(continued)

Insert B 3.4.12-2a

. . . the restrictions on mass and heat input described above are assumed. In addition, analyses demonstrate that the depressurized RCS and RCS vent ≥ 4.4 square inches (equivalent to two blocked open PORVs) can maintain RCS pressure below limits when only the restrictions on mass and heat input regarding accumulator injection capability and RCP starts described above are assumed.

BASES

APPLICABLE SAFETY ANALYSES (continued)

[RHR Suction Relief Valve Performance]

The RHR suction relief valves do not have variable pressure and temperature lift setpoints like the PORVs. Analyses must show that one RHR suction relief valve with a setpoint at or between [436.5] psig and [463.5] psig will pass flow greater than that required for the limiting LTOP transient while maintaining RCS pressure less than the P/T limit curve. Assuming all relief flow requirements during the limiting LTOP event, an RHR suction relief valve will maintain RCS pressure to within the valve rated lift setpoint, plus an accumulation ≤ 10% of the rated lift setpoint.

Although each RHR suction relief valve may itself meet single failure criteria, its inclusion and location within the RHR System does not allow it to meet single failure criteria when spurious RHR suction isolation valve closure is postulated. Also, as the RCS P/T limits are decreased to reflect the loss of toughness in the reactor vessel materials due to neutron embrittlement, the RHR suction relief valves must be analyzed to still accommodate the design basis transients for LTOP.

The RHR suction relief valves are considered active components. Thus, the failure of one valve is assumed to represent the worst case single active failure.

RCS Vent Performance

With the RCS depressurized, analyses show a vent size of 2.00 square inches is capable of mitigating the allowed LTOP overpressure transient. The capacity of a vent this size is greater than the flow of the limiting transient for the LTOP configuration, one HP pumps and one charging pump OPERABLE, maintaining RCS pressure less than the maximum pressure on the P/T limit curve.

The RCS vent size will be re-evaluated for compliance each time the P/T limit curves are revised based on the results of the vessel material surveillance.

The RCS vent is passive and is not subject to active failure.

(continued)

BASES

APPLICABLE SAFETY ANALYSES

RCS Vent Performance (continued)

The LTOP System satisfies Criterion 2 of the NRC Policy Statement.

LCO

This LCO requires that the LTOP System be OPERABLE. The LTOP System is OPERABLE when the minimum coolant input and pressure relief capabilities are OPERABLE. Violation of this LCO could lead to the loss of low temperature overpressure mitigation and violation of the Reference 1 limits as a result of an operational transient.

To limit the coolant input capability, the LCO requires [one] [HPI] pump [and one charging pump] capable of injecting into the RCS and all accumulator discharge isolation valves closed and immobilized when accumulator pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature allowed in the PTLR.

The elements of the LCO that provide low temperature overpressure mitigation through pressure relief are:

a. Two RCS relief valves, as follows:

1. Two OPERABLE PORVs; or

A PORV is OPERABLE for LTOP when its block valve is open, its lift setpoint is set to the limit required by the PTLR and testing proves its ability to open at this setpoint, and motive power is available to the two valves and their control circuits.

[2. Two OPERABLE RHR suction relief valves; or]

[An RHR suction relief valve is OPERABLE for LTOP when its RHR suction isolation valve and its RHR suction valve are open, its setpoint is at or between [436.5] psig and [463.5] psig, and testing has proven its ability to open at this setpoint.]

Consistent with the assumptions of the analysis when the RCS is not depressurized and the RCS vent is not established

INSERT B 3.4.12-5

(continued)

BASES

LCO (continued)

3. One OPERABLE PORV and one OPERABLE RHR suction relief valve; or

b. A depressurized RCS and an RCS vent.

An RCS vent is OPERABLE when open with an area of ≥ [2.07] square inches.

Each of these methods of overpressure prevention is capable of mitigating the limiting LTOP transient.

APPLICABILITY

This LCO is applicable in MODE 4 when any RCS cold leg temperature is ≤ [275]°F, in MODE 5, and in MODE 6 when the reactor vessel head is on. The pressurizer safety valves provide overpressure protection that meets the Reference 1 P/T limits above [275]°F. When the reactor vessel head is off, overpressurization cannot occur.

LCO 3.4.3 provides the operational P/T limits for all MODES. LCO 3.4.10, "Pressurizer Safety Valves," requires the OPERABILITY of the pressurizer safety valves that provide overpressure protection during MODES 1, 2, and 3 and MODE 4 above [275]°F.

Low temperature overpressure prevention is most critical during shutdown when the RCS is water solid, and a mass or heat input transient can cause a very rapid increase in RCS pressure when little or no time allows operator action to mitigate the event.

The Applicability is modified by a Note stating that accumulator isolation is only required when the accumulator pressure is more than or at the maximum RCS pressure for the existing temperature, as allowed by the P/T limit curves. This Note permits the accumulator discharge isolation valve Surveillance to be performed only under these pressure and temperature conditions.

When the RCS is depressurized and a 6 square inch RCS vent is established, the LCO restrictions regarding SI injection capability are not required to be met.

(continued)

ITS Insert B.3.4.12-6 (LTOP System)

. . . and all RCS cold leg temperatures ≥ 175°F and the requirements of LCO 3.4.12.b are not met (LCO 3.4.12.b requires the RCS to be depressurized and an RCS vent of ≥ 4.4 square inches established), or one or more SI pumps capable of injecting into the RCS with any cold leg temperature < 175°F and the requirements of LCO 3.4.12.b are not met, RCS overpressurization is possible.

ITS Insert 3.4.12-7 (LTOP System)

Not used.

BASES

ACTIONS

E.1 (continued)

The Completion Time considers the facts that only one of the RCS relief valves is required to mitigate an overpressure transient and that the likelihood of an active failure of the remaining valve path during this time period is very low.

F.1

The consequences of operational events that will overpressurize the RCS are more severe at lower temperature (Ref. 8). Thus, with one of the two RCS relief valves inoperable in MODE 5 or in MODE 6 with the head on, the Completion Time to restore two valves to OPERABLE status is 24 hours.

The Completion Time represents a reasonable time to investigate and repair several types of relief valve failures without exposure to a lengthy period with only one OPERABLE RCS relief valve to protect against overpressure events.

G.1

The RCS must be depressurized and a vent must be established within 8 hours when:

a. Both required RCS relief valves are inoperable; or

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

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

The vent must be sized ≥ 2.07 square inches to ensure that the flow capacity is greater than that required for the worst case mass input transient reasonable during the applicable MODES. This action is needed to protect the RCPB from a low temperature overpressure event and a possible brittle failure of the reactor vessel.

(continued)

ITS Insert B.3.4.12-8 (LTOP System)

In addition, when any RCS cold leg temperature is < 175 °F, it must be verified that no SI pumps are capable of injecting into the RCS.

ITS Insert B.3.4.12-9 (LTOP System)

SR 3.4.12.1 is modified by a Note indicating that this SR is only required to be met when all RCS cold leg temperatures ≥ 175°F and the requirements of LCO 3.4.12.b are not met. Below an RCS temperature of 175°F with the requirements of LCO 3.4.12.b not met, all SI pumps must be incapable of injection into the RCS as required by SR 3.4.12.2.

SR 3.4.12.2 is modified by a Note indicating that this SR is only required to be met when any RCS cold leg temperature is < 175°F and the requirements of LCO 3.4.12.b are not met. Below an RCS temperature of 175°F, all SI pumps must be incapable of injection into the RCS. Above an RCS temperature of 175 °F with the requirements of LCO 3.4.12.b not met, only one SI pump may be capable of injecting into the RCS as required by SR 3.4.12.1.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.4.12.4 (continued)

The RHR suction valve is verified to be opened every 12 hours. The Frequency is considered adequate in view of other administrative controls such as valve status indications available to the operator in the control room that verify the RHR suction valve remains open.

The ASME Code, Section XI (Ref. 8), test per Inservice Testing Program verifies OPERABILITY by proving proper relief valve mechanical motion and by measuring and, if required, adjusting the lift setpoint.

SR 3.4.12.5

The RCS vent of ≥ 2.02 square inches is proven OPERABLE by verifying its open condition either:

a. Once every 12 hours for a valve that cannot be locked.

b. Once every 31 days for a valve that is locked, sealed, or secured in position. A removed pressurizer safety valve fits this category.

The passive vent arrangement must only be open to be OPERABLE. This Surveillance is required to be performed if the vent is being used to satisfy the pressure relief requirements of the LCO 3.4.12.

SR 3.4.12.6

The PORV block valve must be verified open every 72 hours to provide the flow path for each required PORV to perform its function when actuated. The valve must be remotely verified open in the main control room. This Surveillance is performed if the PORV satisfies the LCO.

The block valve is a remotely controlled, motor operated valve. The power to the valve operator is not required removed, and the manual operator is not required locked in the inactive position. Thus, the block valve can be closed in the event the PORV develops excessive leakage or does not close (sticks open) after relieving an overpressure situation.

(continued)

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.12 Low Temperature Overpressure Protection (LTOP) System

LCO 3.4.12 An LTOP System shall be OPERABLE with the accumulator isolation valves closed and deenergized and either a or b below:

a. 1. Two power operated relief valves (PORVs) with the lift settings of ≤ 400 psig and an allowable value of ≤ 418 psig;

2. A maximum of one Safety Injection (SI) pump capable of injecting into the RCS when all cold leg temperatures are ≥ 175°F; and

3. No SI pumps capable of injecting into the RCS when any cold leg temperature is < 175°F.

OR

b. The RCS depressurized and an RCS vent of ≥ 4.4 square inches.

APPLICABILITY: MODES 4 and 5,
MODE 6 when the reactor vessel head is on.

