POSITION INDICATION SYSTEMS - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.3.2 The Digital Rod Position Indication System and the Demand Position Indication System shall be OPERABLE ~~and capable of determining the control rod positions within ± 12 steps~~. 13-01-LG

APPLICABILITY: MODES 1 and 2.

ACTION:*

a. With a maximum of one digital rod position indicator per ~~bank~~ group inoperable for one or more groups either: 13-02-LS

1. Determine the position of the nonindicating rod(s) indirectly by the movable incore detectors at least once per 8 hours and ~~immediately~~ within 4 hours after any motion of the nonindicating rod which exceeds 24 steps in one direction since the last determination of the rod's position, or 13-03-LS
2. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 8 hours or,

(New) Be in Mode 3 within the next 6 hours. 13-04-M

(New) With more than one Digital Rod Position System indicator per group inoperable comply with ACTION "a" above and either: 13-08-LS

1 Place the control rods under manual control immediately, monitor and Record RCS T_{avg} every hour, and restore the digital rod position indicators to OPERABLE status within 24 hours such that a maximum of one digital rod position indicator per group is inoperable, or 13-08-LS Q-3.1-20

2. Be in Mode 3 within the next 6 hours.

* Separate Action entry is allowed for each inoperable rod position indicator and each demand position indicator. 13-08-LS

TECH SPEC CHANGE		APPLICABILITY			
NUMBER	DESCRIPTION	DIABLO CANYON	COMANCHE PEAK	WOLF CREEK	CALLAWAY
12-22 M	This change provides a new ACTION in the event the allowed outage times are not met for the rod misalignment actions. Prior to this change, LCO 3.0.3 would have been entered allowing for 1 hour prior to placing the plant in HOT STANDBY within the next 6 hours. This change is more restrictive in that the 1 hour time frame is eliminated.	Yes	Yes	Yes	Yes
13-01 LG	The specific operability attributes of the DRPI system would be moved to the Bases.	Yes	Yes	Yes	Yes
13-02 LS-15	The requirement for inoperable digital rod position indication is changed from "with a maximum of one per bank" to "one per group for one or more groups".	Yes	Yes	Yes	Yes
13-03 LS-12	A 4-hour Completion Time is specified to verify rod position after movement of a rod with inoperable indicators more than 24 steps in one direction.	Yes	Yes	Yes	Yes
13-04 M	A requirement would be added to bring the plant to MODE 3 within 6 hours if the required actions and completion times were not met.	Yes	Yes	Yes	Yes
13-05 A	The proposed change would retain an action statement, currently in the plant TS, that permits continued POWER OPERATION with more than one digital rod position indicator per group inoperable.	No. See CN 13-08-LS-20.	No. See CN 13-08-LS-20.	Yes	Yes
13-06 A	The change would allow separate condition entry for each inoperable DRPI or each demand indicator.	No. See CN 13-08-LS-20.	No. See CN 13-08-LS-20.	Yes	Yes
13-07 M	The proposed modifications to the SR would verify agreement between digital and demand indicator systems prior to criticality after each removal of the reactor vessel head instead of every 12 hours. The Frequency change is based on traveler TSTF-89.	Yes	Yes	Yes	Yes
13-08 LS-20	Adds provision, from Callaway's current specifications as revised which, under certain conditions, would allow continued operation with more than one inoperable DRPI per group. ~~This is consistent with TSTF-234, WOG traveler 73.~~	Yes	Yes	No. Already in current TS.	No. Already in current TS. ~~TR-3.1-006~~ Q-3.1-20

TSTF-142	~~Not~~ Incorporated	3.1-22 ~~NA~~	NRC approved. ~~Traveler issued after cut-off date.~~ TR-3.1-003
~~WOG-73, Rev. 1 TSTF-234~~	~~Incorporated~~	~~3.1-7~~	CP-3.1-002 ~~TR-3.1-006~~ C 3.1-20
WOG-105	Incorporated	3.1-16	

3.1 REACTIVITY CONTROL SYSTEMS

~~3.1.8~~ 3.1.7 Rod Position Indication

LCO ~~3.1.8~~ 3.1.7 The ~~[~~Digital~~]~~ Rod Position Indication (~~[~~D~~]~~RPI) System and the Demand Position Indication System shall be OPERABLE. B-PS

APPLICABILITY: MODES 1 and 2.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each inoperable rod position indicator ~~per group~~ and each demand position indicator per bank.

~~3.1-7~~ ED
Q-3.1-20

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ~~[~~D~~]~~RPI per group inoperable for one or more groups.	A.1 Verify the position of the rods with inoperable position indicators indirectly by using movable incore detectors.	Once per 8 hours B-PS 3.1-12
	OR	
	A.2 Reduce THERMAL POWER to ≤ 50% RTP.	8 hours

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. More than one DRPI per group inoperable.	B.1 Place the control rods under manual control		Immediately
	AND		
	B.2 Monitor and Record RCS T_{avg}		Once per 1 hour
	AND		
	B.~~1~~3	Verify the position of the rods with inoperable position indicators indirectly by using movable incore detectors.	Once per 8 hours
	AND		
	B.~~2~~4	Restore inoperable position indicators to OPERABLE status such that a maximum of one DRPI per group is inoperable.	24 hours
~~B~~C. One or more rods with inoperable ~~position indicators~~ DRPIs have been moved in excess of 24 steps in one direction since the last determination of the rod's position.	~~B~~C.1	Verify the position of the rods with inoperable position indicators indirectly by using movable incore detectors.	4 hours
	OR		
	~~B~~C.2	Reduce THERMAL POWER to ≤ 50% RTP.	8 hours

3.1-7
Q-3.1-20

3.1-12

ED
B
3.1-17
3.1-12

full power operation, since the probability of simultaneously having a rod significantly out of position and an event sensitive to that rod position is small.

A.2

Reduction of THERMAL POWER to ≤ 50% RTP puts the core into a condition where rod position is not significantly affecting core peaking factors (Ref. ~~3~~ 2).

The allowed Completion Time of 8 hours is reasonable, based on operating experience, for reducing power to ≤ 50% RTP from full power conditions without challenging plant systems and allowing for rod position determination by Required Action A.1 above.

B.1, B.2, ~~and~~ B.3 and B.4

Q-3.1.G-1

When more than one DRPI per group fail, additional actions are necessary to ensure that acceptable power distribution limits are maintained, minimum SDM is maintained, and the potential effects of rod misalignment on associated accident analyses are limited. Placing the Rod Control System in manual assures unplanned rod motion will not occur. Together with the indirect position determination available via movable incore detectors will minimize the potential for rod misalignment.

Q-3.1-20

The immediate Completion Time for placing the Rod Control System in manual reflects the urgency with which unplanned rod motion must be prevented while in this Condition. Monitoring and recording reactor coolant T_{avg} help assure that significant changes in power distribution and SDM are avoided. The once per hour Completion Time is acceptable because only minor fluctuations in RCS temperature are expected at steady state plant operating conditions.

The position of the rods may be determined indirectly by use of the movable incore detectors. The Required Action may also be satisfied by ensuring at least once per 8 hours that F_Q satisfies LCO 3.2.1, $F_{\Delta}H$ satisfies LCO 3.2.2, and SHUTDOWN MARGIN is within the limits provided in the COLR, provided the nonindicating rods have not been moved. Verification of RCCA position once per 8 hours is adequate for allowing continued full power operation for a limited, 24 hour period, since the probability of simultaneously having a rod significantly out of position and an event sensitive to that rod position is small. The 24 hour Completion Time provides sufficient time to troubleshoot and restore the DRPI system to operation while avoiding the plant challenges associated with a shutdown without full rod position indication (Ref. 4).

