~~CHARGING PUMP - SHUTDOWN~~

08-01-R

~~LIMITING CONDITION FOR OPERATION~~

~~3.1.2.3 At least one charging pump in the boron injection flow path required by Specification 3.1.2.1 shall be OPERABLE and capable of being powered from an OPERABLE emergency power source.~~

~~APPLICABILITY: MODES 5 and 6.~~

~~ACTION:~~

~~With no charging pump OPERABLE or capable of being powered from an OPERABLE emergency power source, suspend all operations involving CORE ALTERATIONS or positive reactivity changes.~~

~~SURVEILLANCE REQUIREMENTS~~

~~4.1.2.3.1 At least the above required charging pump shall be demonstrated OPERABLE when tested pursuant to Specification 4.0.5. In addition, when the above required charging pump is a centrifugal charging pump, verify that, on recirculation flow, the centrifugal charging pump develops a differential pressure of greater than or equal to 2400 psid.~~

~~4.1.2.3.2 All centrifugal charging pumps, excluding the above required OPERABLE pump, shall be demonstrated inoperable* at least once per 12 hours, except when the reactor vessel head is removed, by verifying that the motor breaker D.C. control power is de-energized.~~

08-04-A

unstrike

Q3.1-9

08-04-A

~~*An inoperable pump may be made OPERABLE for testing per Specification 4.0.5 provided the discharge of the pump has been isolated from the Reactor Coolant System by an isolation valve with power removed from the valve operator, or by a sealed closed manual isolation valve.~~

unstrike

Q3.1-9

~~CHARGING PUMPS - OPERATING~~

09-01-R

~~LIMITING CONDITION FOR OPERATION~~

~~3.1.2.4 At least two charging pumps shall be OPERABLE.~~

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

~~ACTION:~~

~~With only one charging pump OPERABLE, restore at least two charging pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY and borated to a SHUTDOWN MARGIN equivalent to at least 1% Δk/k at 200°F within the next 6 hours; restore at least two charging pumps to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 30 hours.~~

~~SURVEILLANCE REQUIREMENTS~~

~~4.1.2.4.1 At least two charging pumps shall be demonstrated OPERABLE when tested pursuant to Specification 4.0.5. In addition, when the above required charging pumps include a centrifugal charging pump(s), verify that, on recirculation flow, each required centrifugal charging pump(s) develops a differential pressure of greater than or equal to 2400 psid.~~

~~4.1.2.4.2 All centrifugal charging pumps, except the above required OPERABLE pump, shall be demonstrated inoperable* at least once per 12 hours whenever the temperature of one or more of the Reactor Coolant System (RCS) cold legs is less than or equal to 270°F by verifying that the motor breaker D.C. control power is de-energized.~~

unstrike

08-04-A

Q 3.1-9

~~#A maximum of one centrifugal charging pump shall be OPERABLE whenever the temperature of one or more of the RCS cold legs is less than or equal to 270°F.~~

~~*An inoperable pump may be made OPERABLE for testing per Specification 4.0.5 provided the discharge of the pump has been isolated from the Reactor Coolant System by an isolation valve with power removed from the valve operator, or by a sealed closed manual isolation valve.~~

unstrike

08-04-A

Q 3.1-9

CHANGE NUMBER	NSHC	DESCRIPTION
05-04	A	CTS SR requires a SDM verification prior to operation above 5 percent power after each refueling with the control rod banks at maximum insertion limits. SDM in MODES 1 and 2 is determined by shutdown and control rods maintained at their insertion limits. The relevant requirements regarding the adequacy of the SDM with rods at their insertion limits is determined through compliance with ITS 3.1.2, which requires a reactivity balance prior to entering MODE 1.after each refueling; and ITS SR 3.1.6.1, which requires a verification of control bank position within insertion limits within 4 hours prior to criticality. Therefore, the requirements of this SR would be performed by other specifications in the ITS. [ ]
05-05	LS17	ACTIONS to be taken should the reactivity balance not be within limits are provided, in lieu of a TS 3.0.3 shutdown. This is consistent with NUREG-1431 as modified by TSTF-142. TR 3.1-003
05-06	A	~~Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).~~ Insert Q3.1-4
05-07	LS24	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B). TR 3.1-003
06-01	R	The CTS 3.1.2.1, "Boration Flow Path Shutdown," and associated SR 4.1.2.1 are relocated outside of the TS. Insert Q3.1-6 This is consistent with NUREG-1431.
07-01	R	~~The CTS 3.1.2.2, "Boration Flow Path Operating," and associated SR 4.1.2.2 are relocated outside of the TS. This is consistent with NUREG-1431.~~ Not Applicable to DCPP. See Conversion Comparison Table (Enclosure 3B). Q3.1-7
07-02	A	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).
08-01	R	The CTS 3.1.2.3, "Charging Pump Shutdown," and associated SRs 4.1.2.3.1 and 4.1.2.3.2 are relocated outside of the TS. Insert Q3.1-8 This is consistent with NUREG-1431.
08-02	M	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).
08-03	LS19	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).
08-04	A	Insert Q3.1-9
09-01	R	The CTS 3.1.2.4, "Charging Pump Operating," and associated SRs 4.1.2.4.1 and 4.1.2.4.2 are relocated outside of the TS. Insert Q3.1-10 This is consistent with NUREG-1431.
10-01	R	The CTS 3.1.2.5, "Borated Water Source Shutdown," and associated CTS SR 4.1.2.5 are relocated outside of the TS. Insert Q3.1-11 This is consistent with NUREG-1431.
11-01	R	The CTS 3.1.2.6, "Borated Water Source Operating," and associated CTS SR 4.1.2.6 are relocated outside of the TS. Insert Q3.1-12 This is consistent with NUREG-1431.