----------NOTE----------
Accumulator isolation is only required when accumulator pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature allowed by the P/T limit curves provided in Figures 3.4.3-1 and 3.4.3-2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Two or more SI pumps capable of injecting into the RCS with all RCS cold leg temperatures ≥ 175°F. AND Requirements of LCO 3.4.12.b not met.	A.1 Initiate action to verify a maximum of one SI pump is capable of injecting into the RCS.	Immediately
B. One or more SI pumps capable of injecting into the RCS with any RCS cold leg temperature < 175°F. AND Requirements of LCO 3.4.12.b not met.	B.1 Initiate action to verify no SI pumps capable of injecting into the RCS.	Immediately
C. An accumulator isolation valve not closed and deenergized when the accumulator pressure is greater than or equal to the maximum RCS pressure for existing cold leg temperature allowed in Figures 3.4.3-1 and 3.4.3-2.	C.1 Close and deenergize affected accumulator isolation valve.	1 hour

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1 Increase RCS cold leg temperature to > 350°F. OR	12 hours
	D.2 Depressurize affected accumulator to less than the maximum RCS pressure for existing cold leg temperature allowed in Figures 3.4.3-1 and 3.4.3-2.	12 hours
E. One required PORV inoperable in MODE 4.	E.1 Restore required PORV to OPERABLE status.	7 days
F. One required PORV inoperable in MODE 5 or 6.	F.1 Restore required PORV to OPERABLE status.	24 hours

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. Two required PORVs inoperable. OR Required Action and associated Completion Time of Condition A, B, D, E, or F not met. OR LTOP System inoperable for any reason other than Condition A, B, C, D, E, or F.	G.1 Depressurize RCS and establish RCS vent of ≥ 4.4 square inches.	8 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.12.1	----------NOTE---------- Only required to be met when all RCS cold leg temperatures ≥ 175°F and requirements of LCO 3.4.12.b not met. ---------- Verify a maximum of one SI pump is capable of injecting into the RCS.	12 hours

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.4.12.2	----------NOTE---------- Only required to be met when any RCS cold leg temperature < 175°F and requirements of LCO 3.4.12.b not met. ---------- Verify no SI pumps capable of injecting into the RCS.	12 hours
SR 3.4.12.3	Verify each accumulator isolation valve is closed and deenergized.	12 hours
SR 3.4.12.4	----------NOTE---------- Only required to be met when complying with LCO 3.4.12.b. ---------- Verify RCS vent ≥ 4.4 square inches open.	12 hours for unlocked open vent valve(s) AND 31 days for locked open vent valve(s)
SR 3.4.12.5	Verify PORV block valve is open for each required PORV.	72 hours

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.12.6	Perform a COT on each required PORV, excluding actuation.	Once within 31 days prior to entering MODE 4, 5, or 6, when reactor vessel head is on AND 31 days thereafter
SR 3.4.12.7	Perform CHANNEL CALIBRATION for each required PORV actuation channel.	18 months

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BASES

BACKGROUND (continued)

requires compliance with the requirements of LCO 3.4.12 and a.2 and a.3. The pressure relief capacity requires either two redundant RCS relief valves or a depressurized RCS and an RCS vent of sufficient size. One RCS relief valve or the open RCS vent is the overpressure protection device that acts to terminate an increasing pressure event.

With minimum coolant input capability, the ability to provide core coolant addition is restricted. The LCO does not require the Chemical and Volume Control System (CVCS) deactivated or the SI actuation circuits blocked. Due to the lower pressures in the LTOP MODES and the expected core decay heat levels, the single SI pump and CVCS can provide adequate makeup and core cooling in the event of a loss of inventory or core cooling. If conditions require the use of more than one SI pump for makeup in the event of loss of inventory, then pumps can be made available through manual actions.

The LTOP System for pressure relief consists of two PORVs with reduced lift settings, or a depressurized RCS and an RCS vent of sufficient size. Two RCS relief valves are required for redundancy. One RCS relief valve has adequate relieving capability to keep from overpressurization for the required coolant input capability.

PORV Requirements

As designed for the LTOP System, each PORV is signaled to open if the RCS pressure approaches a limit determined by the LTOP actuation logic. The LTOP actuation logic monitors both RCS temperature and RCS pressure and determines when a condition not acceptable in the P/T limits is approached. The LTOP setpoint is biased to a minimum value at 350°F. The reduction in temperature below 350°F does not result in a lower setpoint. The wide range RCS temperature indications are auctioneered to select the lowest temperature signal.

The lowest temperature signal is processed through a function generator that calculates a pressure limit for that

(continued)

BASES

APPLICABLE SAFETY ANALYSES

Heat Input Type Transients (continued)

on mass and heat input described above are assumed. In addition, analyses demonstrate that the depressurized RCS and RCS vent ≥ 4.4 square inches (equivalent to two blocked open PORVs) can maintain RCS pressure below limits when only the restrictions on mass and heat input regarding accumulator injection capability and RCP starts described above are assumed. Thus, the LCO provides restrictions consistent with the mass and heat input assumptions of this analysis during the LTOP MODES. Since neither one RCS relief valve nor the RCS vent can handle the pressure transient need from accumulator injection, when RCS temperature is low, the LCO also requires the accumulators be isolated when accumulator pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature allowed in the LTOP analyses.

The analyses did not consider the accumulators as a credible mass input mechanism because there are multiple administrative controls to ensure isolation, including de-energizing valve control circuits (Ref. 7). Therefore, the accumulators must have their discharge valves closed and the valve power supply breakers in their open positions.

The P/T Limit Curve includes an instrument uncertainty margin of 60 psig. The P/T Limit Curve does not include static head and dynamic head corrections from the reactor vessel beltline pressure to the pressure transmitter. The actual instrument uncertainty has been determined to be 45.9 psig. The combination of the instrument uncertainty and static head and dynamic head corrections, is less than the 60 psig margin in the P/T Limit Curve.

The consequences of a small break loss of coolant accident (LOCA) in LTOP MODE 4 conform to 10 CFR 50.46 and 10 CFR 50, Appendix K (Refs. 8 and 9), requirements by having a maximum of one SI pump OPERABLE and SI actuation enabled.

PORV Performance

The fracture mechanics analyses show that the vessel is protected when the PORVs are set to open at or below 400 psig. The setpoints are derived by analyses that model the performance of the LTOP System, assuming the limiting LTOP

(continued)

BASES

APPLICABLE SAFETY ANALYSES

PORV Performance (continued)

transient of one SI pump injecting into the RCS. These analyses consider pressure overshoot and undershoot beyond the PORV opening and closing, resulting from signal processing and valve stroke times. The PORV setpoints at or below the derived limit ensures the Reference 1 P/T limits will be met.

The PORV setpoints will be updated when the revised reactor vessel P/T limits conflict with the LTOP analysis limits. The P/T limits are periodically modified as the reactor vessel material toughness decreases due to neutron embrittlement caused by neutron irradiation. Revised limits are determined using neutron fluence projections and the results of examinations of the reactor vessel material irradiation surveillance specimens. The Bases for LCO 3.4.3, "RCS Pressure and Temperature (P/T) Limits," discuss these examinations.

The PORVs are considered active components. Thus, the failure of one PORV is assumed to represent the worst case, single active failure.

RCS Vent Performance

With the RCS depressurized, analyses show a vent size of 4.4 square inches is capable of mitigating the allowed LTOP overpressure transient. The capacity of a vent this size is greater than the flow of the limiting transient for the LTOP configuration, two SI pumps OPERABLE and three charging pumps in operation, maintaining RCS pressure less than the maximum pressure in the LTOP analysis.

The RCS vent size will be re-evaluated for compliance each time the P/T limit curves are revised based on the results of the vessel material surveillance.

The RCS vent is passive and is not subject to active failure.

The LTOP System satisfies Criterion 2 of the NRC Policy Statement.

(continued)

BASES (continued)

LCO

This LCO requires that the LTOP System be OPERABLE. The LTOP System is OPERABLE when the minimum coolant input and pressure relief capabilities are OPERABLE. Violation of this LCO could lead to the loss of low temperature overpressure mitigation and violation of the Reference 1 limits as a result of an operational transient.

To limit the coolant input capability consistent with assumptions of the analysis when the RCS is not depressurized and RCS vent is not established, the LCO requires all accumulator discharge isolation valves closed and immobilized when accumulator pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature allowed in the LTOP analyses, no more than one SI pump be capable of injecting into the RCS with all RCS cold leg temperatures $\geq$ 175°F, and no SI pumps be capable of injecting into the RCS with any RCS cold leg temperature < 175°F.

The elements of the LCO that provide low temperature overpressure mitigation through pressure relief are:

a. Two OPERABLE PORVs; or

   A PORV is OPERABLE for LTOP when its block valve is open, its lift setpoint is set to the limit required by the LTOP analyses and testing proves its ability to open at this setpoint, and motive power is available to the two valves and their control circuits.

b. A depressurized RCS and an RCS vent.

   An RCS vent is OPERABLE when open with an area of $\geq$ 4.4 square inches. When the RCS is depressurized and a 4.4 square inch RCS vent is established, the LCO restrictions regarding SI injection capability are not required to be met.

Each of these methods of overpressure prevention is capable of mitigating the limiting LTOP transient.

(continued)

BASES (continued)

APPLICABILITY

This LCO is applicable in MODE 4, MODE 5, and in MODE 6 when the reactor vessel head is on. The pressurizer safety valves provide overpressure protection that meets the Reference 1 P/T limits above 350°F. When the reactor vessel head is off, overpressurization cannot occur.

LCO 3.4.3 provides the operational P/T limits for all MODES. LCO 3.4.10, "Pressurizer Safety Valves," requires the OPERABILITY of the pressurizer safety valves that provide overpressure protection during MODES 1, 2, and 3.

Low temperature overpressure prevention is most critical during shutdown when the RCS is water solid, and a mass or heat input transient can cause a very rapid increase in RCS pressure when little or no time allows operator action to mitigate the event.

The Applicability is modified by a Note stating that accumulator isolation is only required when the accumulator pressure is more than or at the maximum RCS pressure for the existing temperature, as allowed by the P/T limit curves. This Note permits the accumulator discharge isolation valve Surveillance to be performed only under these pressure and temperature conditions.