CHANGE NUMBER	JUSTIFICATION
3.1-6	ITS LCO 3.1.4 would be split into two separate statements to clarify that the alignment limit is separate from OPERABILITY of the control rod. The CONDITION A wording is broadened from "untrippable" to "inoperable" to ensure the CONDITION encompasses all causes of inoperability. Previous wording was ambiguous for rods that, for instance, had slow drop times but were still trippable. These slow rods are inoperable rods, and the change clarifies the appropriate ACTIONS. The Bases are changed to reflect the changes to the LCO and CONDITION A. These changes are based on traveler TSTF-107.
3.1-7	This change to the ISTS would incorporate, into ITS LCO 3.1.7, an Action Statement that was previously approved as part of the Callaway and Wolf Creek licensing basis ~~as revised in Enclosure 2.~~ The Action Statement would permit continued POWER OPERATION for up to 24 hours with more than one Digital Rod Position Indicator per rod group inoperable. The Action Statement specifies additional required actions beyond those applicable to the condition of one DRPI per group inoperable. The Bases for this change also would be incorporated into the Bases for the plant ITS. ~~These changes are consistent with traveler TSTF-234 WOG-73, Rev. 1. The Note under the ACTIONS is changed to be consistent with the new Required Actions.~~ Q-3.1-20 TR-3.1-006
3.1-8	The Frequency for ITS SR 3.1.7.1 for comparing DRPI and group demand position would be changed from 18 Months to "Once prior to criticality after each removal of the reactor vessel head." This change makes it clear that the surveillance must be performed each time the head is removed and that it is not tied to an absolute time interval. This change is based on traveler TSTF-89.
3.1-9	This change would eliminate ISTS 3.1.2 because the SDM requirements for MODE 5 have been incorporated into Specification 3.1.1 in accordance with TSTF-136. Traveler TSTF-9, ~~Rev. 1,~~ relocated values for SDM to the COLR which removed the only difference between ISTS LCO 3.1.1 and ITST LCO 3.1.2. Differences above and below 200°F will be addressed in the COLR. Subsequent sections have been re-numbered. TR-3.1-006
3.1-10	Several surveillances (e.g., rod position deviation monitor and rod insertion limit monitor in this section) contain actions in the form of increased surveillance frequency to be performed in the event of inoperable alarms. These actions are moved from the TS to licensee controlled documents since the alarms do not themselves directly relate to the limits. This detail is not required to be in the TS to provide adequate protection of the public health and safety. Therefore, moving this detail is acceptable and is consistent with traveler TSTF-110~~, Rev. 1~~. TR-3.1-004

TECH SPEC CHANGE		APPLICABILITY			
NUMBER	DESCRIPTION	DIABLO CANYON	COMANCHE PEAK	WOLF CREEK	CALLAWAY
3.1-1	In accordance with industry traveler TSTF-9 ~~Rev. 1~~, this change would relocate the specified limits for SDM from several TS to the COLR.	Yes	Yes	Yes	Yes TR-3.1-006
3.1-2	~~Changes the Note to SR 3.1.2.1, which deals with verifying core reactivity within limits, to state that the normalization of predicted reactivity values to correspond to measured values shall be done prior to exceeding a fuel burnup of 60 EFPD after each refueling.~~ Not used.	~~Yes~~ NA	~~Yes~~ NA	~~No - Maintaining ISTS wording.~~ NA	Q-3.1-4 ~~No - Maintaining ISTS wording.~~ NA
3.1-3	~~Wolf Creek ITS LCO 3.1.6 Required Action C.1 is revised from "Be in MODE 3." to "Be in MODE 2 with K_{eff} < 1.0."~~ Not used	~~No~~ NA	~~No~~ NA	~~Yes~~ NA	~~No~~ NA Q-3.1-23
3.1-4	In accordance with industry traveler TSTF-13 ~~Rev. 1~~, ISTS SR 3.1.4.2, which requires verifying MTC within the 300 ppm boron limit, is deleted and the Note in that SR is moved to the SR that requires the lower MTC limit to be verified. The deleted SR is not a requirement separate from the lower MTC verification SR, but is essentially a clarification of when the SR for the lower MTC limit should be performed.	Yes	Yes	Yes	Yes TR-3.1-005
3.1-5	Per current TS [3.1.3.1], the words "with all" are removed from the LCO for control rod alignment limits. This ensures that the number of channels of DRPI required to be OPERABLE will not be misconstrued.	Yes	Yes	Yes	Yes
3.1-6	In accordance with traveler TSTF-107, the change provides additional clarification that the alignment limits in the LCO are separate from the OPERABILITY of a control rod.	Yes	Yes	Yes	Yes
3.1-7	An Action Statement that was previously approved as part of the current licensing basis of Callaway and Wolf Creek would be added to improved TS 3.1.7 ~~as revised in Enclosure 2~~. The Action Statement would permit operation for up to 24 hours with more than one Digital Rod Position Indicator per group inoperable.	Yes	Yes	Yes	Q-3.1-20

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: Q3.2-3 **APPLICABILITY:** CA, CP, DC, WC

REQUEST: ITS 3.2.1 Heat Flux Hot Channel Factor
CTS 3/4.2.2 Heat Flux Hot Channel Factor (All FLOG Plants)
DOC 02-06-A
JFD 3.2-12
ITS SR 3.2.1.1 & 3.2.1.2 Frequency

Comment: The ITS SR frequency has been changed from the STS frequency of 12 hours to 24 hours. This is based upon the incorrect justification that the CTS would allow 24 hours based upon ITS SR 3.0.3, since the CTS does not specify a frequency. Adopt the STS SR frequency of 12 hours.

FLOG Response (original): The change descriptions (DOC 2-06-A & JFD 3.2-12) will be revised to provide a basis for the 24 hours that is predicated on the time required to perform the surveillance. DOC 2-06-A is also been revised to be DOC 2-06-M because this change is more restrictive than the CTS.

Callaway and Wolf Creek are incorporating this change (DOC 02-06-A, JFD 3.2-12) in lieu of maintaining CTS which did not specify any completion time. DOC 02-13-LG (applicable to Callaway only) and JFD 3.2-17 are no longer used.

FLOG Response (supplement): As discussed in a telecon with the NRC staff on October 1, 1998, additional justification for the basis for the 24 hours surveillance frequency has been added to JFD 3.2-12.

Additionally, this item is related to Comment Number Q 3.2-7 for Callaway and Wolf Creek. No additional response is required for Comment Number Q 3.2-7.

ATTACHED PAGES:

Encl 6A 3

CHANGE NUMBER	JUSTIFICATION
	Condition D, the breakpoints for the applicability of the surveillances in the notes in improved TS SR 3.2.4.1 and SR 3.2.4.2 are modified to be applicable at less than or equal to 75% RTP, and greater than 75% RTP, respectively. This is an administrative change that retains current TS requirements.
3.2-10	Consistent with TSTF-110, this change moves requirements for increased surveillance frequencies in the event of inoperable alarms to licensee controlled documents. This change is acceptable because it removes requirements regarding alarms and alarm responses that are not necessary to be in the TS to protect public health and safety.
3.2-11	This change, applicable to LCO 3.2.3, Axial Flux Difference (Constant Axial Offset Control plants only), collects 3 LCO Notes and one Applicability Note into "Notes" list under the LCO. The revised presentation enhances clarity and usability. The Applicability Note is inappropriately located since it takes exception to the LCO requirement. The Note is moved to the LCO Notes. This change is consistent with traveler TSTF-164.
3.2-12	~~Consistent with current Technical Specifications,~~ The required time for completion of a flux map for determination of the heat flux hot channel factor is changed from 12 hours to 24 hours after achieving equilibrium conditions. The proposed change affects SR 3.2.1.1 and SR ~~3.2.2.1~~3.2.1.2. A flux map is taken after a power level increase greater than a specified amount to verify F_Q is within limits and to provide assurance that F_Q will remain within limits until the next required flux map is taken. Based on plant experience, the flux maps taken during power ascension provide a high degree of confidence that F_Q will be within limits at the next power plateau. As such, the exact time period allowed for performance of the surveillance, after reaching equilibrium, is not a significant safety consideration. The proposed time (24 hours) is a reasonable time period for obtaining and evaluating a flux map and then completing the procedural steps associated with this surveillance. Further, the 24 hour time period provides a reasonable limit on the length of time that the plant can operate in an unconfirmed condition. ~~the completion of the surveillance and does not allow for plant operation in an uncertain condition for a protracted time period. This change is consistent with the the Technical Specification requirements of specification 3.0.4 (and associated Bases) that allow 24 hours for the completion of a surveillance after prerequisite plant conditions are attained and for which an exception to specification 4.0.4 was provided.~~ Q-3.2-3

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: Q3.5.5-1 **APPLICABILITY:** CP, DC

REQUEST: Section 3.4 DOC 6-21 LS-35
Section 3.5 JFD 3.5-4
CTS 3.4.5.2 Action b (CP)
CTS 3.4.6.2 Action b (DC)
ITS 3.5.5 Action A

This change is a change to both the CTS and the STS and is beyond the scope of the conversion review and is generic. DOC 6-21 states that this change is consistent with WOG-84.