Insert for 3.1-9

Enclosure 3A Page 5

4,5

AND SR 4.1.2.4.2

DOC 08-04-A The MODE 5 and 6 requirements of CTS SR 4.1.2.3.2 are moved by this change to ITS SR 3.4.12.2. Since there are not technical changes (either actual or interpretational) being made, this change is considered administrative (A) in nature."

Q3.1-9

TECH SPECH CHANGE		APPLICABILITY			
NUMBER	DESCRIPTION	DIABLO CANYON	COMANCHE PEAK	WOLF CREEK	CALLAWAY
05-05 LS17	ACTIONS to be taken should the reactivity balance not be within limits are provided, in lieu of a TS 3.0.3 shutdown.	Yes	Yes	No, already in CTS.	No, already in CTS.
05-06 A	CTS SR 4.1.1.5.1 requires that the predicted reactivity values "shall" be adjusted (normalized) at 60 EFPD after refueling. ITS SR 3.1.2.1 states the normalization requirement as "may" be adjusted: This is to recognize that normalization is not necessary if predicted and measured core reactivity are within acceptance tolerance. The scheduling of predicted and measured core reactivity continues to be required at 60 EFPD. Therefore, this change reflects clarification of existing intent and is considered administrative.	~~No, maintaining CTS wording.~~ Yes	~~No, maintaining CTS wording.~~ Yes	Yes Q3.1-4	Yes
06-01 R	Relocates "Boration Flow Path - Shutdown" TS to licensee controlled document.	Yes, see Attachment 21, Page 1. -relocated to an ECG	Yes	No, see Amendment 89. Q3.1-6	No, see Amendment 103.
07-01 R	Relocates "Boration Flow Path - Operating" TS to licensee controlled document.	~~Yes, see LAR 95 07 dated 10/4/95, DCL 95-222.~~ No see Amendments 120/118	Yes	No, see Amendment 89. Q3.1-7	No, see Amendment 103.
07-02 A	Moves limitation on charging pumps in MODE 4 to ITS SR 3.4.12.2.	No, not in CTS.	Yes	No, see Amendment 89.	No, see Amendment 103.
08-01 R	Relocates "Charging Pumps - Shutdown" TS to licensee controlled document.	Yes, see Attachment 21, Page 3. -relocated to an ECG	Yes	No, see Amendment 89. Q3.1-8	No, see Amendment 103.
08-02 M	Moves charging pump SR when below 350°F to ITS SR 3.4.12.2 and decreases surveillance frequency to 12 hours from 31 days.	No, already in CTS.	Yes	No, see Amendment 89.	No, see Amendment 103.
08-03 LS19	Deletes the method of verificating that charging pumps are incapable of injecting into the RCS.	No, not in CTS.	Yes	No, see Amendment 89.	No, see Amendment 103.
05-07 LS24	Insert	No, see CN 05-05-LS17	No, see CN 05-05-LS17	Yes	Yes TR 3.1-003
08-04 A	Insert	Yes	No, see CN 8-02-M	No, see Amendment 89	No, see Amendment 103 Q3.1-9

Insert for 3.1-9

Enclosure 3B Page 4

DOC 08-04-A

The MODE 4, 5 and 6 requirements of CTS SR 4.1.2.3.2 AND SR 4.1.2.4.2 are moved by this change to ITS SR 3.4.12.2. Since there are not technical changes (either actual or interpretational) being made, this change is considered administrative (A) in nature."