ACTIONS

A.1 and B.1

With two or more SI pumps capable of injecting into the RCS, and all RCS cold leg temperatures ≥ 175°F and the requirements of LCO 3.4.12.b are not met (LCO 3.4.12.b requires the RCS to be depressurized and an RCS vent of ≥ 4.4 square inches established), or one or more SI pumps capable of injecting into the RCS with any cold leg temperature < 175°F and the requirements of LCO 3.4.12.b are not met, RCS overpressurization is possible.

To immediately initiate action to restore restricted coolant input capability to the RCS reflects the urgency of removing the RCS from this condition.

(continued)

BASES

ACTIONS (continued)

C.1, D.1, and D.2

An improperly isolated accumulator requires isolation within 1 hour. This is only required when the accumulator pressure is at or more than the maximum RCS pressure for the existing temperature allowed by the P/T limit curves.

If isolation is needed and cannot be accomplished in 1 hour, Required Action D.1 and Required Action D.2 provide two options, either of which must be performed in the next 12 hours. By increasing the RCS temperature to > 350°F, an accumulator pressure of 600 psig cannot exceed the LTOP limits if the accumulators are fully injected.

Depressurizing the accumulators below the LTOP limit also gives this protection.

The Completion Times are based on operating experience that these activities can be accomplished in these time periods and on engineering evaluations indicating that an event requiring LTOP is not likely in the allowed times.

E.1

In MODE 4, with one required PORV inoperable, the PORV must be restored to OPERABLE status within a Completion Time of 7 days. Two PORVs are required to provide low temperature overpressure mitigation while withstanding a single failure of an active component.

The Completion Time considers the facts that only one of the PORVs is required to mitigate an overpressure transient and that the likelihood of an active failure of the remaining valve path during this time period is very low.

F.1

The consequences of operational events that will overpressurize the RCS are more severe at lower temperature (Ref. 10). Thus, with one of the two PORVs inoperable in MODE 5 or in MODE 6 with the head on, the Completion Time to restore two valves to OPERABLE status is 24 hours.

(continued)

BASES

ACTIONS

F.1 (continued)

The Completion Time represents a reasonable time to investigate and repair several types of relief valve failures without exposure to a lengthy period with only one OPERABLE PORV to protect against overpressure events.

G.1

The RCS must be depressurized and a vent must be established within 8 hours when:

a. Both required PORVs are inoperable; or

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

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

The vent must be sized ≥ 4.4 square inches to ensure that the flow capacity is greater than that required for the worst case mass input transient reasonable during the applicable MODES. This action is needed to protect the RCPB from a low temperature overpressure event and a possible brittle failure of the reactor vessel.

The Completion Time considers the time required to place the plant in this Condition and the relatively low probability of an overpressure event during this time period due to increased operator awareness of administrative control requirements.

SURVEILLANCE REQUIREMENTS

SR 3.4.12.1, SR 3.4.12.2, and SR 3.4.12.3

To minimize the potential for a low temperature overpressure event by limiting the mass input capability, a maximum of one SI pump is verified capable of injecting into the RCS and the accumulator discharge isolation valves are verified closed and locked out. In addition when any RCS cold leg temperature is < 175°F, it must be verified that no SI pumps are capable of injecting into the RCS.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.4.12.1, SR 3.4.12.2, and SR 3.4.12.3 (continued)

The SI pump is rendered incapable of injecting into the RCS through removing the power from the pumps by racking the breakers out under administrative control. An alternate method of LTOP control may be employed using at least two independent means to prevent a pump start or to isolate the injection flow paths into the RCS such that a single failure or single action will not result in an injection into the RCS. This may be accomplished through removal of control power fuses and at least one valve in the injection flow paths being closed, or at least one valve in the injection flow paths being locked closed or closed and deenergized.

The Frequency of 12 hours is sufficient, considering other indications and alarms available to the operator in the control room, to verify the required status of the equipment.

SR 3.4.12.1 is modified by a Note indicating that this SR is only required to be met when all RCS cold leg temperatures are ≥ 175°F and the requirements of LCO 3.4.12.b are not met. Below an RCS temperature of 175°F with the requirements of LCO 3.4.12.b not met, all SI pumps must be incapable of injection into the RCS, as required by SR 3.4.12.2.

SR 3.4.12.2 is modified by a Note indicating that this SR is only required to be met when any RCS cold leg temperature is < 175°F and the requirements of LCO 3.4.12.b are not met. Below an RCS temperature of 175°F with the requirements of LCO 3.4.12.b not met, all SI pumps must be incapable of injection into the RCS. Above an RCS temperature of 175°F, only one SI pump may be capable of injecting into the RCS as required by SR 3.4.12.1.

SR 3.4.12.4

The RCS vent of ≥ 4.4 square inches is proven OPERABLE by verifying its open condition either:

a. Once every 12 hours for a valve that cannot be locked.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.4.12.4 (continued)

b. Once every 31 days for a valve that is locked, sealed, or secured in position. A removed pressurizer safety valve fits this category.

The passive vent arrangement must only be open to be OPERABLE. This Surveillance is required to be met if the vent is being used to satisfy the pressure relief requirements of the LCO 3.4.12.b.

SR 3.4.12.5

The PORV block valve must be verified open every 72 hours to provide the flow path for each required PORV to perform its function when actuated. The valve must be remotely verified open in the main control room. This Surveillance is performed if the PORV satisfies the LCO.

The block valve is a remotely controlled, motor operated valve. The power to the valve operator is not required removed, and the manual operator is not required locked in the inactive position. Thus, the block valve can be closed in the event the PORV develops excessive leakage or does not close (sticks open) after relieving an overpressure situation.

The 72 hour Frequency is considered adequate in view of other administrative controls available to the operator in the control room, such as valve position indication, that verify that the PORV block valve remains open.

SR 3.4.12.6

Performance of a COT is required once within 31 days prior to entry in MODE 4, 5, or 6 when the reactor vessel head is on and every 31 days thereafter on each required PORV to verify and, as necessary, adjust its lift setpoint. The COT will verify the setpoint is within the allowed maximum limits in the LTOP analyses. PORV actuation could depressurize the RCS and is not required.

The Frequency of "Once within 31 days prior to entering MODE 4, 5, or 6 when the reactor vessel head is on AND 31 days

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.4.12.6 (continued)

thereafter" ensures that SR 3.4.12.6 is performed prior to entry into the MODES or specified condition of the Applicability and has been proven to be acceptable based on operating experience.

SR 3.4.12.7

Performance of a CHANNEL CALIBRATION on each required PORV actuation channel is required every 18 months to adjust the whole channel so that it responds and the valve opens within the required range and accuracy to known input.

REFERENCES

1. 10 CFR 50, Appendix G.
2. Generic Letter 88-11.
3. UFSAR, Chapter 5.
4. Letter, RNP-RA/96-0141, CP&L (R. M. Krich) to NRC, "Request for Technical Specifications Change, Conversion to Improved Standard Technical Specifications Consistent with NUREG-1431, 'Standard Technical Specifications-Westinghouse Plants,' Revision 1," August 30, 1996, Enclosure 5.
5. Letter, NG-77-1215, CP&L (B. J. Furr) to NRC (R. W. Reid), "Reactor Vessel Overpressurization Protection," October 31, 1977.
6. Letter, NG-77-1426, CP&L (E. E. Utley) to NRC (R. W. Reid), "Response to Overpressure Protection System Questions," December 15, 1977.
7. Report, "Pressure Mitigating Systems Transient Analysis Results," prepared by Westinghouse Electric Corporation for the Westinghouse Owners Group on Reactor Coolant System Overpressurization, July 1977, and Supplement, September 1977.
8. 10 CFR 50, Section 50.46.

(continued)

BASES

REFERENCES (continued)

9. 10 CFR 50, Appendix K.

10. Generic Letter 90-06.

SUPPLEMENT 6
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)" NA	
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" NA	
g.	Part 7, "Justification for Differences (JFDs) to ISTS Bases" NA	
h.	Part 8, "Proposed HBRSEP, Unit No. 2 ITS" Replace one or both pages 3.6-12	 3.6-11a 3.6-12
i.	Part 9. "Proposed Bases to HBRSEP, Unit No. 2 ITS Bases" NA	
j.	Part 10. "ISTS Generic Changes" NA	

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.3.4	Verify the isolation time of each automatic power operated containment isolation valve is within limits.	In accordance with the Inservice Testing Program
SR 3.6.3.5	Verify each automatic containment isolation valve that is not locked, sealed or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal.	18 months
SR 3.6.3.6	Verify each 42 inch inboard containment purge valve is blocked to restrict the valve from opening > 70°.	18 months

3.6 CONTAINMENT SYSTEMS

3.6.4 Containment Pressure

LCO 3.6.4 Containment pressure shall be ≥ -0.8 psig and ≤ +1.0 psig.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment pressure not within limits.	A.1 Restore containment pressure to within limits.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.1	Verify containment pressure is within limits.	12 hours

SUPPLEMENT 6
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)"	
	3.15-1(ITS 3.7.9), 3.15-1 (ITS 3.7.10)	3.15-1 (ITS 3.7.9), 3.15-1 (ITS 3.7.10)
	3.8-2 (ITS 3.7.11)	3.8-2 (ITS 3.7.11)
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 from 10 CFR 51.22	
	NA	
d.	Part 4, "Markup of NUREG-4131, Revision 1, Standard Technical Specifications-Westinghouse Plants, (ISTS)"	
	3.7-23	3.7-23
	-	3.7-23a
	3.7-26	3.7-26
	-	3.7-26a
	3.7-30	3.7-30
	-	3.7-30a
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	6	6
f.	Part 6, "Markup of ISTS Bases"	
	B 3.7-53	B 3.7-53
	-	B 3.7-53a
	B 3.7-58	B 3.7-58
	-	B 3.7-58a
	B 3.7-68	B 3.7-68
	-	B 3.7-68a
g.	Part 7, "Justification for Differences (JFDs) to ISTS Bases"	
	NA	

SUPPLEMENT 6
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"	
	3.7-3a	3.7-4
	3.7-21, 3.7-22, 3.7-23, 3.7-24, 3.7-25	3.7-21, 3.7-22, 3.7-23, 3.7-24, 3.7-25
	3.7-26, 3.7-27	3.7-26, 3.7-27
i.	Part 9. "Proposed Bases to HBRSEP, Unit No. 2 ITS Bases"	
	B 3.7-53a, B 3.7-59, B 3.7-60, B 3.7-61	B 3.7-53a, B 3.7-59, B 3.7-60, B 3.7-61
	B 3.7-63, B 3.7-64, B 3.7-65	B 3.7-63, B 3.7-64, B 3.7-65
j.	Part 10. "ISTS Generic Changes"	
	NA	

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.