Comment: Please provide the current status of WOG-84. If WOG-84 is not approved by the TSTF, then this change should be withdrawn from the conversion submittal at the time of the TSTF rejection. If WOG-84 has not been acted on by the TSTF, or is approved by the TSTF, but not approved by the NRC by the time the draft safety evaluation is being prepared, then it should be withdrawn from the conversion submittal at that time. This change will not be reviewed on a plant-specific basis.

FLOG Response (original): DCPP and CPSES desire to continue to pursue the revisions proposed by this change. WOG-84 is now TSTF-236 which was approved by the TSTF on February 5, 1998.

FLOG Response (revised): Per discussions with the NRC, since TSTF-236 has not been approved, the extension in seal water injection flow AOT from 4 hours to 72 hours associated with the TSTF will be withdrawn.

ATTACHED PAGES:

CTS 3/4.4	Attachment 10
Encl 2	3/4 4-15
Encl 3A	12 and 13
Encl 3B	8
Encl 4	1, 66 and 67
ITS 3.5	Attachment 11
Encl 5A	Traveler Status sheet, 3.5-12
Encl 5B	B 3.5-33
Encl 6A	1
Encl 6B	1

LIMITING CONDITION FOR OPERATION

ACTION (Continued)

(b. cont.) With RCP seal injection flow greater than the above limit, ~~verify ≥ 100% flow equivalent to a single OPERABLE ECCS charging train is available within 4 hours and~~ reduce the flow rate to within limits within ~~72~~ 4 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours. 6-09-LS 6-21-LS Q-3.5.5-1

c. With any Reactor Coolant System Pressure Isolation Valve leakage greater than the above limit, isolate the high pressure portion of the affected system from the low pressure portion within 4 hours by use of at least ~~two~~ one closed manual, ~~or~~ deactivated automatic ~~valves~~, or check valve## and within 72 hours by the use of a second closed manual, deactivated automatic, or check valve##; or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.*** ### 6-11-LS 6-12-M 6-30-A Q-3.4.14-3

(New) With the RHR suction isolation valve interlock function inoperable, isolate the affected penetration by use of one closed manual or deactivated automatic valve within 4 hours. 6-29-LS Q-3.4.14-3 6-22-M

SURVEILLANCE REQUIREMENTS

4.4.5.2.1 Reactor Coolant System leakages shall be demonstrated to be within each of the above limits by:

~~a. Monitoring the Reactor Coolant System Leakage Detection System required by Specification 3.4.5.1 at least once per 12 hours;~~ 6-13-LS

b. Measurement of the CONTROLLED LEAKAGE to the reactor coolant pump seals when the Reactor Coolant System pressure is 2235 ± 20 psig at least once per 31 days with the modulating valve fully open. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 or 4; 6-14-A

c. Performance of a Reactor Coolant System water inventory balance at least within 12 hours after achieving steady state operation* and at least once per 72 hours thereafter during steady state operation~~, except that no more than 96 hours shall elapse between any two successive inventory balances~~. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 or 4; and 6-15-LS 6-16-LS

~~d. Monitoring the Reactor Head Flange Leakoff System at least once per 24 hours.~~ 6-17-LG

6-12-M

~~* T_{avg} being changed by less than 5°F/hour.~~

Each valve used to satisfy this action must have been verified to meet surveillance requirement 4.4.5.2.2. 6-30-A Q-3.4.14-3

Enter applicable Conditions and Required Actions for systems made inoperable by an inoperable PIV.

*** Separate Condition entry is allowed for each PIV flow path. 6-29-LS Q-3.4.14-3

LIMITING CONDITION FOR OPERATION

ACTION (Continued)

(b. cont.) With RCP seal injection flow greater than the above limit, ~~verify ≥ 100% flow equivalent to a single OPERABLE ECCS charging train is available within 4 hours and~~ reduce the flow rate to within limits within ~~72~~ 4 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours. 6-09-LS 6-21-LS Q-3.5.5-1

c. With any Reactor Coolant System Pressure Isolation Valve leakage greater than the above limit, isolate the high pressure portion of the affected system from the low pressure portion within 4 hours by use of at least ~~two~~ one closed manual, ~~or~~ deactivated automatic ~~valves~~, or check valve## and within 72 hours by the use of a second closed manual, deactivated automatic, or check valve##; or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.*** ### 6-11-LS 6-12-M 6-30-A Q-3.4.14-3

(New) With the RHR suction isolation valve interlock function inoperable, isolate the affected penetration by use of one closed manual or deactivated automatic valve within 4 hours. 6-29-LS Q-3.4.14-3

6-22-M

SURVEILLANCE REQUIREMENTS

4.4.5.2.1 Reactor Coolant System leakages shall be demonstrated to be within each of the above limits by:

~~a. Monitoring the Reactor Coolant System Leakage Detection System required by Specification 3.4.5.1 at least once per 12 hours;~~ 6-13-LS

b. Measurement of the CONTROLLED LEAKAGE to the reactor coolant pump seals when the Reactor Coolant System pressure is 2235 ± 20 psig at least once per 31 days with the modulating valve fully open. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 or 4; 6-14-A

c. Performance of a Reactor Coolant System water inventory balance at least within 12 hours after achieving steady state operation* and at least once per 72 hours thereafter during steady state operation~~, except that no more than 96 hours shall elapse between any two successive inventory balances~~. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 or 4; and 6-15-LS 6-16-LS

~~d. Monitoring the Reactor Head Flange Leakoff System at least once per 24 hours.~~ 6-17-LG

6-12-M

~~* T_{avg} being changed by less than 5°F/hour.~~

Each valve used to satisfy this action must have been verified to meet surveillance requirement 4.4.5.2.2. 6-30-A Q-3.4.14-3

Enter applicable Conditions and Required Actions for systems made inoperable by an inoperable PIV.

*** Separate Condition entry is allowed for each PIV flow path. 6-29-LS Q-3.4.14-3

CHANGE NUMBER	NSHC	DESCRIPTION
		leakage is determined by performance of a RCS water inventory balance. The initial inventory balance is required within 12 hours following RCS steady state operation and every 72 hours thereafter. Flange leakoff does not provide an indicator of pressure boundary integrity and consequently the removal of the monitoring does not involve the probability of loss of RCS water inventory.
6-17	LG	The definition of steady state is moved to a the Bases. Moving this information to the Bases is consistent with the NUREG-1431 philosophy of moving clarifying information and descriptive details out of the TS to the Bases.
6-18	LS-15	This change in conformance with NUREG-1431, Rev. 1, relaxes the requirement for PIV testing following operation in MODE 5. The previous requirement was testing following 72 hours in MODE 5 which is being amended to 7 days in MODE 5. This is acceptable on the basis that the additional time in MODE 5 will have little or no impact on the pressure retaining capability of the isolation valves while it may reduce the amount of leak testing required as the result of an unplanned shutdown.
6-19	TR-3	This change in conformance with NUREG-1431 Rev. 1, removes the specific requirement for performing the PIV surveillance prior to returning a valve to service following maintenance, repair or replacement. Explicit post-maintenance TS surveillances requirements have been deleted because these requirements are adequately addressed by administrative post-maintenance programs.
6-20	A	Consistent with NUREG-1431, IST requirements are moved to ITS 5.5.8.
6-21	~~LS-35~~	~~This change increases the RCP seal injection flow Completion Time from 4 to 72 hours., with a new added verification that at least 100% of the assumed charging flow remains available. The Bases for the seal injection flow limit relates to ensuring adequate charging flow during post-LOCA injection. The revised Actions continue to assure this basis is adequately addressed by providing an ECCS-like Required Action. ITS Specification 3.5.2 allows a 72 hour Completion Time for one ore more ECCS subsystems inoperable if at least 100% of the assumed ECCS flow is available. The seal injection flow Actions have been modified so that if the~~ Q-3.5.5-1