Q3.1-9

Applicability:
DC Yes
CP No, See CN 8-02-M
WC No, See Amendment 89
CA No, See Amendment 103

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: DC 3.1-ED1 (new) **APPLICABILITY:** DC

REQUEST:

Various changes have been identified that do not impact the technical content of the submittal or other FLOG members. Changes are noted with DC 3.8-ED1 in the margin and noted below:

1. Revise the LCO 3.1.2 Bases AOT for Required Actions A.1 and A.2 from 72 hours to 7 days per TR 3.1-003 (TSTF-142).

2. Revise the Bases Actions for LCO 3.1.7, Required Action A.1 and B.1, B.2, B.3, and B.4 to supply the missing time.

ATTACHED PAGES:

Encl. 5B B 3.1-8, B 3.1-30

movements are performed within the bounds of the safety analysis. ~~An SDM demonstration is~~ Core reactivity and control rod worth measurements are required during the first startup following operations that could have altered core reactivity (e.g., fuel movement, control rod replacement, control rod shuffling.

ACTIONS

A.1 and A.2

Should an anomaly develop between measured and predicted core reactivity, an evaluation of the core design and safety analysis must be performed. Core conditions are evaluated to determine their consistency with input to design calculations. Measured core and process parameters are evaluated to determine that they are within the bounds of the safety analysis, and safety analysis calculational models are reviewed to verify that they are adequate for representation of the core conditions. The required Completion Time of ~~72 hours~~ 7 DAYS is based on the low probability of a DBA occurring during this period, and allows sufficient time to assess the physical condition of the reactor and complete the evaluation of the core design and safety analysis. DC 3.1-ED 1

Following evaluations of the core design and safety analysis, the cause of the reactivity anomaly may be resolved. If the cause of the reactivity anomaly is a mismatch in core conditions at the time of RCS boron concentration sampling, then a recalculation of the RCS boron concentration requirements may be performed to demonstrate that core reactivity is behaving as expected. If an unexpected physical change in the condition of the core has occurred, it must be evaluated and corrected, if possible. If the cause of the reactivity anomaly is in the calculation technique, then the calculational models must be revised to provide more accurate predictions. If any of these results are demonstrated, and it is concluded that the reactor core is acceptable for continued operation, then the boron letdown curve and the boron concentration requirement for SDM may be renormalized and power operation may continue. If operational restrictions or additional SRs are necessary to ensure the reactor core is acceptable for continued operation, then they must be defined.

The required Completion Time of ~~72 hours~~ 7 DAYS is adequate for preparing whatever operating restrictions or surveillances that may be required to allow continued reactor operation. DC 3.1-ED 1

(Continued)

BASES

DC 3.1-E01

ACTIONS (continued)

A.1

When one DRPI per group fails, the position of the rod may still be determined indirectly by use of the movable incore detectors. The Required Action may also be ensuring at least once per 8 hours that F_Q satisfies LCO 3.2.1, $F_{\Delta H}$ satisfies LCO 3.2.2, and SDM is within the limits provided in the COLR, provided the nonindicating rods have not been moved. Based on experience, normal power operation does not require excessive movement of banks. If a bank has been significantly moved, the Required Action of C.1 or C.2 below is required. Therefore, verification of RCCA position within the Completion Time of 8 hours is adequate for allowing continued 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).

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

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. The indirect position determination available via movable incore detectors Together with this will minimize the potential for rod misalignment.

Insert

Q3.1-20

Placing the Rod Control System in manual assures unplanned rod motion will not occur.

(Continued)

Insert for revised FLOG Response Q3.1-20

ITS Section 3.1 - Enclosure 5B - page B3.1-30

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.

ONE

DC 3.1-ED1

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: Q 3-08 **APPLICABILITY:** DC

REQUEST:

The DCPP CTS have been revised to include manual initiation of the fuel handling building and automatic initiation of the control room pressurization system. These systems are not classified as ESF functions in the CTS. This revision incorporates the Actuation Logic, Master Relay, and Slave Relay Tests included in NUREG-1431 for the CRVS and the TADOT for the manual actuation of both systems.

Comment: Provide documentation to show staff acceptance of actuation relay logic, master and slave relay testing proposed for the ITS. Where necessary, provide additional justification based on CTS limits that are changed.