[Applicability]

[LCO 3.7.9]

Specification

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 6 hours and in cold shutdown within the following 30 hours.

6

MODE 5

MODE 3

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 within the next 6 hours and cold shutdown within the following 30 hours.

A19

E

MODE 5

MODE 3

M29

During MODES 1, 2, 3, 4

A20

MODES 1, 2, 3, 4

During movement of irradiated fuel assemblies

During core alterations

L10

Add Note to Applicability

A29

Amendment No. 89, 134

Supplement 6

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]

[LCO 3.7.10]

Specification

MODES 1, 2, 3, 4, During CORE ALTERATIONS, During movement of irradiated fuel assys — L10

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 WCCUs Control Room Air Conditioning System inoperable, restore the inoperable component or train to operable status within 30 (7) days or be in at least hot shutdown within the next 6 (8) hours and in cold shutdown within the following 30 hours. — L16

(6) MODE 5 — MODE 3 — 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 within the next 6 (8) hours and cold shutdown within the following 30 hours. — M29

(6) MODE 5 — MODE 3

INSERT
Note to Applicability — A29

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] 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.

[Applicability]

A26

See 3.3.?

Insert Note to Applicability

A29

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 $\geq$ 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 A CTS provision comparable to the Note to Applicability for ITS Specification 3.7.9, 3.7.10 and 3.7.11 does not exist. The Note to Applicability for ITS Specification states that the requirements of this specification are not applicable to the movement of irradiated fuel assemblies contained within a closed spent fuel shipping cask. Comparable CTS requirements are applicable during Refueling Operations. Refueling Operations is defined 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." Consequently, movement of irradiated fuel assemblies within a closed spent fuel shipping cask is not within the applicability of CTS requirements. Therefore the addition of this Note to the Applicability is an administrative change.

CTS

3.7 PLANT SYSTEMS

3.7.(10) Control Room Emergency Filtration System (CREFS)

[3.15.1] LCO 3.7.(10) 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.

INSERT 3.7-23A

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 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 -----NOTE----- Place in toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable. ---------- Place OPERABLE CREFS train in emergency mode. OR	Immediately

(continued)

Insert 3.7-23A

---NOTE---

Not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration.

CTS

3.7 PLANT SYSTEMS

3.7.(N) Control Room Emergency Air Temperature Control (System) (CREATC)

[3.15.1] LCO 3.7.(N) Two CREATC trains shall be OPERABLE.

[3.15.1] APPLICABILITY: MODES 1, 2, 3, and 4, During movement of irradiated fuel assemblies.

INSERT 3.7-26A

ACTIONS

	CONDITION		REQUIRED ACTION	COMPLETION TIME
[3.15.1.a] [3.15.2.a]	A. One CREATC train inoperable.	A.1	Restore CREATC 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.	6 hours
		AND		
		B.2	Be in MODE 5.	36 hours
[3.15.2.a]	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 CREATC train in operation.	Immediately
		OR		
		C.2.1	Suspend CORE ALTERATIONS.	Immediately
		AND		
		C.2.2	Suspend movement of irradiated fuel assemblies.	Immediately

(continued)

Supplement 6

Insert 3.7-26A

---NOTE---

Not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration.

CTS

FBACS 3.7 (13) (1) (11) (22)

3.7 PLANT SYSTEMS

3.7.(13) Fuel Building Air Cleanup System (FBACS)

[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]~~ (32)
During movement of irradiated fuel assemblies in the fuel building.

Insert 3.7-30A

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 Be in MODE 3. AND 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 in the fuel building.	C.1 Place OPERABLE FBACS train in operation. OR C.2 Suspend movement of irradiated fuel assemblies in the fuel building.	Immediately Immediately

(continued)

Insert 3.7-30A

---NOTE---

Not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration.

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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 The Applicability for Specifications 3.7.9, 3.7.10 and 3.7.11 is modified by a Note. This Note provides clarification that the Specifications are not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration. This Note is necessary to eliminate the potential for confusion regarding the Applicability of the requirements of these Specifications to activities associated with shipments of irradiated fuel assemblies. The requirements of these Specifications are not necessary when irradiated fuel assemblies are in a spent fuel shipping cask in its full shipping configuration 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. NRC has reviewed and approved the shipments of spent fuel by rail from the H. B. Robinson Plant near Darlington, SC to the Shearon Harris Nuclear Power Plant near New Hill, North Carolina as documented in NRC's May 24, 1990 letter to Carolina Power and Light Company.

BASES

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.~~

During movement of irradiated fuel assemblies [and] CORE ALTERATIONS[s], 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 [s], or during CORE ALTERATIONS[s], 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)

Insert B3.7-53A

The Applicability is modified by a Note. This Note provides clarification that the Specification is not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration. A spent fuel shipping cask is in its full shipping configuration when the cask is properly closed, sealed and in the configuration necessary to withstand the analyzed accident condition associated with the spent fuel shipping cask. 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)

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.

INSERT B 3.7.10-2

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.

Insert B 3.7-58A

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

The Applicability is modified by a Note. This Note provides clarification that the Specification is not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration. A spent fuel shipping cask is in its full shipping configuration when the cask is properly closed, sealed and in the configuration necessary to withstand the analyzed accident condition associated with the spent fuel shipping cask. 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)

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

The Applicability is modified by a Note. This Note provides clarification that the Specification is not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration. A spent fuel shipping cask is in its full shipping configuration when the cask is properly closed, sealed and in the configuration necessary to withstand the analyzed accident condition associated with the spent fuel shipping cask. 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.

Table 3.7.1-2 (page 1 of 1)
Main Steam Safety Valve Lift Settings

VALVE NUMBER			LIFT SETTING (psig ± 3%)
STEAM GENERATOR			
A	B	C	
SV1-1A	SV1-1B	SV1-1C	1085
SV1-2A	SV1-2B	SV1-2C	1110
SV1-3A	SV1-3B	SV1-3C	1125
SV1-4A	SV1-4B	SV1-4C	1140

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.

----------NOTE----------
Not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration.

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. AND 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. OR C.2.1 Suspend CORE ALTERATIONS. AND	Immediately Immediately (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued)	C.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
D. Two CREFS trains inoperable during movement of irradiated fuel assemblies, or during CORE ALTERATIONS.	D.1 Suspend CORE ALTERATIONS. AND D.2 Suspend movement of irradiated fuel assemblies.	Immediately Immediately
E. Two CREFS trains inoperable in MODE 1, 2, 3, or 4.	E.1 Restore at least one CREFS train to OPERABLE status.	48 hours
F. Required Action and associated Completion Time of Condition E not met in MODE 1, 2, 3, or 4.	F.1 Be in MODE 3. AND F.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.9.1 Operate each CREFS train for ≥ 15 minutes.	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.7.9.2	Perform required CREFS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with VFTP
SR 3.7.9.3	Verify each CREFS train actuates on an actual or simulated actuation signal.	18 months
SR 3.7.9.4	Verify one CREFS train can maintain a positive pressure of ≥ 0.125 inches water gauge, relative to the outside atmosphere and a positive pressure relative to adjacent building areas during the emergency pressurization mode of operation at a makeup flow rate of ≤ 400 cfm.	18 months on a STAGGERED TEST BASIS

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.

----------NOTE----------
Not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration.

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.	6 hours
	AND		
	B.2	Be in MODE 5.	36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
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 CREATC WCCU train in operation. OR C.2.1 Suspend CORE ALTERATIONS. AND C.2.2 Suspend movement of irradiated fuel assemblies.	Immediately Immediately Immediately
D. Two CREATC WCCU trains inoperable during movement of irradiated fuel assemblies, or during CORE ALTERATIONS.	D.1 Suspend CORE ALTERATIONS. AND D.2 Suspend movement of irradiated fuel assemblies.	Immediately Immediately
E. Two CREATC WCCU trains inoperable in MODE 1, 2, 3, or 4.	E.1 Restore at least one CREATC WCCU train to OPERABLE status.	48 hours
F. Required Action and associated Completion Time of Condition E not met in MODE 1, 2, 3, or 4.	F.1 Be in MODE 3. AND F.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Verify each CREATC WCCU train has the capability to remove the assumed heat load.	18 months

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.

----------NOTE----------
Not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration.

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.	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
SR 3.7.11.3	Verify the FBACS can maintain a negative pressure with respect to atmospheric pressure.	18 months

BASES

APPLICABILITY (continued)

The Applicability is modified by a Note. This Note provides clarification that the Specification is not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration. A spent fuel shipping cask is in its full shipping configuration when the cask is properly closed, sealed and in the configuration necessary to withstand the analyzed accident condition associated with the spent fuel shipping cask. 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.

(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.

The Applicability is modified by a Note. This Note provides clarification that the Specification is not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration. A spent fuel shipping cask is in its full shipping configuration when the cask is properly closed, sealed and in the configuration necessary to withstand the analyzed accident condition associated with the spent fuel shipping cask. 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.

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)

ACTIONS (continued)

B.1 and B.2

consideration that the remaining train can provide the required cooling.

In MODE 1, 2, 3, or 4, if the inoperable WCCU train cannot be restored to OPERABLE status within the required Completion Time, the unit must be placed in a MODE that minimizes the 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

During movement of irradiated fuel, or during CORE ALTERATIONS, if the inoperable WCCU train cannot be restored to OPERABLE status within the required Completion Time, the OPERABLE WCCU train must be placed in operation immediately. This action ensures that the remaining train is OPERABLE, that no failures preventing automatic actuation will occur, and that active failures will be readily detected.