CHANGE NUMBER	NSHC	DESCRIPTION
		~~remaining charging flow (with some inoperability in the charging system) is greater than or equal to 100% of the assumed post-LOCA charging flow, 72 hours is allowed to restore Operability. This change is consistent with traveler WOG-84~~. Not used Q-3.5.5-1
6-22	M	This change adds a new ACTION to isolate the affected RHR penetration within 4 hours if the RHR suction isolation valve interlock function is inoperable. The function of the RHR suction valve interlock is to protect the RHR system from an intersystem LOCA by preventing the RCS hot leg suction isolation valves from inadvertently opening when the RCS pressure exceeds the interlock setpoint. Upon failure of the interlock, the current TS permits continued operation for 72 hours for restoration of the affected subsystem. The improved TS requires action within 4 hours to isolate the affected RHR subsystem. Thus the new ACTION decreases the probability of an intersystem LOCA upon the failure of the interlock. This is a more restrictive change and the new ACTION is in LCO 3.4.14 Condition C of the improved TS.
6-23	LS-25	Not Applicable to CPSES. See Conversion Comparison Table (enclosure 3B).
6-24	M	Not Applicable to CPSES. See Conversion Comparison Table (enclosure 3B).
6-25	LS-26	Not Applicable to CPSES. See Conversion Comparison Table (enclosure 3B).
6-26	LS-30	Not Applicable to CPSES. See Conversion Comparison Table (enclosure 3B).
6-27	A	Not Applicable to CPSES. See Conversion Comparison Table (enclosure 3B).
6-28	LG	Not Applicable to CPSES. See Conversion Comparison Table (enclosure 3B).
6-29	LS-38	Consistent with NUREG-1431, separate Condition entry is allowed for each flow path with excessive leakage from RCS PIVs. Although this specification provides a limit on allowable PIV leakage rate, its main purpose is to prevent overpressure failure of the low pressure portions of connecting systems. The leakage limit is an indication that the PIVs between the RCS and the connecting systems are degraded or degrading. Each flow Q-3.4.14-3

TECH SPEC CHANGE		APPLICABILITY			
NUMBER	DESCRIPTION	DIABLO CANYON	COMANCHE PEAK	WOLF CREEK	CALLAWAY
6-16 LS-14	This change removes the requirement for monitoring the reactor head flange leakoff system.	Yes	Yes	Yes	Yes
6-17 LG	The definition of steady state is moved to Bases.	Yes -	Yes	No - WCGS does not have this definition.	No - Callaway does not have this definition.
6-18 LS-15	This change relaxes the requirement for PIV testing following operation in MODE 5. The previous requirement was testing following 72 hours in MODE 5 which is revised to 7 days in MODE 5.	No - Not part of current DCPP TS.	Yes	Yes	No - already in current TS per Amendment 105.
6-19 TR-3	This change removes the specific requirement for performing the PIV surveillance prior to returning a valve to service following maintenance, repair or replacement.	Yes	Yes	Yes	Yes
6-20 A	IST requirements are moved to Section 5 of the improved TS.	Yes	Yes	No - WCGS does not have this requirement.	No - Callaway does not have this requirement.
6-21 ~~LS-35~~	~~This change increases the RCP seal injection flow Completion Time from 4 to 72 hours., with a new added verification that at least 100% of the assumed charging flow remains available.~~	~~Yes~~NA	~~Yes~~NA	~~No - See CN 6-28-LG~~ NA	~~No - See CN 6-28-LG~~ NA Q-3.5.5-1
6-22 M	This change adds a new ACTION to isolate the affected RHR penetration within 4 hours if the RHR suction isolation valve interlock function is inoperable.	No - Not part of current DCPP TS.	Yes	Yes	Yes
6-23 LS-25	The leakage detection system specification is revised such that the provisions of 3.0.4 are not applicable, and two monitoring systems can be inoperable without invoking LCO 3.0.3..	Yes	No - The non-applicability of 3.0.4 is already part of the current TS.	Yes	Yes Q-3.4.15-1
6-24 M	Revises ACTION to require going to COLD SHUTDOWN rather than HOT SHUTDOWN with an RCS pressure less than 600 psig.	No - Not part of current DCPP TS.	No - The 600 psig action is not part of the current TS.	Yes	Yes

NO SIGNIFICANT HAZARDS CONSIDERATIONS (NSHC)
CONTENTS

Q-3.5.5-1

Q-3.4.14-3

IV. SPECIFIC NO SIGNIFICANT HAZARDS CONSIDERATIONS

NSHC LS-35
10 CFR 50.92 EVALUATION
FOR
TECHNICAL CHANGES THAT IMPOSE LESS RESTRICTIVE
REQUIREMENTS WITHIN THE TECHNICAL SPECIFICATIONS

Q-3.5.5-1

This change increases the seal injection flow Completion Time from 4 to 72 hours., with a new added verification that at least 100% of the assumed charging flow remains available. The Bases for seal injection flow relate the limit to ensuring adequate charging flow during post-LOCA injection. The revised Actions continue to assure this basis is adequately addressed by providing an ECCS-like Required Action. ITS Specification 3.5.2 allows a 72 hour Completion Time for one ore more ECCS subsystems inoperable if at least 100% of the assumed ECCS flow is available. The seal injection flow Actions have been modified so that if the remaining charging flow (with some inoperability in the charging system) is greater than or equal to 100% of the assumed post-LOCA charging flow, 72 hours is allowed to restore Operability. This change is consistent with traveler W0G-84.

This proposed TS change has been evaluated and it has been determined that it involves no significant hazards consideration. This determination has been performed in accordance with the criteria set forth in 10 CFR 50.92(c) as quoted below:

"The Commission may make a final determination, pursuant to the procedures in 50.91, that a proposed amendment to an operating license for a facility licensed under 50.21 (b) or 50.22 or for a testing facility involves no significant hazards consideration, if operation of the facility in accordance with the proposed amendment would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated; or

2. Create the possibility of a new or different kind of accident from any accident previously evaluated; or

3. Involve a significant reduction in a margin of safety."

The following evaluation is provided for the three categories of the significant hazards consideration standards:

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

The proposed change revises the completion time for restoring seal injection flow from 4 hours to 8 72 hours. The basis of this completion time is to ensure availability of the assumed post-LOCA charging flow. To compensate for the increased completion time, a new requirement is added to verify, within 4

NSHC LS-35
(continued)

hours, that at least 100% of the assumed post-LOCA charging flow is available. Since the charge continues to ensure 100% of the assumed charging flow is available, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

Q-3.5.5-1

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

There are no hardware changes nor are there any changes in the method by which any safety-related plant system performs its safety function. Since the change continues to ensure 100% of the assumed charging flow is available, no new accident scenarios, transient precursors, failure mechanisms, or limiting single failures are introduced. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

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

The proposed change does not affect the acceptance criteria for any analyzed event. There will be no effect on the manner in which safety limits or limiting safety system settings are determined nor will there be any effect on those plant systems necessary to assure the accomplishment of protection functions. Since the change continues to ensure 100% of the assumed charging flow is available there will be no impact on any margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

Based on the above evaluation, it is concluded that the activities associated with NSHC "LS-35" resulting from the conversion to the improved TS format satisfy the no significant hazards consideration standards of 10 CFR 50.92(c); and accordingly, a no significant hazards consideration finding is justified.

INDUSTRY TRAVELERS APPLICABLE TO SECTION 3.5

TRAVELER #	STATUS	DIFFERENCE #	COMMENTS	
TSTF-90, Rev 1	Incorporated	3.5-6	Approved by the NRC.	TR-3.5-001
TSTF-117	Incorporated	3.5-1	Approved by the NRC.	TR-3.5-001
TSTF-153	Incorporated	3.5-8	Approved by the NRC.	TR-3.5-001
~~TSTF-155~~	~~corporated~~	~~NA~~	~~Not NRC approved as of traveler cut-off date.~~	TR-3.5-001
~~WOG-84TSTF-236~~	~~Incorporated~~	~~3.5-4~~	~~DCPP and CPSES only.~~	~~TR-3.5-001~~ Q-3.5.5-1

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.5 Seal Injection Flow

LCO 3.5.5 Reactor coolant pump seal injection flow shall be ≤ 40 gpm with RCS ~~centrifugal charging pump discharge header~~ pressure ≥ ~~2400~~ 2215 psig and ≤ 2255 psig and the charging flow control valve full open.