FLOG RESPONSE: The reference to Automatic Actuation Logic is deleted from Function 2 of Table 3.3.7-1, since the radiation monitor actuation of the CRVS pressurization system is via direct actuation of the CRVS relays without going through the SSPS. The SI (via Phase A) actuation of the CRVS pressurization system is via the SSPS and those relays are verified OPERABLE via the ESFAS Actuation Logic and Master Relay Tests. DOC 3-08-M is revised to clarify the CRVS instrumentation interface with the SSPS. In addition, the surveillances for the ACTUATION LOGIC TEST (ALT) and MASTER RELAY TEST (MRT) are deleted via new JFD 3.3-144, since these tests are performed via the ESFAS ALT and MRT. SR 3.3.7.5 is retained to verify the OPERABILITY of the CRVS actuation relays as initiated via the CRVS intake radiation monitors. The ITS Bases for 3.3.7 and 3.3.2 have been clarified to note that a safety injection (SI) signal does not directly initiate CRVS transfer to pressurization, but that the SI signal initiates Phase A, and Phase A directly initiates CRVS transfer to pressurization. The Bases for ITS 3.3.2 has been clarified to note that the Slave Relay Testing is a test of the CRVS radiation monitor pressurization system actuation relays and does not go through the SSPS. The Bases for SR 3.3.7.5 has been revised to note the above and delete the SSPS SLAVE RELAY TEST details.

FLOG RESPONSE (supplement): Based upon conversations with the NRC Staff on March 18, 1999, the strike outs of SR 3.3.7.3 and 3.3.7.4 is removed and these SRs, along with SR 3.3.7.5, are revised to have a 92 day frequency. These changes are based upon the DCPP design that results in meeting the requirements of SR 3.3.7.3, 3.3.7.4, and 3.3.7.5 each time SR 3.3.7.2 is performed. The Bases of SR 3.3.7.5 are also revised to state that this test does not verify the SSPS input circuit to CRVS. LCO 3.3.7 and its Bases are revised to note that the CRVS actuation system is common to both Units. Consistent with the CTS, The Bases of LCO 3.3.7 is also revised to note that only two radiation monitors are required (one in each normal air intake). The SSPS input circuit to the CRVS is included under Table 3.3.7-1, Function 4, as part of the SSPS SLAVE RELAY TESTs.

ATTACHED PAGES:

Encl. 5A	3.3-69, 3.3-72, 3.3-73
Encl. 5B	B 3.3-172, B 3.3-174, B3.3-179, B 3.3-180

3.3 INSTRUMENTATION

3.3.7 Control Room ~~Emergency Filtration~~ Ventilation System (~~CREFS~~ CRVS) Actuation Instrumentation PS

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

APPLICABILITY: ~~MODES 1, 2, 3, 4, [5, and 6,]~~ According to Table 3.3.7-1.
~~During movement of irradiated fuel assemblies,~~
~~[During CORE ALTERATIONS].~~ 3.3-79

ACTIONS

2. Functions ARE common to Both units

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

Q 3-08

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~~ CRVS train in ~~emergency [radiation protection]~~ pressurization mode.	7 days B-PS PS

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.3.7.3	~~Perform ACTUATION LOGIC TEST.~~ ~~Not Used~~ STET	92 DAYS ~~31 days on a STAGGERED TEST BASIS~~ Q 3-08 3.3-144
SR 3.3.7.4	~~Perform MASTER RELAY TEST.~~ ~~Not Used~~	92 DAYS ~~31 days on a STAGGERED TEST BASIS~~ Q-3-08 Q 3.3-144
SR 3.3.7.5	Perform SLAVE RELAY TEST.	92 DAYS ~~[92] days~~ ~~18 months~~ B-PS Q 3-08
SR 3.3.7.6	----------NOTE---------- Verification of setpoint is not required. ---------- Perform TADOT.	18 months B
SR 3.3.7.7	Perform CHANNEL CALIBRATION.	18 months B

Table 3.3.7-1 (page 1 of 1)
~~GREFS~~CRVS Actuation Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	TRIP SETPOINT	3.3-79
1.	Manual Initiation	1, 2, 3, 4, 5, 6, and (a)	2 trains	SR 3.3.7.6	NA	
2.	Automatic ~~Actuation Logic and~~ Actuation Relays	1, 2, 3, 4, 5, 6, and (a)	2 trains	~~SR 3.3.7.3~~ ~~SR 3.3.7.4~~ SR 3.3.7.5 SIFT	NA	Q 3 3-08 3.3-144 Q 3.3-79 DC 3.3-Ed
3.	Control Room Radiation	~~1, 2, 3, 4, 5, 6, and (a)~~				
	~~a.~~ ~~Control Room~~ Atmosphere Air Intakes	1, 2, 3, 4, 5, 6, and (a)	2	SR 3.3.7.1 SR 3.3.7.2 SR 3.3.7.7	≤ 2 mR/hr	3.3-102 B
	~~b. Control Room Air Intakes~~		~~[2]~~	~~SR 3.3.7.1 SR 3.3.7.2 SR 3.3.7.7~~	~~≤ [2] mR/hr~~	3.3-102
4.	Safety Injection	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function 1, for all initiation functions and requirements.				