An alternative to Required Action C.1 is to immediately suspend activities that present a potential for releasing radioactivity that might require emergency pressurization of the control room. This places the unit in a condition that minimizes accident risk. This does not preclude the movement of fuel to a safe position.

D.1 and D.2

During movement of irradiated fuel assemblies, or during CORE ALTERATIONS, with two WCCU trains inoperable, action must be taken immediately to suspend activities that could result in a release of radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk. This does not preclude the movement of fuel to a safe position.

(continued)

BASES

ACTIONS (continued)

E.1

If both WCCU trains are inoperable in MODE 1, 2, 3, or 4, action must be taken to restore at least one WCCU train to OPERABLE status within 48 hours. The 48 hour completion time is based upon the low probability of a Design Basis Accident occurring during this time.

F.1 and F.2

In MODE 1, 2, 3, or 4, if both inoperable WCCU trains 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.

SURVEILLANCE REQUIREMENTS

SR 3.7.10.1

This SR verifies that the heat removal capability of the system is sufficient to remove the heat load assumed in the control room. This SR consists of a combination of testing and calculations. The 18 month Frequency is appropriate since significant degradation of the WCCUs is slow and is not expected over this time period.

REFERENCES

1. UFSAR, Section 6.4.

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.

The Applicability is modified by a Note. This Note provides clarification that the Specification is not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration. A spent fuel shipping cask is in its full shipping configuration when the cask is properly closed, sealed and in the configuration necessary to withstand the analyzed accident condition associated with the spent fuel shipping cask. 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.

(continued)

BASES (continued)

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.

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

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.11.3 (continued)

consistent with the guidance provided in NUREG-0800, Section 6.5.1 (Ref. 5).

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.

SUPPLEMENT 6
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	
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)"	
	3.8-18,	3.8-18
	-	3.8-18a
	3.8-28	3.8-28
	-	3.8-28a
	3.8-36, 3.8-36a	3.8-36, 3.8-36a,
	3.8-40	3.8-40
	-	3.8-40a
e.	Part 5, "Justification of Differences (JFDs) to ISTS"	
	-	9 & 10
f.	Part 6, "Markup of ISTS Bases"	
	B 3.8-5, B 3.8-38	B 3.8-5, B 3.8-38
	Insert B 3.8.2-1 (no page number)	B 3.8-38a
	B 3.8-42, B 3.8-51, B 3.8-53, B 3.8-61	B 3.8-42, B 3.8-51, B 3.8-53, B 3.8-61
	Insert B 3.8-5-1 (no page number)	B 3.8-61a
	B 3.8-64, B 3.8-73, B 3.8-76	B 3.8-64, B 3.8-73, B 3.8-76
	Insert B 3.8.8-1 (no page number)	B 3.8-76a
	B 3.8-81, B 3.8-90	B 3.8-81, B 3.8-90
	-	B 3.8-90a
g.	Part 7, "Justification for Differences (JFDs) to ISTS Bases"	
	5	5

SUPPLEMENT 6
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, 3.8-14, 3.8-15, 3.8-22, 3.8-23	3.8-13, 3.8-14, 3.8-15, 3.8-22, 3.8-23
	3.8 -30, 3.8-31, 3.8-35, 3.8-36	3.8-30, 3.8-31, 3.8-35, 3.8-36
i.	Part 9. "Proposed Bases to HBRSEP, Unit No. 2 ITS Bases"	
	B 3.8-5, B 3.8-29, B 3.8-30, B 3.8-31	B 3.8-5, B 3.8-29, B 3.8-30, B 3.8-31
	B 3.8-33, B 3.8-39, B 3.8-47, B, 3.8-48	B 3.8-33, B 3.8-39, B 3.8-47, B 3.8-48
	B 3.8-49, B 3.8-50, B 3.8-59, B 3.8-63	B 3.8-49, B 3.8-50, B 3.8-59, B 3.8-63
	B 3.8-64, B 3.8-64a, B 3.8-69, B 3.8-79	B 3.8-64, B 3.8-64a, B 3.8-69, B 3.8-79
	B 3.8-80, B 3.8-81	B 3.8-80, B 3.8-81
j.	Part 10. "ISTS Generic Changes"	
	NA	

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 AC Sources – Shutdown

[M7] 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.

[M7] APPLICABILITY: MODES 5 and 6.
During movement of irradiated fuel assemblies. (46) INSERT 3.8-18A

Note
LCO 3.0.3 is not Applicable. (31)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
[M7] 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. ----------	
[M7]	A.1 Declare affected required feature(s) with no offsite power available inoperable. OR	Immediately
[M7]	A.2.1 Suspend CORE ALTERATIONS. AND	Immediately

(continued)

Insert 3.8-18A

---NOTE---

Not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration.

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources – Shutdown

[M14] 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."

[M14] APPLICABILITY: MODES 5 and 6,
During movement of irradiated fuel assemblies.

Insert 38-28A

46

31

NOTE
LCO 3.0.3 is Not Applicable

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
[M14] A. One or more required DC electrical power subsystems inoperable.	A.1.1 Declare affected required feature(s) inoperable.	Immediately
	OR	
[M14]	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
[M14]	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	AND	
[M14]	A.2.3 Initiate action to suspend operations involving positive reactivity additions.	Immediately
	AND	
		(continued)

Insert 3.8-28A

---NOTE---

Not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration.

CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.8 Inverters – Shutdown

Inverters – Shutdown 3.8.8

AC Instrument Bus Sources (44)

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.

Insert 3.8-36A (46)

NOTE
LCO 3.0.3 is not applicable (31)

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)

Supplement 6

Insert 3.8-36A

---NOTE---

Not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration.

CTS

3.8 ELECTRICAL POWER SYSTEMS

3.8.10 Distribution Systems – Shutdown

Instrument (24)

[M23] LCO 3.8.10 The necessary portion of AC, DC, and AC ~~vital~~ bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE.

4C

Insert 3.8-40A

[M23] APPLICABILITY: MODES 5 and 6,
During movement of irradiated fuel assemblies.

31

NOTE
LCO 3.0.3 is Not Applicable

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
[M23] A. One or more required AC, DC, or AC ~~vital~~ bus electrical power distribution subsystems inoperable.	A.1 Declare associated supported required feature(s) inoperable.	Immediately
	OR	
[M23]	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
[M23]	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	AND	
[M23]	A.2.3 Initiate action to suspend operations involving positive reactivity additions.	Immediately
	AND	
		(continued)

Supplement 6

Insert 3.8-40A

---NOTE---

Not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration.

Source Range Neutron Flux monitors for Nuclear Instrumentation (ITS 3.9.2);

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 The Applicability for Specifications 3.X is modified by a Note. This Note provides clarification that the Specification is not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration. This Note is necessary to eliminate the potential for confusion regarding the Applicability of the requirements of this Specification to activities associated with shipments of irradiated fuel assemblies. The requirements of this Specification are not necessary when irradiated fuel assemblies are in a spent fuel shipping cask in its full shipping configuration 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. NRC has reviewed and approved the shipments of spent fuel by rail from the H. B. Robinson Plant near Darlington, SC to the Shearon Harris Nuclear Power

Plant near New Hill, North Carolina as documented in NRC's May 24, 1990 letter to Carolina Power and Light Company.

BASES

APPLICABILITY (continued)

b. Adequate core cooling is provided and containment OPERABILITY and other vital functions are maintained in the event of a postulated DBA.

The AC power requirements for MODES 5 and 6 are covered in LCO 3.8.2, "AC Sources - Shutdown."

ACTIONS

A.1

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

Reviewer's Note: The turbine driven auxiliary feedwater pump is only required to be considered a redundant required feature, and, therefore, required to be determined OPERABLE by this Required Action, if the design is such that the remaining OPERABLE motor or turbine driven auxiliary feedwater pump(s) is not by itself capable (without any reliance on the motor driven auxiliary feedwater pump powered by the emergency bus associated with the inoperable diesel generator) of providing 100% of the auxiliary feedwater flow assumed in the safety analysis.

A.2.1

Required Action A.2.1 which only applies if the train cannot be powered from an offsite source, is intended to provide assurance that an event coincident with a single failure of the associated DG will not result in a complete loss of safety function of critical redundant required features. These features are powered from the redundant AC electrical power train. This includes motor driven auxiliary feedwater pumps. Single train systems, such as turbine driven auxiliary feedwater pumps, may not be included.

Insert B 3.8.5A

(continued)

Supplement 6

BASES

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.

Insert B3.8-38A

The AC power requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.1.

ACTIONS

Insert B3.8.2-1

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 6

Insert B 3.8-38A

The Applicability is modified by a Note. This Note provides clarification that the Specification is not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration. A spent fuel shipping cask is in its full shipping configuration when the cask is properly closed, sealed and in the configuration necessary to withstand the analyzed accident condition associated with the spent fuel shipping cask. 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)

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the FSAR, Chapter 6, (Ref. 4) and in the FSAR, Chapter 15, (Ref. 5), assume Engineered Safety Feature (ESF) systems are OPERABLE. The DGs are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that fuel, Reactor Coolant System and containment design limits are not exceeded. These limits are discussed in more detail in the Bases for Section 3.2, Power Distribution Limits; Section 3.4, Reactor Coolant System (RCS); and Section 3.6, Containment Systems.

Since diesel fuel oil, lube oil, and the air start subsystem support the operation of the standby AC power sources, they satisfy Criterion 3 of the NRC Policy Statement.

LCO

Stored diesel fuel oil is required to have sufficient supply for 7 days of full load operation. It is also required to meet specific standards for quality. Additionally, sufficient lubricating oil supply must be available to ensure the capability to operate at full load for 7 days. This requirement, in conjunction with an ability to obtain replacement supplies within 7 days, supports the availability of DGs required to shut down the reactor and to maintain it in a safe condition for an anticipated operational occurrence (AOO) or a postulated DBA with loss of offsite power. DG day tank fuel requirements, as well as transfer capability from the storage tank to the day tank, are addressed in LCO 3.8.1, "AC Sources - Operating," and LCO 3.8.2, "AC Sources - Shutdown."