B

3.5-5

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Seal injection flow not within limit.	~~A.1 Verify ≥ 100% flow equivalent to a single OPERABLE ECCS charging train is available~~	~~4 hours~~
	~~AND~~ A.1 ~~A.21~~ Adjust manual seal injection throttle valves to give a flow within limit with ~~centrifugal charging pump discharge header~~ RCS pressure ≥ ~~2400~~ 2215 psig and ≤ 2255 psig and the charging flow control valve full open.	4 ~~4 72~~ hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 12 hours

3.5-4
Q-3.5.5-1

3.5-4
Q-3.5.5-1

3.5-5

B

BASES

APPLICABILITY

In MODES 1, 2, and 3, the seal injection flow limit is dictated by ECCS flow requirements, which are specified for MODES 1, 2, 3, and 4. The seal injection flow limit is not applicable for MODE 4 and lower, however, because high seal injection flow is less critical as a result of the lower initial RCS pressure and decay heat removal requirements in these MODES. Therefore, RCP seal injection flow must be limited in MODES 1, 2, and 3 to ensure adequate ECCS performance.

ACTIONS

Q-3.5.5-1

A.1 ~~and A.2~~

With the seal injection flow exceeding its limit, the amount of charging flow available to the RCS may be reduced. Under this Condition, action must be taken to restore the flow to below its limit. ~~Required Action A.1 ensures that within 4 hours the remaining available ECCS charging flow (without assuming an additional single failure) is ≥ 100% of the assume post-LOCA charging flow. Required Action A.2 then allows~~ The operator ~~has~~ has ~~4~~ 72 4 hours from the time the flow is known to be above the limit ~~but still allowing 100% of the assumed post-LOCA ECCS charging flow,~~ to correctly position the manual valves and thus be in compliance with the accident analysis. The Completion Time minimizes the potential exposure of the plant to a LOCA with insufficient injection flow and provides a reasonable time to restore seal injection flow within limits. This time is ~~consistent~~ conservative ~~conservative~~ with respect to ~~respect to~~ the Completion Times ~~for one train of ECCS, of other ECCS LCOs; it is based on operating experience and is sufficient for taking corrective actions by operations personnel.~~ of other ECCS LCOs; it is based on operating experience and is sufficient for taking corrective actions by operations personnel.

B.1 and B.2

When the Required Actions cannot be completed within the required Completion Time, a controlled shutdown must be initiated. The Completion Time of 6 hours for reaching MODE 3 from MODE 1 is a reasonable time for a controlled shutdown, based on operating experience and normal cooldown rates, and does not challenge plant safety systems or operators. Continuing the plant shutdown begun in Required Action B.1, an additional 6 hours is a reasonable time, based on operating experience and normal cooldown rates, to reach MODE 4, where this LCO is no longer applicable.

(continued)

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1431

NUREG-1431 Section 3.5

This enclosure contains a brief discussion/justification for each marked-up technical change to NUREG-1431, Revision 1, to make them plant-specific or to incorporate generic changes resulting from the Industry/NRC generic change process. The change numbers are referenced directly from the NUREG-1431 mark-ups. For enclosures 3A, 3B, 4, 6A and 6B, text in brackets "[ ]" indicates the information is plant specific and is not common to all the Joint Licensing Subcommittee (JLS) plants. Empty brackets indicate that other JLS plants may have plant specific information in that location.

CHANGE NUMBER	JUSTIFICATION
3.5-1	Replaces reference to the "pressurizer pressure" with a reference to the "RCS pressure" in the APPLICABILITY, Required Action C.2, and SR 3.5.1.5. Required Action C.2 requires reducing pressurizer pressure to less than 1000 psig. However, pressurizer pressure instrumentation does not have the range to read that pressure. Consequently RCS pressure instrumentation is used. For the purposes of this LCO, the use of RCS pressure is equivalent. This is consistent with traveler TSTF-117.
3.5-2	Not Applicable to CPSES. See Conversion Comparison Table (enclosure 6B).
3.5-3	Adds the word "mechanical" with regard to throttle valve position stop consistent with current TS. These valves have mechanical stops that maintain the valves in position for proper ECCS performance.
3.5-4	~~This change increases the RCP seal injection flow Completion Time from 4 to 72 hours., with a new added verification that at least 100% of the assumed charging flow remains available. The Bases for seal injection flow relate the limit to ensuring adequate charging flow during post-LOCA injection. The revised Actions continue to assure this basis is adequately addressed by providing an ECCS-like Required Action. ITS Specification 3.5.2 allows a 72 hour Completion Time for one ore more ECCS subsystems inoperable if at least 100% of the assumed ECCS flow is available. The seal injection flow Actions have been modified so that if the remaining charging flow (with some inoperability in the charging system) is greater than or equal to 100% of the assumed post-LOCA charging flow, 72 hours is allowed to restore Operability. This change is consistent with traveler TSTF-236 WOG-84.~~ Not used Q-3.5.5-1 ~~TR-3.5-001~~
3.5-5	Deleted reference to centrifugal charging pump (CCP) discharge header pressure from the LCO and ACTION A to reflect CTS [3.4.5.2]. A description is added to the Bases which provides the methodology for adjusting the seal injection throttle valves consistent with plant specific analyses.

CONVERSION COMPARISON TABLE FOR DIFFERENCES FROM NUREG-1431, SECTION 3.5

TECH SPEC CHANGE		APPLICABILITY			
NUMBER	DESCRIPTION	DIABLO CANYON	COMANCHE PEAK	WOLF CREEK	CALLAWAY
3.5-1	Replaced "pressurizer pressure" with "RCS pressure."	Yes	Yes	Yes	Yes
3.5-2	The Completion Time of LCO 3.5.1, CONDITION B is changed from 1 hour to 24 hours to reflect the current TS.	No - Not part of current TS	No - Not part of current TS	Yes - License Amendment pending.	Yes - Current TS per OL Amendment No. 91.
3.5-3	Adds the word "mechanical" with regard to throttle valve position stop consistent with the current TS.	Yes	Yes	Yes	Yes
3.5-4	~~This change increases the RCP seal injection flow Completion Time from 4 to 72 hours., with a new added verification that at least 100% of the assumed charging flow remains available.~~ Not used	~~Yes~~ NA	~~Yes~~ NA	~~No - LCO 3.5.5 is not applicable.~~ NA	~~No - LCO 3.5.5 is not applicable.~~ NA Q.3.5.5-1
3.5-5	Deleted reference to centrifugal charging pump discharge header pressure to reflect current TS.	Yes	Yes	No - Not part of current TS	No - Not part of current TS
3.5-6	SR 3.5.3.1 Note is moved to the LCO per traveler TSTF-90.	Yes	Yes	Yes	Yes
3.5-7	Not used	N/A	N/A	N/A	N/A
3.5-8	Moves the Notes from the "APPLICABILITY" to the "LCO". Also revises the wording in Note 2 from "declared inoperable" to "made incapable of injecting".	No - Not part of current TS.	Yes	Yes	Yes
3.5-9	The seal injection/return valves (BGV0198-BGV0202) are included in ITS SR 3.5.2.7 since they are included in CTS 4.5.2.g.2).	No - Not part of current TS.	No - Not part of current TS.	Yes	Yes

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: CA-3.5-001 **APPLICABILITY:** CA, CP, DC, WC

REQUEST (new for CPSES): The following Licensee initiated change was submitted by all the FLOG plants except CPSES as part of the response to the RAI on Section 3.5. CPSES has reconsidered its position and has determined that CA-3.5-001 applies to CPSES. However, it has been modified to be consistent with the CPSES licensing basis.

REQUEST (modified version of what was submitted by CA, DC and WC): Revise the ITS 3.5.1 Bases to address Westinghouse NSAL 97-003 with regard to the relationship of permissive P-11 to the accumulator isolation valves. The discussion of P-11 is not relevant to this LCO which is applicable above 1000 psig. Nor is the IEEE 279-1971 "operating bypass" discussion relevant or correct per the current applicability of TS 3.5.1. The TS LCO applicability is in MODE 3 above 1000 psig for small Break LOCA whereas the P-11 interlock and SI signal are for Large Break LOCA in MODES 1 and 2 above approximately 2000 psig.