(a) During movement of irradiated fuel assemblies.

3.3-79

B 3.3 INSTRUMENTATION

B 3.3.7 Control Room ~~Emergency Filtration~~ Ventilation System (~~CREFS~~ CRVS) Actuation Instrumentation

BASES

BACKGROUND

The ~~CREFS~~ CRVS provides an enclosed control room environment from which ~~the~~both units can be operated following an uncontrolled release of radioactivity. ~~During normal operation, the Auxiliary Building Ventilation System provides control room ventilation.~~ Upon receipt of an actuation signal, the ~~CREFS~~ CRVS shifts from normal operation and initiates filtered ventilation and pressurization of the control room. This system is described in the Bases for LCO 3.7.10, "Control Room ~~Emergency Filtration~~ Ventilation System~~.~~" and is common to both units.

therefore the total Required Detectors is two for the Common Control Room Area.

The actuation instrumentation consists of redundant radiation monitors in the air intakes ~~and~~ to the control room areas. There are two detectors in each of the two normal control room air intakes. However, since they take suction ~~form~~ a common area, the North and South sides of the mechanical equipment room, only ~~two~~ detectors ~~are~~ required to provide protection against a single failure. A Phase "A" containment isolation signal or a high radiation signal from ~~any~~either of these required detectors in the normal intake will initiate ~~both trains of the CREFS~~ CRVS pressurization from the pressurization intake with the lowest radiation level (each pressurization intake, one on the North end of the turbine building and one on the South, has two radiation monitors). The control room operator can also initiate ~~CREFS~~ CRVS pressurization ~~trains~~ by manual switches in the control room. ~~The CREFS is also actuated by a safety injection (SI) signal. The SI Function is discussed in LCO 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation."~~

IS

IN EACH AIR intake

FROM

ONE

INSERT B 3.3.7(3)

ADDITIONAL

INSERT B 3.3.7(1)

Q 3-08

emergency

DC 3.3-Ed

The CRVS has two additional manually selected operating modes: smoke removal and recirculation. Neither of modes are required for the CRVS to be OPERABLE, but they are useful for certain non-DBA circumstances.

these

DC ALL-002

APPLICABLE SAFETY ANALYSES

The control room must be kept habitable for the operators stationed there during accident recovery and post accident operations.

The ~~CREFS~~ CRVS acts to terminate the supply of unfiltered outside air to the control room, initiate filtration, and pressurize the control room. These actions are necessary to ensure the control room is kept habitable for the operators stationed there during accident recovery and post accident operations by minimizing the radiation exposure of control room personnel.

(continued)

Insert for Q 3-08

This Provides

Enclosure 5B page b 3.3-172
Insert B 3.3.7 (1)

Credited in

This

AN SI

IS

(The ability to swap the pressurization intakes is an added feature of the system, but ~~was~~ not ~~assumed to be functioning for~~ any accident scenarios, thus it is not required for CRVS OPERABILITY.) ~~However,~~ Only the actuation of the pressurization system via ~~a Phase A Isolation~~ signal directly is processed through the SSPS, the actuation of the pressurization system via an atmosphere intake monitor directly actuates the CRVS actuation relays without going through the SSPS.

Q 3-08

Insert B 3.3.7 (3)

The opposite units pressurization system (the system selects the opposite unit assuming that pressurization would be the lowest radiation level), or from

BASES

APPLICABLE SAFETY ANALYSES (continued)

~~CORE ALTERATIONS~~, is the primary means to ensure control room habitability in the event of a fuel handling or waste gas decay tank rupture accident. The ~~CREFS~~ CRVS pressurization system actuation instrumentation satisfies Criterion 3 ~~of the NRC Policy Statement~~10 CFR 50.36(c)(2)(ii).

Remove strike out

DC ALL-002

LCO

The LCO requirements ensure that instrumentation necessary to initiate the ~~CREFS~~ CRVS pressurization system is OPERABLE.

1. Manual Initiation

Remove strike out

DC ALL-002

The LCO requires two channels OPERABLE. The operator can initiate the ~~CREFS~~ CRVS pressurization mode at any time by using ~~either of~~ two switches in the control room. This action will cause actuation of all components in the same manner as any of the automatic actuation signals.

The LCO for Manual Initiation ensures the proper amount of redundancy is maintained in the manual actuation circuitry to ensure the operator has manual initiation capability.