The starting air system is required to have a minimum capacity for five successive DG start attempts without recharging the air start receivers.

APPLICABILITY

The AC sources (LCO 3.8.1 and LCO 3.8.2) are required to ensure the availability of the required power to shut down the reactor and maintain it in a safe shutdown condition after an AOO or a postulated DBA. Since stored diesel fuel oil, lube oil, and the starting air subsystem support LCO 3.8.1 and LCO 3.8.2, stored diesel fuel oil, lube oil,

(continued)

BASES

BACKGROUND (continued)

The DC power distribution system is described in more detail in Bases for LCO 3.8.9, "Distribution System - Operating," and LCO 3.8.10, "Distribution Systems - Shutdown."

Each battery has adequate storage capacity to carry the required load continuously for at least 8 hours and to perform three complete cycles of the emergency loads discussed in the FSAR, Chapter [8] (Ref. 4).

Each 125 VDC battery is separately housed in a ventilated room apart from its charger and distribution centers. Each subsystem is located in an area separated physically and electrically from the other subsystem to ensure that a single failure in one subsystem does not cause a failure in a redundant subsystem. There is no sharing between redundant Class 1E subsystems, such as batteries, battery chargers, or distribution panels.

The batteries for Train A and Train B DC electrical power subsystems are sized to produce required capacity at 80% of nameplate rating, corresponding to warranted capacity at end of life cycles and the 100% design demand. Battery size is based on 125% of required capacity and, after selection of an available commercial battery, results in a battery capacity in excess of 150% of required capacity. The voltage limit is 2.13 V per cell, which corresponds to a total minimum voltage output of 128 V per battery discussed in the FSAR, Chapter [8] (Ref. 4). The criteria for sizing large lead storage batteries are defined in IEEE-485 (Ref. 5).

Each Train A and Train B DC electrical power subsystem has ample power output capacity for the steady state operation of connected loads required during normal operation, while at the same time maintaining its battery bank fully charged. Each battery charger also has sufficient capacity to restore the battery from the design minimum charge to its fully charged state within 24 hours while supplying normal steady state loads discussed in the FSAR, Chapter [8] (Ref. 4).

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the FSAR, Chapter [6] (Ref. 6), and in the FSAR, Chapter [15] (Ref. 7), assume that Engineered Safety Feature (ESF) systems are OPERABLE. The DC

(continued)

Supplement 6

BASES

APPLICABILITY (continued)

b. Adequate core cooling is provided, and containment integrity and other vital functions are maintained in the event of a postulated DBA.

The DC electrical power requirements for MODES 5 and 6 are addressed in the Bases for LCO 3.8.5, "DC Sources - Shutdown."

ACTIONS

A.1

Condition A represents one train with a loss of ability to completely respond to an event, and a potential loss of ability to remain energized during normal operation. It is, therefore, imperative that the operator's attention focus on stabilizing the unit, minimizing the potential for complete loss of DC power to the affected train. The 2 hour limit is consistent with the allowed time for an inoperable DC distribution system train.

If one of the required DC electrical power subsystems is inoperable (e.g., inoperable battery, inoperable battery charger(s), or inoperable battery charger and associated inoperable battery), the remaining DC electrical power subsystem has the capacity to support a safe shutdown and to mitigate an accident condition. Since a subsequent worst case single failure would, however, result in the complete loss of the remaining 125 VDC electrical power subsystems with attendant loss of ESF functions, continued power operation should not exceed 2 hours. The 2 hour Completion Time is based on Regulatory Guide 1.93 [Ref. 8] and reflects a reasonable time to assess unit status as a function of the inoperable DC electrical power subsystem and, if the DC electrical power subsystem is not restored to OPERABLE status, to prepare to effect an orderly and safe unit shutdown.

B.1 and B.2

If the inoperable DC electrical power subsystem 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

(continued)

(1)

BASES

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.

(57)

Insert B3.8-61A

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

Insert B3.8.5-1

(10)

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 6

Insert B 3.8-61A

The Applicability is modified by a Note. This Note provides clarification that the Specification is not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration. A spent fuel shipping cask is in its full shipping configuration when the cask is properly closed, sealed and in the configuration necessary to withstand the analyzed accident condition associated with the spent fuel shipping cask. 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.

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.6 Battery Cell Parameters

BASES

BACKGROUND

This LCO delineates the limits on electrolyte temperature, level, float voltage, and specific gravity for the DC power source batteries. A discussion of these batteries and their OPERABILITY requirements is provided in the Bases for LCO 3.8.4, "DC Sources – Operating," and LCO 3.8.5, "DC Sources – Shutdown."

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the FSAR, Chapter ~~6~~ (Ref. 1) and Chapter ~~15~~ (Ref. 2), assume Engineered Safety Feature systems are OPERABLE. The DC electrical power system provides normal and emergency DC electrical power for the diesel generators, emergency auxiliaries, and control and switching during all MODES of operation.

The OPERABILITY of the DC subsystems is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the unit. This includes maintaining at least one train of DC sources OPERABLE during accident conditions, in the event of:

a. An assumed loss of all offsite AC power or all onsite AC power; and

b. A worst case single failure.

Battery cell parameters satisfy the Criterion 3 of the NRC Policy Statement.

LCO

Battery cell parameters must remain within acceptable limits to ensure availability of the required DC power to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence or a postulated DBA. Electrolyte limits are conservatively established, allowing continued DC electrical system function even with Category A and B limits not met.

(continued)

APPLICABILITY The inverters are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients; and

b. Adequate core cooling is provided, and containment OPERABILITY and other vital functions are maintained in the event of a postulated DBA.

Inverter requirements for MODES 5 and 6 are covered in the Bases for LCO 3.8.8, "Inverters - Shutdown."

ACTIONS A.1

With a required inverter inoperable, its associated AC vital bus becomes inoperable until it is manually re-energized from its Class 1E constant voltage source transformer or inverter using internal AC source.

For this reason a Note has been included in Condition A requiring the entry into the Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating." This ensures that the vital bus is re-energized within 2 hours.

Required Action A.1 allows 24 hours to fix the inoperable inverter and return it to service. The 24 hour limit is based upon engineering judgment, taking into consideration the time required to repair an inverter and the additional risk to which the unit is exposed because of the inverter inoperability. This has to be balanced against the risk of an immediate shutdown, along with the potential challenges to safety systems such a shutdown might entail. When the AC vital bus is powered from its constant voltage source, it is relying upon interruptible AC electrical power sources (offsite and onsite). The uninterruptible inverter source to the AC vital buses is the preferred source for powering instrumentation trip setpoint devices.

(continued)

BASES (continued)

AC Instrument Bus Sources

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

AC Instrument Bus Sources

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

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.

Insert B 3.8-76A

AC Instrument Bus Sources

inverter 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

Insert B 3.8.8-1

With one or more required AC instrument bus inoperable when

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 AC Instrument Bus Sources

(continued)

Insert B 3.8-76A

The Applicability is modified by a Note. This Note provides clarification that the Specification is not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration. A spent fuel shipping cask is in its full shipping configuration when the cask is properly closed, sealed and in the configuration necessary to withstand the analyzed accident condition associated with the spent fuel shipping cask. 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

LCO (continued)

OPERABLE AC electrical power distribution subsystems require the associated buses, load centers, motor control centers, and distribution panels to be energized to their proper voltages. OPERABLE DC electrical power distribution subsystems require the associated buses to be energized to their proper voltage from either the associated battery or charger. OPERABLE [Vital] bus electrical power distribution subsystems require the associated buses to be energized to their proper voltage from the associated inverter via inverted DC voltage. Inverter using internal AC source Class 1E constant voltage transformer or the alternate feed

In addition, tie breakers between redundant safety related AC, DC, and AC [Vital] bus power distribution subsystems, if they exist, must be open. This prevents any electrical malfunction in any power distribution subsystem from propagating to the redundant subsystem, that could cause the failure of a redundant subsystem and a loss of essential safety function(s). If any tie breakers are closed, the affected redundant electrical power distribution subsystems are considered inoperable. This applies to the onsite, safety related redundant electrical power distribution subsystems. It does not, however, preclude redundant Class 1E 4.16 kV buses from being powered from the same offsite circuit.

APPLICABILITY

The electrical power distribution subsystems are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients; and

b. Adequate core cooling is provided, and containment OPERABILITY and other vital functions are maintained in the event of a postulated DBA.

Electrical power distribution subsystem requirements for MODES 5 and 6 are covered in the Bases for LCO 3.8.10, "Distribution Systems - Shutdown."

(continued)

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.

Insert B3.8-90

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)

Supplement 6

Insert B 3.8-90A

The Applicability is modified by a Note. This Note provides clarification that the Specification is not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration. A spent fuel shipping cask is in its full shipping configuration when the cask is properly closed, sealed and in the configuration necessary to withstand the analyzed accident condition associated with the spent fuel shipping cask. 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.

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 The bases are revised to reflect changes to the Specification. |

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.

----------NOTE----------
Not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration.

ACTIONS

----------NOTE----------
LCO 3.0.3 is not applicable.

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. OR	Immediately

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.1 Suspend CORE ALTERATIONS. AND A.2.2 Suspend movement of irradiated fuel assemblies. AND A.2.3 Initiate action to suspend operations involving positive reactivity additions. AND A.2.4 Initiate action to restore required offsite power circuit to OPERABLE status.	Immediately Immediately Immediately Immediately
B. The required DG inoperable.	B.1 Suspend CORE ALTERATIONS. AND B.2 Suspend movement of irradiated fuel assemblies. AND	Immediately Immediately (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.3 Initiate action to suspend operations involving positive reactivity additions. AND	Immediately
	B.4 Initiate action to restore required DG to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.2.1	----------NOTE---------- The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.8, SR 3.8.1.9, SR 3.8.1.11 through SR 3.8.1.15. ----------	
	For AC sources required to be OPERABLE, the SRs of Specification 3.8.1, "AC Sources – Operating," except SR 3.8.1.16, and SR 3.8.1.17, are applicable.	In accordance with applicable SRs

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.