ATTACHED PAGES:

Encl 5B B 3.5-1, B 3.5-2, B 3.5-5, B 3.5-8, and B 3.5-9

B 3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

B 3.5.1 Accumulators

BASES

BACKGROUND

The functions of the ECCS accumulators are to supply water to the reactor vessel during the blowdown phase of a loss of coolant accident (LOCA), to provide inventory to help accomplish the refill phase that follows thereafter, and to provide Reactor Coolant System (RCS) makeup for a small break LOCA.

The blowdown phase of a large break LOCA is the initial period of the transient during which the RCS departs from equilibrium conditions, and heat from fission product decay, hot internals, and the vessel continues to be transferred to the reactor coolant. The blowdown phase of the transient ends when the RCS pressure falls to a value approaching that of the containment atmosphere.

In the refill phase of a LOCA, which immediately follows the blowdown phase, reactor coolant inventory has vacated the core through steam flashing and ejection out through the break. The core is essentially in adiabatic heatup. The balance of accumulator inventory is then available to help fill voids in the lower plenum and reactor vessel downcomer so as to establish a recovery level at the bottom of the core and ongoing reflood of the core with the addition of safety injection (SI) water.

The accumulators are pressure vessels partially filled with borated water and pressurized with nitrogen gas. The accumulators are passive components, since no operator or control actions are required in order for them to perform their function. Internal accumulator tank pressure is sufficient to discharge the accumulator contents to the RCS, if RCS pressure decreases below the accumulator pressure.

Each accumulator is piped into an RCS cold leg via an accumulator line and is isolated from the RCS by a motor operated isolation valve and two check valves in series. ~~The motor operated isolation valves are interlocked by P-11 with the pressurizer pressure measurement channels to ensure that the valves will automatically open as RCS pressure increases to above the permissive circuit P-11 setpoint and the main control board switch is in the "auto" position. [Ref. 6]~~

CA-3.5-001

BASES

BACKGROUND
(continued)

~~This interlock also prevents inadvertent closure of the valves during normal operation prior to an accident. The valves will automatically open, however, as a result of an SI signal. These features ensure that the valves meet the requirements of the Institute of Electrical and Electronic Engineers (IEEE) Standard 279-1971 (Ref. 1) for "operating bypasses" and that the accumulators will be available for injection without reliance on operator action.~~

CA-3.5-001

The motor operated isolation valves are required to be open with power removed in MODE 3 above 1000 psig to satisfy BTP ICSB-18 [Ref.s 1 and 6] for small break LOCAs. They are required to be open with power removed in MODES 1 and 2 for large break LOCA.

The accumulator size, water volume, and nitrogen cover pressure are selected so that three of the four accumulators are sufficient to partially cover the core before significant clad melting or zirconium water reaction can occur following a LOCA. The need to ensure that three accumulators are adequate for this function is consistent with the LOCA assumption that the entire contents of one accumulator will be lost via the RCS pipe break during the blowdown phase of the LOCA.

APPLICABLE
SAFETY ANALYSES

The accumulators are assumed OPERABLE in both the large and small break LOCA analyses at full power (Ref. 2). These are the Design Basis Accidents (DBAs) that establish the acceptance limits for the accumulators. Reference to the analyses for these DBAs is used to assess changes in the accumulators as they relate to the acceptance limits.

In performing the LOCA calculations, conservative assumptions are made concerning the availability of ECCS flow. In the early stages of a LOCA, with or without a loss of offsite power, the accumulators provide the sole source of makeup water to the RCS. The assumption of loss of offsite power is required by regulations and conservatively imposes a delay wherein the ECCS pumps cannot deliver flow until the emergency diesel generators start, come to rated speed, and go through their timed loading sequence. In cold leg break scenarios, the entire contents of one accumulator are assumed to be lost through the break.

The limiting large break LOCA is a double ended guillotine break at the discharge of the reactor coolant pump. During this event, the accumulators discharge to the RCS as soon as RCS pressure decreases to below accumulator pressure.

BASES

APPLICABLE SAFETY ANALYSES (Continued)

The effects on containment mass and energy releases from the accumulators are accounted for in the appropriate analyses (Refs. 2 and 4).

CA-3.5-002

The accumulators satisfy Criterion 2 and 3 of 10CFR50.36(c)(2)(ii). ~~the NRC Policy Statement~~

LCO

The LCO establishes the minimum conditions required to ensure that the accumulators are available to accomplish their core cooling safety function following a LOCA. Four accumulators are required to ensure that 100% of the contents of three of the accumulators will reach the core during a LOCA. This is consistent with the assumption that the contents of one accumulator spill through the break. If less than three accumulators are injected during the blowdown phase of a LOCA, the ECCS acceptance criteria of 10 CFR 50.46 (Ref. 3) could be violated.

For an accumulator to be considered OPERABLE, the isolation valve must be fully open, power removed above a nominal RCS pressure of ~~[2000]~~ 1000 psig, and the limits established in the SRs for contained volume, boron concentration, and nitrogen cover pressure must be met.

APPLICABILITY

In MODES 1 and 2, and in MODE 3 with RCS pressure > 1000 psig, the accumulator OPERABILITY requirements are based on full power operation. Although cooling requirements decrease as power decreases, the accumulators are still required to provide core cooling as long as elevated RCS pressures and temperatures exist.

This LCO is only applicable at pressures > 1000 psig. At pressures ≤ 1000 psig, the rate of RCS blowdown is such that the ECCS pumps can provide adequate injection to ensure that peak clad temperature remains below the 10 CFR 50.46 (Ref. 3) limit of 2200°F.

In MODE 3, with RCS pressure ≤ 1000 psig, and in MODES 4, 5, and 6, the accumulator motor operated isolation valves are closed to isolate the accumulators from the RCS. Accumulator isolation is only required when the accumulator pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature, as allowed by the P/T curves provided in the PTLR. This allows RCS cooldown and depressurization without discharging the accumulators into the RCS or requiring depressurization of the accumulators.

CA-3.5-001

(continued)

the concentration can be changed. The 31 day Frequency is adequate to identify changes that could occur from mechanisms such as stratification or inleakage. Sampling the affected accumulator within 6 hours after a 1% ~~(101 gallon)~~ volume increase (101 gallons) will identify whether inleakage has caused a reduction in boron concentration to below the required limit. It is not necessary to verify boron concentration if the added water inventory is from the refueling water storage tank (RWST), and the RWST has not been diluted since verifying that its boron concentration satisfies SR 3.5.4.3, because the water contained in the RWST is nominally within the accumulator boron concentration requirements. This is consistent with the recommendation of NUREG-1366 (Ref. 5).

SR 3.5.1.5

Verification every 31 days that power is removed from each accumulator isolation valve operator when the ~~pressurizer~~ RCS pressure is > ~~2000~~ 1000 psig ensures that an active failure could not result in the undetected closure of an accumulator motor operated isolation valve. If this were to occur, only two accumulators would be available for injection given a single failure coincident with a LOCA. Since power is removed under administrative control, the 31 day Frequency will provide adequate assurance that power is removed.

This SR allows power to be supplied to the motor operated isolation valves when ~~pressurizer~~ RCS pressure is ≤ ~~2000~~ 1000 psig. ~~, thus allowing operational flexibility by avoiding unnecessary delays to manipulate the breakers during plant startups or shutdowns. Even with power supplied to the valves, inadvertent closure is prevented by the RCS pressure interlock associated with the valves.~~

~~Should closure of a valve occur in spite of the interlock, the SI signal provided to the valves would open a closed valve in the event of a LOCA.~~

CA-3.5-001

(continued)

BASES

REFERENCES

1. ~~IEEE Standard 279-1971.~~ BTP ICSB-18 (Rev. 2, July 1981) "Application of the single failure criterion to manually controlled electrically operated valves.
2. FSAR, Chapter ~~[6]~~.
3. 10 CFR 50.46.
4. FSAR, Chapter ~~[15]~~.
5. NUREG-1366, February 1990.
6. ~~FSAR, Section 7.6.4~~

CA-3.5-001

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: CA-3.5-002 **APPLICABILITY:** CA, CP, DC, WC

REQUEST (original): Revise ITS 3.5.4 Bases to indicate that the RWST LCO, by virtue of its temperature, volume, and boron concentration limits, also satisfies Criterion 2 (initial conditions of accident analyses).