~~Each channel consists of one push button and the interconnecting wiring to the actuation logic cabinet.~~

2. Automatic Actuation ~~Logic and Actuation~~ Relays

Q 3-08

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

~~Automatic Actuation Logic and Actuation Relays consist of the same features and operate in the same manner as described for ESFAS Function 1.b., SI, in LCO 3.3.2. The applicable MODES and specified conditions for the CREFS portion of these functions are different and less restrictive than those specified for their SI roles. If one or more of the SI functions becomes inoperable in such a manner that only the CREFS function is affected, the Conditions applicable to their SI function need not be entered. The less~~

~~INSERT B 3.3.7(2)~~

DC 3.3-Ed

CRVS

Remove Strike out

Retain strike out

Q 3-08

or Phase A

OR Phase A

5

(continued)

Insert for Q 3-08

~~Enclosure 5B page b 3.3-174~~
~~Insert B 3.3.7 (2)~~

~~The CRVS atmosphere intake monitors actuate the pressurization system directly via the CRVS relays and do not go through the SSPS. The only actuation of the CRVS pressurization mode of operation via the SSPS is via a Phase A signal actuation.~~

Q 3-08

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.7.1 (continued)

including indication and readability. If a channel is outside the criteria, it may be an indication that the sensor or the signal processing equipment has drifted outside its limit.

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

SR 3.3.7.2

INSERT

Q 3-08

A ~~COT~~ CFT is performed once every 92 days on each required channel to ensure the entire channel will perform the intended function. This test verifies the capability of the instrumentation to provide the ~~CREFS~~ CRVS actuation. ~~The setpoints shall be left consistent with the unit specific calibration procedure tolerance.~~ The Frequency is based on the known reliability of the monitoring equipment and has been shown to be acceptable through operating experience.

SR 3.3.7.3

INSERT

Q 3-08

~~NOT USED~~

~~SR 3.3.7.3 is the performance of an ACTUATION LOGIC TEST. The train being tested is placed in the bypass condition, thus preventing inadvertent actuation. Through the semiautomatic tester, all possible logic combinations, with and without applicable permissives, are tested for each protection function. In addition, the master relay coil is pulse tested for continuity. This verifies that the logic modules are OPERABLE and there is an intact voltage signal path to the master relay coils. This test is performed every 31 days on a STAGGERED TEST BASIS. The Frequency is justified in WCAP-10271-P-A, Supplement 2, Rev. 1 (Ref. 1).~~

SR 3.3.7.4

INSERT

Q 3-08

~~NOT USED~~

~~SR 3.3.7.4 is the performance of a MASTER RELAY TEST. The MASTER RELAY TEST is the energizing of the master relay, verifying contact operation and a low voltage continuity~~

(continued)

Insert for Q 3-08

Encl. 5B B 3.3-179
Insert into SR 3.3.7.2

The CRVS pressurization system actuation relays are directly actuated by the CRVS atmosphere intake radiation monitors. This signal is not processed through the SSPS, but goes directly to the CRVS actuation relays. The pressurization system is also actuated by Phase A, however this signal is processed via the SSPS and the testing of the associated relays is performed via SR 3.3.2.2, SR 3.3.2.4, and SR 3.3.2.6.

Insert into SR 3.3.7.3

SR 3.3.7.3 is the performance of an ACTUATION LOGIC TEST. This test verifies the signal path to the Master Relay Coil. This test is performed every 92 days as part of the performance of SR 3.3.7.2.

Insert into SR 3.3.7.4

SR 3.3.7.4 is the performance of a MASTER RELAY TEST. This test energizes the Master Relay and verifies the actuation signal injected into the Slave Relays. This test is performed every 92 days as part of the performance of SR 3.3.7.2.

BASES

Q 3-08

SURVEILLANCE REQUIREMENTS

SR 3.3.7.4 (continued)

~~check of the slave relay coil. Upon master relay contact operation, a low voltage is injected to the slave relay coil. This voltage is insufficient to pick up the slave relay, but large enough to demonstrate signal path continuity. This test is performed every 31 days on a STAGGERED TEST BASIS. The Frequency is acceptable based on instrument reliability and industry operating experience.~~

INSERT

SR 3.3.7.5 ~~CRVS actuation~~

~~INSERT B SR 3.3.7.5~~

Q 3-08

~~SR 3.3.7.5 is the performance of a SLAVE RELAY TEST. The SLAVE RELAY TEST is the energizing of the slave relays. Contact operation is verified in one of two ways. Actuation equipment that may be operated in the design mitigation MODE is either allowed to function or is placed in a condition where the relay contact operation can be verified without operation of the equipment. Actuation equipment that may not be operated in the design mitigation MODE is prevented from operation by the SLAVE RELAY TEST circuit. For this latter case, contact operation is verified by a continuity check of the circuit containing the slave relay. This test is performed every [92] days18 months. The Frequency is acceptable based on instrument reliability and industry operating experience (Ref. 1 and 2).~~

Q 3-08

SR 3.3.7.6

SR 3.3.7.6 is the performance of a TADOT. This test is a check of the Manual Actuation Functions and is performed every ~~[~~18~~]~~ months. Each Manual Actuation Function is tested up to, and including, the master relay coils. In some instances, the test includes actuation of the end device (i.e., pump starts, valve cycles, etc.).