---NOTE---
Not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration.

ACTIONS

---NOTE---
LCO 3.0.3 is not applicable.

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
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	AND	(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.3 Initiate action to suspend operations involving positive reactivity additions. AND A.2.4 Initiate action to restore required DC electrical power subsystems to OPERABLE status.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.5.1	----------NOTE---------- The following SRs are not required to be performed: SR 3.8.4.4, SR 3.8.4.5, and SR 3.8.4.6. ---------- For DC sources required to be OPERABLE, the following SRs are applicable: SR 3.8.4.1 SR 3.8.4.3 SR 3.8.4.5 SR 3.8.4.2 SR 3.8.4.4 SR 3.8.4.6	In accordance with applicable SRs

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.

---NOTE---
Not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration.

ACTIONS

---NOTE---
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more AC instrument bus sources inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
	AND	
		(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.3 Initiate action to suspend operations involving positive reactivity additions. AND A.2.4 Initiate action to restore AC instrument bus sources to OPERABLE status.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.8.1	Verify correct inverter voltage, frequency, and alignments to required AC instrument buses.	7 days
SR 3.8.8.2	Verify voltage availability and correct CVT alignments to required AC instrument buses.	7 days

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.

---NOTE---
Not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in tis full shipping configuration.

ACTIONS

---NOTE---
LCO 3.0.3 is not applicable.

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. OR A.2.1 Suspend CORE ALTERATIONS. AND A.2.2 Suspend movement of irradiated fuel assemblies. AND	Immediately Immediately Immediately (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.3 Initiate action to suspend operations involving positive reactivity additions.	Immediately
	AND	
	A.2.4 Initiate actions to restore required AC, DC, and AC instrument bus electrical power distribution subsystems to OPERABLE status.	Immediately
	AND	
	A.2.5 Declare associated required residual heat removal subsystem(s) inoperable and not in operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.10.1	----------NOTE---------- Actual voltage measurement is not required for the AC vital buses supplied from constant voltage transformers. ----------	
	Verify correct breaker alignments and voltage to required AC, DC, and AC instrument bus electrical power distribution subsystems.	7 days

BASES

LCO (continued)

Proper sequencing of loads, including tripping of nonessential loads, is a required function for DG OPERABILITY.

The AC sources in one train are separate and independent (to the extent possible) of the AC sources in the other train. For the DGs, separation and independence are complete.

APPLICABILITY

The AC sources are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients; and

b. Adequate core cooling is provided and containment OPERABILITY and other vital functions are maintained in the event of a postulated DBA.

The AC power requirements for MODES 5 and 6 are covered in LCO 3.8.2, "AC Sources – Shutdown."

ACTIONS

A.1

Required Action A.1, which only applies if the train cannot be powered from an offsite source, is intended to provide assurance that an event coincident with a single failure of the associated DG will not result in a complete loss of safety function of critical redundant required features. These features are powered from the redundant AC electrical power train. This includes motor driven auxiliary feedwater pumps. Single train systems, such as turbine driven auxiliary feedwater pumps, may not be included.

The Completion Time for inoperability of the offsite source is 12 hours. The rationale for the 12 hours is that Regulatory Guide 1.93 (Ref. 9) allows a Completion Time of 24 hours for two required offsite circuits inoperable when two offsite sources are incorporated into the design, based

(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 Applicability is modified by a Note. This Note provides clarification that the Specification is not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration. A spent fuel shipping cask is in its full shipping configuration when the cask is properly closed, sealed and in the configuration necessary to withstand the analyzed accident condition associated with the spent fuel shipping cask. 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.

The AC power requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.1.

ACTIONS

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4 the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving fuel assemblies while in MODE 1, 2, 3, or 4 the fuel movement is independent of reactor operations. Therefore, in either case, inability to suspend movement of irradiated fuel assemblies would not be sufficient reason to require a reactor shutdown.

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.

(continued)

BASES

ACTIONS

A.1 (continued)

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.

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.

(continued)

BASES (continued)

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.

REFERENCES None.

BASES (continued)

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the UFSAR, Chapter 6 (Ref. 1), and in the UFSAR, Chapter 15 (Ref. 2), assume Engineered Safety Feature (ESF) systems are OPERABLE. The DGs are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that fuel, Reactor Coolant System and containment design limits are not exceeded. These limits are discussed in more detail in the Bases for Section 3.2, Power Distribution Limits; Section 3.4, Reactor Coolant System (RCS); and Section 3.6, Containment Systems.

Since diesel fuel oil and the air start subsystem support the operation of the standby AC power sources, they satisfy Criterion 3 of the NRC Policy Statement.

LCO

Stored diesel fuel oil is required to have sufficient supply for 7 days of full load operation. It is also required to meet specific standards for quality. This requirement, in conjunction with an ability to obtain replacement supplies within 7 days, supports the availability of DGs required to shut down the reactor and to maintain it in a safe condition for an anticipated operational occurrence (AOO) or a postulated DBA with loss of offsite power. DG day tank fuel requirements, as well as transfer capability from the storage tank to the day tank, are addressed in LCO 3.8.1, "AC Sources – Operating," and LCO 3.8.2, "AC Sources – Shutdown."

The starting air system is required to have a minimum capacity for eight successive DG start attempts without recharging the air start receivers.

APPLICABILITY

The AC sources (LCO 3.8.1 and LCO 3.8.2) are required to ensure the availability of the required power to shut down the reactor and maintain it in a safe shutdown condition after an AOO or a postulated DBA. Since stored diesel fuel oil, and the starting air subsystem support LCO 3.8.1 and LCO 3.8.2, stored diesel fuel oil and starting air are

(continued)

BASES

BACKGROUND (continued)

The DC power distribution system is described in more detail in Bases for LCO 3.8.9, "Distribution System – Operating," and LCO 3.8.10, "Distribution Systems – Shutdown."

Each battery has adequate storage capacity to carry the required load continuously for at least 1 hour (Ref. 1).

There is no sharing between redundant subsystems, such as batteries, battery chargers, or distribution panels.

The battery for Train A DC electrical power subsystem is sized to produce required capacity at 80% of nameplate rating, corresponding to warranted capacity at end of life cycles and the 100% design demand. Battery size is based on 125% of required capacity and, after selection of an available commercial battery, results in a battery capacity in excess of 150% of required capacity. The battery for Train B DC electrical power subsystem is sized to produce required capacity at 91% of nameplate rating, corresponding to warranted capacity at end of life cycles and the 100% design demand. Battery size is based on 110% of required capacity and, after selection of an available commercial battery, results in a battery capacity in excess of 120% of required capacity. The voltage limit is 2.13 V per cell, which corresponds to a total minimum voltage output of 128 V per battery.

Each Train A and Train B DC electrical power subsystem has ample power output capacity for the steady state operation of connected loads required during normal operation, while at the same time maintaining its battery bank fully charged. Each battery charger also has sufficient capacity to restore the battery from a partial discharge condition to its fully charged state within 24 hours while supplying normal steady state loads discussed in the UFSAR, Chapter 8 (Ref. 2).

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the UFSAR, Chapter 6 (Ref. 3), and in the UFSAR, Chapter 15 (Ref. 4), assume that Engineered Safety Feature (ESF) systems are OPERABLE. The DC electrical power system provides normal and emergency DC

(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 Applicability is modified by a Note. This Note provides clarification that the Specification is not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration. A spent fuel shipping cask is in its full shipping configuration when the cask is properly closed, sealed and in the configuration necessary to withstand the analyzed accident condition associated with the spent fuel shipping cask. 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.

The DC electrical power requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.4.

(continued)

BASES (continued)

ACTIONS

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving fuel assemblies while in MODE 1, 2, 3, or 4 the fuel movement is independent of reactor operations. Therefore, in either case, inability to suspend movement of irradiated fuel assemblies would not be sufficient reason to require a reactor shutdown.

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 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.

(continued)

BASES (continued)

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.

REFERENCES

1. UFSAR, Chapter 6.
2. UFSAR, Chapter 15.

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.6 Battery Cell Parameters

BASES

BACKGROUND

This LCO delineates the limits on electrolyte temperature, level, float voltage, and specific gravity for the DC power source batteries. A discussion of these batteries and their OPERABILITY requirements is provided in the Bases for LCO 3.8.4, "DC Sources – Operating," and LCO 3.8.5, "DC Sources – Shutdown."

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the UFSAR, Chapter 6 (Ref. 1) and Chapter 15 (Ref. 2), assume Engineered Safety Feature systems are OPERABLE. The DC electrical power system provides normal and emergency DC electrical power for the diesel generators, emergency auxiliaries, and control and switching during all MODES of operation.

The OPERABILITY of the DC subsystems is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the unit. This includes maintaining at least one train of DC sources OPERABLE during accident conditions, in the event of:

a. An assumed loss of all offsite AC power or all onsite AC power; or

b. An assumed loss of offsite power and a worst case single active failure.

Battery cell parameters satisfy the Criterion 3 of the NRC Policy Statement.

LCO

Battery cell parameters must remain within acceptable limits to ensure availability of the required DC power to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence or a postulated DBA. Electrolyte limits are conservatively established,

(continued)

BASES

APPLICABILITY (continued)

b. Adequate core cooling is provided, and containment OPERABILITY and other instrument functions are maintained in the event of a postulated DBA.

Instrument Bus Sources requirements for MODES 5 and 6 are covered in the Bases for LCO 3.8.8, "AC Instrument Bus Sources – Shutdown."

ACTIONS

A.1

With a required AC Instrument Bus Sources inoperable, its associated AC instrument bus becomes inoperable until it is manually re-energized from its alternate AC source.

For this reason a Note has been included in Condition A requiring the entry into the Conditions and Required Actions of LCO 3.8.9, "Distribution Systems – Operating." This ensures that the instrument bus is re-energized within 2 hours.