REQUEST (revised): Revise various additional ITS Bases regarding the correct application of Criterion 2 of 10CFR50.36(c)(2)(ii). These changes are consistent with the attachment to a May 9, 1988 letter from T. E, Murley (N RC) to R. A. Newton (WOG) entitled "NRC Staff Review of NSSS Vendor Owners Groups' Application of the Com[illegible]on's Interim Policy Statement Criteria to Standard Technical Specifications."

1. Revise ITS 3.5.1 Bases to indicate that the Accumulators LCO, by virtue of its pressure, volume, and boron concentration limits, also satisfies Criterion 2 (initial conditions of accident analyses),

2. Revise ITS 3.5.4 Bases to indicate that the RWST LCO, by virtue of its temperature, volume, and boron concentration limits, also satisfies Criterion 2 (initial conditions of accident analyses),

3. Revise ITS 3.6.7 Bases to indicate that the Recirculation Fluid pH Control (RFPC) System, by virtue of its TSP-C depth limit which ensures a minimum equilibrium sump pH of 7.1, also satisfies Criterion 2 (initial conditions of accident analyses). (Callaway only)

4. Revise ITS 3.7.6 Bases to indicate that the CST (and FWST for DCPP) LCO, by virtue of its water volume limit, also satisfies Criterion 2 (initial conditions of accident analyses).

ATTACHED PAGES:

Attachment 11, CTS 3/4.5 - ITS 3.5

Encl 5B B 3.5-5 and B 3.5-28

Attachment 13, CTS 3/4 7 - ITS 3.7

Encl 5B B 3.7-36

BASES

APPLICABLE SAFETY ANALYSES (Continued)

The effects on containment mass and energy releases from the accumulators are accounted for in the appropriate analyses (Refs. 2 and 4).

CA-3.5-002

The accumulators satisfy ~~Criterion~~ Criteria 2 and 3 of 10CFR50.36(c)(2)(ii). ~~the NRC Policy Statement~~

LCO

The LCO establishes the minimum conditions required to ensure that the accumulators are available to accomplish their core cooling safety function following a LOCA. Four accumulators are required to ensure that 100% of the contents of three of the accumulators will reach the core during a LOCA. This is consistent with the assumption that the contents of one accumulator spill through the break. If less than three accumulators are injected during the blowdown phase of a LOCA, the ECCS acceptance criteria of 10 CFR 50.46 (Ref. 3) could be violated.

For an accumulator to be considered OPERABLE, the isolation valve must be fully open, power removed above a nominal RCS pressure of ~~[2000]~~ 1000 psig, and the limits established in the SRs for contained volume, boron concentration, and nitrogen cover pressure must be met.

APPLICABILITY

In MODES 1 and 2, and in MODE 3 with RCS pressure > 1000 psig, the accumulator OPERABILITY requirements are based on full power operation. Although cooling requirements decrease as power decreases, the accumulators are still required to provide core cooling as long as elevated RCS pressures and temperatures exist.

This LCO is only applicable at pressures > 1000 psig. At pressures ≤ 1000 psig, the rate of RCS blowdown is such that the ECCS pumps can provide adequate injection to ensure that peak clad temperature remains below the 10 CFR 50.46 (Ref. 3) limit of 2200°F.

In MODE 3, with RCS pressure ≤ 1000 psig, and in MODES 4, 5, and 6, the accumulator motor operated isolation valves are closed to isolate the accumulators from the RCS. Accumulator isolation is only required when the accumulator pressure is greater than or equal to the maximum RCS pressure for the existing RCS cold leg temperature, as allowed by the P/T curves provided in the PTLR. This allows RCS cooldown and depressurization without discharging the accumulators into the RCS or requiring depressurization of the accumulators.

CA-3.5-001

(continued)

temperature. The upper temperature limit of ~~[100]~~ 120°F is used in the small break LOCA analysis and containment ~~OPERABILITY~~ analysis. Exceeding this temperature will result in a higher peak clad ~~SAFETY~~ temperature, because there is less heat transfer from the core to the injected water for the small break LOCA and higher containment pressures due to reduced containment spray cooling capacity. For the containment response following an MSLB, the lower limit on boron concentration and the upper limit on RWST water temperature are used to maximize the total energy release to containment.

The RWST satisfies Criteria ~~or~~ 2 and 3 of 10CFR50.36(c)(2)(ii). ~~the NRC Policy Statement~~ CA-3.5-002

LCO

The RWST ensures that an adequate supply of borated water is available to cool and depressurize the containment in the event of a Design Basis Accident (DBA), to cool and cover the core in the event of a LOCA, to maintain the reactor subcritical following a DBA, and to ensure adequate level in the containment sump to support ECCS and Containment Spray System pump operation in the recirculation mode.

To be considered OPERABLE, the RWST must meet the water volume, boron concentration, and temperature limits established in the SRs.

APPLICABILITY

In MODES 1, 2, 3, and 4, RWST OPERABILITY requirements are dictated by ECCS and Containment Spray System OPERABILITY requirements. Since both the ECCS and the Containment Spray System must be OPERABLE in MODES 1, 2, 3, and 4, the RWST must also be OPERABLE to support their operation. Core cooling requirements in MODE 5 are addressed by LCO 3.4.7, "RCS Loops — MODE 5, Loops Filled," and LCO 3.4.8, "RCS Loops — MODE 5, Loops Not Filled." MODE 6 core cooling requirements are addressed by LCO 3.9.5, "Residual Heat Removal (RHR) and Coolant Circulation — High Water Level," and LCO 3.9.6, "Residual Heat Removal (RHR) and Coolant Circulation — Low Water Level."

ACTIONS

A.1

With RWST boron concentration or borated water temperature not within limits, they must be returned to within limits within 8 hours. Under these conditions neither the ECCS nor the Containment Spray System can perform its design function.

APPLICABLE SAFETY ANALYSES (continued)

~~The limiting event for the condensate volume is the large feedwater line break coincident with a loss of offsite power. This event assumes the loss of auxiliary feedwater out of the pipe break for 10 minutes, plus 2 hours at Mode 3 steaming through the MSSVs, followed by cooldown to residual heat removal (RHR) entry conditions. Single failures that also affect this event include the following:~~

~~a. Failure of the diesel generator powering the motor driven AFW pump to the unaffected steam generator (requiring additional steam to drive the remaining AFW pump turbine); and~~

~~b. Failure of the steam driven AFW pump (requiring a longer time for cooldown using only one motor driven AFW pump).~~

~~These are not usually the limiting failures in terms of consequences for these events.~~

~~A nonlimiting event considered in CST inventory determinations is a break in either the main feedwater or AFW line near where the two join. This break has the potential for dumping condensate until terminated by operator action, since the Emergency Feedwater Actuation System would not detect a difference in pressure between the steam generators for this break location. This loss of condensate inventory is partially compensated for by the retention of steam generator inventory.~~

The CST satisfies Criteria ~~on~~ 2 and 3 of ~~the NRC Policy Statement.~~ 10CFR50.36(c)(2)(ii). CA-3.5-002

LCO

To satisfy accident analysis assumptions, the CST must contain sufficient cooling water to remove decay heat ~~for [30 minutes]~~ following a reactor trip from 102% RTP, and then to cool down the RCS to RHR entry conditions, assuming a coincident loss of offsite power and the most adverse single active failure. In doing this, it must retain sufficient water to ensure adequate net positive suction head for the AFW pumps during cooldown~~, as well as account for any losses from the steam driven AFW pump turbine, or before isolating AFW to a broken line~~.