The test also includes trip devices that provide actuation signals directly to the Solid State Protection System, bypassing the analog process control equipment. The Frequency is based on the known reliability of the Function and the redundancy available, and has been shown to be acceptable through operating experience. The SR is modified by a Note that excludes verification of setpoints during the

(continued)

Insert for Q 3-08

Encl. 5B B 3.3-180
Insert into SR 3.3.7.5

SR 3.3.7.5 is the performance of a SLAVE RELAY TEST. This test energizes the Slave Relays and verifies actuation of the equipment to the pressurization mode. This test is performed every 92 days as part of the performance of SR 3.3.7.2.

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: Q 7-09 **APPLICABILITY:** CP, WC, CA, DC

REQUEST:

Clarification is provided that Channel Checks are only required for normally energized instrumentation channels by adding "for each required instrumentation channel that is normally energized", per ITS [SR 3.3.3.1 and SR 3.3.4.1] to CTS [4.3.3.5.1 and 4.3.3.6].

Comment: [See LS 1 GEN]

FLOG RESPONSE (original): The applicability of DOC 7-09 LS-43 has been revised to include DCPP and WCGS.

Per the agreement at the 8/14/98 meeting, a list of the de-energized instruments will be included in LS-43.

FLOG RESPONSE (Supplement): The CTS SR 4.3.3.5.1 markup page which was inadvertently omitted is added to this response.

ATTACHED PAGES:

Encl. 2 3/4 3-47

INSTRUMENTATION

REMOTE SHUTDOWN INSTRUMENTATION AND CONTROLS

LIMITING CONDITION FOR OPERATION

01-63-A
Q 1-A GEN

3.3.3.5 The remote shutdown monitoring instrumentation and control functions shown in Table 3.3-9 shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a. With less than the minimum required Function(s) of Table 3.3-9 operable, restore the inoperable Function(s) to OPERABLE status within 30 days or be in MODE 3 within 6 hours and HOT SHUTDOWN within ~~the next~~ 12 hours. 07-05-A

b. The provisions of Specification 3.0.4 are not applicable.

c. Separate entry into Action a. is allowed for each Function in Table 3.3-9.

SURVEILLANCE REQUIREMENTS

07-09-LS43

Q 7-09

FOR EACH REQUIRED INSTRUMENT CHANNEL THAT IS ENERGIZED

4.3.3.5.1 Each remote shutdown monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION at the frequencies shown in Table 4.3-6.

4.3.3.5.2 Verify each required control circuit and control transfer switch is capable of performing the intended function at least once every ~~18 months~~.

REFUELING INTERVAL

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: Q 3.3-37 **APPLICABILITY:** DC, CP

REQUEST:

Several ITS Required Action Notes are modified to allow a channel to be placed in bypass for surveillance testing.. [This change, incorporating bypass test instrumentation, was approved for CPSES through Amendments 47 and 33 for Units 1 and 2, respectively.]

Comment: Reject for CP application to 3.3.1 Action D.1& E.1 & M.1 - The ITS proposes generic changes to the STS that are not included in an approved TSTF. The ISTS notes allowing bypass for testing are based on WCAP-10271. Provide a reference that shows staff approval of the proposed deviation from the ITS based on the accepted analysis of WCAP-10271.

FLOG RESPONSE (Original): For DCPP, WCAP-10271 was approved via LA 61/60. During the development of the ITS, the portion of CTS ACTION 6 that allows the bypass of one additional channel was not included in the mark-up of ITS LCO 3.3.1 ACTIONS E.1 and M.1. The allowed bypass notes of ACTIONS M.1 and E.1 have been revised to reflect the CTS allowance of one additional channel and the FUNCTIONAL UNITS affected by the allowance. Refer also to Additional Information Number DC 3.3-003 and to the revised DOCs for 01-19-LS8, 01-45-M, 01-50-A, 01-49-LS18 and their applicable revised NSHC discussions for revisions related to the missed portion of the CTS note.

For CPSES, the changes in 3.3.1 Actions D.1, E.1 and M.1 have been confirmed to be consistent with the CTS. In verifying these actions, it was discovered that the note for the condition for Turbine Trip (condition P in the STS) had not been modified to reflect the bypass for testing allowed by the CTS. The conditions for Turbine Trip have been revised in the response to RAI 3.3-02. In addition to those changes, the note to new Required Action O.1 is revised to read "The inoperable channel or another channel may ..." to incorporate the bypass testing allowed by the CTS.