Required Action A.1 allows 24 hours to fix the inoperable AC Instrument Bus Source and return it to service. The 24 hour limit is based upon engineering judgment, taking into consideration the time required to repair an AC Instrument Bus Source and the additional risk to which the unit is exposed because of the AC Instrument Bus Source inoperability. This has to be balanced against the risk of an immediate shutdown, along with the potential challenges to safety systems such a shutdown might entail. When the AC instrument bus is powered from its alternate AC source, it is relying upon interruptible AC electrical power sources (offsite). The AC Instrument Bus Source to the AC instrument buses is the preferred source for powering instrumentation trip setpoint devices.

B.1 and B.2

If the inoperable devices or components 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

(continued)

BASES

APPLICABILITY (continued)

The Applicability is modified by a Note. This Note provides clarification that the Specification is not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration. A spent fuel shipping cask is in its full shipping configuration when the cask is properly closed, sealed and in the configuration necessary to withstand the analyzed accident condition associated with the spent fuel shipping cask. 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.

AC Instrument Bus Sources requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.7.

ACTIONS

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3 or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving fuel assemblies while in MODE 1, 2, 3 or 4, the fuel movement is independent of reactor operations. Therefore, in either case, inability to suspend movement of irradiated fuel assemblies would not be sufficient reason to require a reactor shutdown.

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

(continued)

BASES

ACTIONS (continued)

A.1, A.2.1, A.2.2, A.2.3, and A.2.4

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.

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.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.8.1 (continued)

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

LCO (continued)

Feedwater (AFW) Header Discharge Valve to S/G "A", V2-16A and the Service Water System (SWS) Turbine Building Supply Valve (emergency supply), V16-16C are required to be OPERABLE to provide isolation between the separate AC distribution subsystems.

In addition, tie breakers between redundant safety related AC, DC, and AC instrument bus power distribution subsystems, if they exist, must be open. This prevents any electrical malfunction in any power distribution subsystem from propagating to the redundant subsystem, that could cause the failure of a redundant subsystem and a loss of essential safety function(s). If any tie breakers are closed, the affected redundant electrical power distribution subsystems are considered inoperable. This applies to the onsite, safety related redundant electrical power distribution subsystems. It does not, however, preclude redundant 480 V Emergency buses from being powered from the same offsite circuit.

APPLICABILITY

The electrical power distribution subsystems are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients; and

b. Adequate core cooling is provided, and containment OPERABILITY and other instrument functions are maintained in the event of a postulated DBA.

Electrical power distribution subsystem requirements for MODES 5 and 6 are covered in the Bases for LCO 3.8.10, "Distribution Systems – Shutdown."

ACTIONS

A.1

With one or more required AC buses, motor control centers, or distribution panels, except AC instrument buses, in one train inoperable, the remaining AC electrical power distribution subsystem in the other train is capable of

(continued)

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 Applicability is modified by a Note. This Note provides clarification that the Specification is not applicable to the movement of irradiated fuel assemblies contained within a spent fuel shipping cask in its full shipping configuration. A spent fuel shipping cask is in its full shipping configuration when the cask is properly closed, sealed and in the configuration necessary to withstand the analyzed accident condition associated with the spent fuel shipping cask. Irradiated fuel assemblies are protected

(continued)

BASES

APPLICABILITY (continued)

from damage and associated release of fission products by the cask and other controls associated with shipments of spent fuel assemblies.

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.

ACTIONS

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving fuel assemblies while in MODE 1, 2, 3, or 4 the fuel movement is independent of reactor operations. Therefore, in either case, inability to suspend movement of irradiated fuel assemblies would not be sufficient reason to require a reactor shutdown.

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.

(continued)

BASES

ACTIONS

A.1, A.2.1, A.2.2, A.2.3, A.2.4, and A.2.5 (continued)

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.

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 6
CONVERSION PACKAGE SECTION 5.0
PAGE INSERTION INSTRUCTIONS

Remove and insert the following pages into Enclosure 19 to Serial: RNP-RA/96-0141.

	Remove Page	Insert Page
a.	Part 1, "Markup of Current Technical Specifications (CTS)" 4.20-3	4.20-3
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" 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	

Specification 5.5

A1

ITS [5.5.12]

Objective

To ascertain that the concentration of hydrogen and oxygen in the Waste Gas Decay Tanks is maintained as low as reasonably achievable and within allowable limits.

Specification

4.20.4.1 The concentration of hydrogen and oxygen in the Waste Gas Decay Tanks shall be determined to be within the limits specified in Specification 3.16.4.1 by monitoring the waste gases in the Waste Gas Decay Tanks with the hydrogen and oxygen monitors or monitoring procedures required operable by Table 3.5-7 of Specification 3.5.3.1.

LA10

4.20.5 Waste Gas Decay Tanks (Radioactive Material)

Applicability

Applies to the Waste Gas Decay Tanks.

Objective

To ascertain that the quantity of radioactive material in the Waste Gas Decay Tanks is maintained as low as reasonably achievable and within allowable limits.

Specification

4.20.5.1 With the primary coolant activity $\geq$ 100 μCi/ml the quantity of radioactive material contained in each Waste Gas Decay Tank shall be determined to be within the limit specified in Specification 3.16.5.1 once per 24 hours when radioactive materials are being added to the tank.

Add 5.5.14

Add 5.5.15

M6

M7

Page Insertion Instruction for inserting pages into Enclosure 21 to Serial: RNP-RA/96-0141, "Compilation of CTS Pages."

Remove Page	Insert Page
3.1-4a (ITS 3.4.12)	3.1-4a (ITS 3.4.12)
3.3-5 (ITS 3.4.12)	3.3-5 (ITS 3.4-12)
3.15-1 (ITS 3.7.9)	3.15-1 (ITS 3.7.9)
3.15-1 (ITS 3.7.10)	3.15-1 (ITS 3.7.10)
3.8-2 (ITS 3.7.11)	3.8-2 (ITS 3.7.11)
4.20-3 (ITS 5.5)	4.20-3 (ITS 5.5)

ITS

Specification 3.4.12

A1

[LCO 3.4.12.a.1] [LCO 3.4.12.b]

cold leg temperature is less than or equal to 350°F and when the head is on the reactor vessel and the RCS is not vented to the containment.

[ACTION E]

1. With one PORV inoperable and T_{avg} greater than 200°F and any RCS cold leg temperature less than 350°F:

   A. Restore the inoperable PORV to OPERABLE status within 7 days; or

[ACTION G]

   B. Depressurize and vent the RCS to the CV within the next 12 hours.

8

[ACTION F]

2. With one PORV inoperable and T_{avg} less than or equal to 200°F:

   A. Restore the inoperable PORV to OPERABLE status within 24 hours; or

[ACTION G]

   B. Complete depressurization and venting of the RCS to the CV within an additional 12 hours.

8

[ACTION G]

3. With both PORVs inoperable, complete depressurization and venting of the RCS to the CV within 12 hours.

8

M24

[SR 3.4.12.4] [NOTE]

4. With the RCS vented per 1. 2. or 3. verify the vent pathway:

   A. At least once per 31 days when the pathway is provided by a valve(s) that is locked, sealed, or otherwise secured in the open position; or

   B. At least once per ~~shift~~ 12 hours.

Add LCO 3.4.12 (accumulator isolation)

Add Applicability "NOTE"

ACTIONS A, B, C, D

SR 3.4.12.1

SR 3.4.12.2

SR 3.4.12.3

M25

A23

Add LCO 3.4.12a.3

Add LCO 3.4.12.b

M37

Supplement 6

ITS

A1

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

See 3.5.1, 3.5.2, 3.5.3 & 3.5.4

All but one

L8

with the RCS temperature ≥175°

[LCO 3.4.12 a.2]

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

M26

MODE 4, 5, 6 (head on)

3.4.7
3.4.8

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

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

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.

[Applicability]

[LCO 3.7.9]

Specification

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 6 hours and in cold shutdown within the following 30 hours.

MODE 5

MODE 3

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 within the next 6 hours and cold shutdown within the following 30 hours.

MODE 5

Mode 3

A17

M29

During MODES 1, 2, 3, 4

A20

MODES 1, 2, 3, 4

During movement of irradiated fuel assemblies

During core alterations

L10

Add Note to Applicability

A29

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]

[LCO 3.7.10]

Specification

MODES 1, 2, 3, 4, During CORE ALTERATIONS, During movement of irradiated fuel assys — L10

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 inoperable, restore the inoperable component or train to operable status within 30 (7) days or be in at least hot shutdown within the next 6 (8) hours and in cold shutdown within the following 30 hours.

WCCUs — MODE 5 — MODE 3 — L16 — M28

[ACTION E]
[ACTION F]

b. With both redundant active components or trains of 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 within the next 6 (8) hours and cold shutdown within the following 30 hours.

MODE 5 — MODE 3 — M29

INSERT
Note to Applicability — A29

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.

OPERABLE and

[LCO 3.7.11] i. The Spent Fuel Building ventilation system shall be 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.

[Applicability]

A26

See 3.9.3

Insert Note to Applicability

A29

Supplement 6

ITS [5.5.12]

A1

Objective

To ascertain that the concentration of hydrogen and oxygen in the Waste Gas Decay Tanks is maintained as low as reasonably achievable and within allowable limits.

Specification

4.20.4.1 The concentration of hydrogen and oxygen in the Waste Gas Decay Tanks shall be determined to be within the limits specified in Specification 3.16.4.1 by monitoring the waste gases in the Waste Gas Decay Tanks with the hydrogen and oxygen monitors or monitoring procedures required operable by Table 3.5-7 of Specification 3.5.3.1.

LA10

4.20.5 Waste Gas Decay Tanks (Radioactive Material)

Applicability

Applies to the Waste Gas Decay Tanks.

Objective

To ascertain that the quantity of radioactive material in the Waste Gas Decay Tanks is maintained as low as reasonably achievable and within allowable limits.

Specification

4.20.5.1 With the primary coolant activity $\geq$ 100 μCi/ml the quantity of radioactive material contained in each Waste Gas Decay Tank shall be determined to be within the limit specified in Specification 3.16.5.1 once per 24 hours when radioactive materials are being added to the tank.

Add 5.5.14 — M6

Add 5.5.15 — M7