The CST ~~level required is equivalent to a usable volume ≥ [110,000 gallons], which is based on holding~~ level of 53% is as indicated on the main control board and is based on a required volume of 249,100 gallons (includes allowances for un-usable volume and instrument uncertainties). This volume is sufficient to hold the unit in

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: CP-3.5-003 **APPLICABILITY:** CP

REQUEST (new): This licensee initiated change corrects two editorial errors in conjunction with the response to Comment Number Q 3.5.1-1.
(1) ITS SR 3.5.1.2 - the "6579 gallons" should have been "6597 gallons".
(2) The ITS Bases discussion of level instrument error was deleted from the Applicable Safety Analyses section and was supposed to be relocated to the Bases discussion of SR 3.5.1.2 and SR 3.5.1.3. It was inadvertently not added to the SR section at that time and is now being added.

ATTACHED PAGES:

Encl 5A	3.5-2
Encl 5B	B 3.5-7

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.5.1.1	Verify each accumulator isolation valve is fully open.	12 hours
SR 3.5.1.2	Verify borated water volume in each accumulator is ≥ ~~7853 gallons 39%~~ 6119 gallons and ≤ ~~8171 gallons 61%~~ 6597 gallons.	12 hours B-PS Q-3.5.1-1 CP-3.5-003
SR 3.5.1.3	Verify nitrogen cover pressure in each accumulator is ≥ ~~385~~ 623 psig and ≤ ~~481~~ 644 psig.	12 hours B-PS

BASES

reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

D.1

If more than one accumulator is inoperable, the plant is in a condition outside the accident analyses; therefore, LCO 3.0.3 must be entered immediately.

SURVEILLANCE REQUIREMENTS

SR 3.5.1.1

Each accumulator valve should be verified to be fully open every 12 hours. This verification ensures that the accumulators are available for injection and ensures timely discovery if a valve should be less than fully open. If an isolation valve is not fully open, the rate of injection to the RCS would be reduced. Although a motor operated valve position should not change with power removed, a closed valve could result in not meeting accident analyses assumptions. This Frequency is considered reasonable in view of other administrative controls that ensure a mispositioned isolation valve is unlikely.

SR 3.5.1.2 and SR 3.5.1.3

Every 12 hours, borated water volume and nitrogen cover pressure are verified for each accumulator. This Frequency is sufficient to ensure adequate injection during a LOCA. Because of the static design of the accumulator, a 12 hour Frequency usually allows the operator to identify changes before limits are reached. Operating experience has shown this Frequency to be appropriate for early detection and correction of off normal trends.

Each accumulator is equipped with two level and two pressure channels. one channel of each is designated the primary channel and used for this surveillance except when declared inoperable. The second channel is used to perform channel checks and as backup to the primary channel. Surveillances are routinely performed on both channels.

Control Board indication may be used in the surveillances of the required indicated water volume. To allow for a 5% instrument inaccuracy and a 1% tank tolerance, control room indicated values of 39% and 61% are conservative and may be used in surveillance. Other means of surveillance which consider measurement uncertainty may also be used.

CP-3.5-003

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: NR-5 0-001 **APPLICABILITY:** CA, CP, DC, WC

REQUEST: The NRC requested the following:

For the following plants (and CTS sections), the applications identify the CTS requirements are being relocated to the FSAR: CW (6.2.3, ISEG; 6.5 , review and audit; 6.10.1, record retention); CP (none); DC (6.10.1, record retention); and WC (6.2.3, ISEG; 6.5, review and audit; 6.8.2/3, procedure changes; 6.10.1, record retention). We discussed relocations to the QA plan with Ray Smith (QA branch) several weeks ago. The staff needs to have the licensees identify that these requirements are going to the QA plan and thus controlled by 50.54(a). The DOCs for relocating the above CTS sections are 1-4-LG and 3-9-LG. These DOCs only state the relocation is to the FSAR. The relocation should be to the QA plan.

FLOG RESPONSE: Enclosures 3A and 3B have been updated to reflect the location of the subject relocated items.

ATTACHED PAGES:

Encl 3A	6
Encl 3B	7

CHANGE NUMBER	NSHC	DESCRIPTION
03-08	A	CTS Specifications [6.9.1.5, 6.9.1.6 and 6.9.2] are revised to delete the reference to submittal location for the monthly report, core operating limits report and special reports. The requirements related to report submittal are contained in 10 CFR. Since conformance to 10 CFR is a condition of the license, specific identification of this requirement in the TS would be duplicative and is not necessary. Since the plant requirements remain the same, the change is considered an administrative change. This change is consistent with NUREG-1431, Rev. 1.
03-09	LG	The record retention requirements are moved to a licensee controlled document ~~the FSAR and implementing procedures~~. The removal of this detail from the CTS is consistent with NUREG-1431. The requirement for retention of records related to activities affecting quality is contained in 10 CFR 50, Appendix B, Criteria XVII and other sections of 10 CFR 50 that are applicable to the plant (i.e., 50.71, etc.). Post-completion review of records does not directly assure operation of the facility in a safe manner, as the activities described in the documents have already been performed. By retaining these requirements in ~~plant procedures and~~ a licensee controlled documents, any changes in these record retention requirements will be adequately controlled under the provisions of 10CFR50.5954a and the applicable regulations. NR-5.0-001
03-10	LG	Not applicable to CPSES. See conversion comparison table (enclosure 3B).
03-11	A	~~The High Radiation Area is revised to be consistent with NUREG-1431 and the new Part 20 requirements. Changes are non-technical to add clarification and conform with NUREG-1431 and RG 8.38.~~ CTS 6.12, which provides high radiation area access control alternatives pursuant to 10 CFR 20.203(c)(2) has been revised as a result of the change to 10 CFR 20 and the guidance in Regulatory Guide 8.3.8. Since the plant requirements remain the same, except as identified in specific Description of Changes, the change is considered administrative. This change is consistent with NUREG-1431 as modified by TSTF-258. Q-5.2-1
03-12	LG	Not applicable to CPSES. See conversion comparison table (enclosure 3B).
03-13	M	The following report[ ] will be added to the ITS Administrative Controls section: "Reactor Coolant System (RCS) Pressure and Temperature Limits Report (PTLR)" [ ]

CONVERSION COMPARISON TABLE - CURRENT TS 6.0

TECH SPEC CHANGE		APPLICABILITY			
NUMBER	DESCRIPTION	DIABLO CANYON	COMANCHE PEAK	WOLF CREEK	CALLAWAY
03-08 A	CTS Specification [6.9.1.5, 6.9.1.6 and 6.9.2] are revised to delete the reference to submittal location for the monthly report, core operating limits report and special reports.	Yes	Yes	Yes	Yes
03-09 LG	The record retention requirements are moved to a licensee controlled document ~~the FSAR and implementing procedures~~. The requirement for retention of records related to activities affecting quality is contained in 10 CFR 50, Appendix B, Criteria XVII and other sections of 10 CFR 50 that are applicable to the plant (i.e., 50.71, etc.).	Yes - QA plan in Chapter 17 of FSAR	Yes - QA plan in Chapter 17 of FSAR	Yes - QA plan in Chapter 17 of USAR	Yes - QA plan in Chapter 17 of FSAR NR-5.0-001
03-10 LG	The Radiation Protection Program is moved to the FSAR. This program requires procedures to be prepared for personnel radiation protection consistent with 10 CFR Part 20. Periodic review of these procedures is required by 10 CFR 20.1101(c).	Yes move to FSAR	No - Deleted from CTS per Amendment 50/36	Yes move to USAR	Yes move to FSAR
03-11 A	The High Radiation Area section is revised to be consistent with the new Part 20 requirements. Changes are non-technical to add clarification.	Yes	Yes	Yes	Yes
03-12 LG	The Process Control Program (PCP) section is proposed to be moved outside the CTS. The PCP implements the requirements of 10 CFR 20, 10 CFR 61, and 10 CFR 71.	Yes move to FSAR	No Deleted from CTS per Amendment 50/36	Yes move to USAR	Yes move to FSAR
03-13 M	The following report[s] have been added to the ITS: "Reactor Coolant System (RCS) Pressure and Temperature Limits Report (PTLR)"[ ].	Yes	Yes	Yes	Yes
03-14 M	Shutdown margin values would be moved to COLR per traveler TSTF-9. In addition, moderator temperature coefficient limits would also be moved to the COLR.	Yes	No Already part of CTS	Yes	Yes
03-15 M	Adds refueling boron concentration limits to COLR.	Yes	Yes	No Already in CTS	Yes