FLOG RESPONSE (Supplemental): Based upon conversations with the NRC Staff on March 25, 1999, the Notes associated with LCO 3.3.1 Conditions E & M are revised to differentiate 2-out-of-4 logic and 2-out-3 logic functions for proper configuration for testing in bypass consistent with WCAP-10271 while maintaining the CTS bypass requirements for the NIS. Similar revisions are added to the Notes associated with LCO 3.3.2 Conditions D & O. The Bases discussion for each of these Conditions is also revised consistent with these revisions.

ATTACHED PAGES:

Encl. 5A	3.3-4, 3.3-7, 3.3-30, 3.3-35
Encl. 5B	B 3.3-44, B 3.3-49, B 3.3-114, B 3.3-122

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. (continued) Delete Strike out	indent ---------NOTE--------- ~~Only~~ Not required to be performed ~~when the~~ until 12 hours after ~~input from one~~ Power Range Neutron Flux ~~input~~ channel to QPTR is inoperable ~~and THERMAL POWER is > than 75% RTP.~~ e	Q 3.3-120 ~~3.3-120~~ e WC 3.3-019 3.3-145
	D.2.2 Perform SR 3.2.4.2.	Once per 12 hours
	OR	
	D.3 Be in MODE 3.	12 hours Q 3.3-37 3.3-37
E. One channel inoperable.	---------NOTE--------- The inoperable channel may be bypassed for up to 4 hours for surveillance testing ~~and setpoint adjustment~~ e of other channels. For FUNCTIONS 2b, 3a ~~and 3b~~ 3.b AND 14a only the inoperable channel may be bypassed for surveillance testing of other channels.	or one additional channel for FUNCTION 6, 7, ~~8b and 14,~~ AND 8.b (S) ~~3.3-40~~ Q 3.3-40
	E.1 Place channel in trip.	6 hours
	OR	
	E.2 Be in MODE 3.	12 hours
F. ~~THERMAL POWER > P-6 and < P-10.~~ One Intermediate Range Neutron Flux channel inoperable.	F.1 Reduce THERMAL POWER to < P-6.	224 hours 3.3-95 3.3-107
	OR	
	F.2 Increase THERMAL POWER to > P-10.	224 hours 3.3-107

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
L. Required Source Range Neutron Flux channel~~(s)~~ e inoperable.	L.1 Suspend operations involving positive reactivity additions.	Immediately
	AND	B Q 3.3-123
	~~L.2 Close unborated water source isolation valves.~~	~~1 hour~~ 3.3-123
	AND	
	L.~~3~~2 Perform SR 3.1.1.1.	1 hour AND Once per 12 hours thereafter Q 3.3-37 3.3-37
M. One channel inoperable.	-------------NOTE------------- The inoperable channel OR one additional channel for FUNCTIONS 8a, ~~9 and 10~~ 9, 10 may be bypassed for up to 4 hours for surveillance testing of other channels. FOR FUNCTIONS ~~11~~, 12 AND 13, only the inoperable channel may be bypassed for surveillance testing of other channels.	
	M.1 Place channel in trip.	6 hours 3.3-37 Q 3.3-37
	OR	
	M.2 Reduce THERMAL POWER to < P-7.	12 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One train inoperable.	C.1 ------------NOTE------------ One train may be bypassed for up to 4 hours for surveillance testing provided the other train is OPERABLE. -------------------------- Full width	B 3.3-145 WC 3.3-019
	Restore train to OPERABLE status.	6 hours
	OR	
	C.2.1 Be in MODE 3.	12 hours
	AND	
	C.2.2 Be in MODE 5.	42 hours
D. One channel inoperable.	D.1 ----------NOTE---------- For Function 1.d The inoperable channel or one additional channel may be bypassed for up to 4 hours for surveillance testing of other channels. For Functions 1.e, 4.d(1), 4.d(2) and 6.d.(1) only the inoperable channel may be bypassed for surveillance testing of the other channels. Full width	3.3-37 3.3-149 WC 3.3-019 B
	Place channel in trip.	6 hours Q 3.3-37
	OR	
	D.2.1 Be in MODE 3.	12 hours
	AND	
	D.2.2 Be in MODE 4.	18 hours
	~~AND~~	
	~~D.2.3 Be in MODE 5 for Function 1.c.~~	~~42 hours~~ ~~3.3-66~~ Q 3.3-66

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
N. One channel inoperable.	N.1 Restore channel to OPERABLE status.	48 hours 3.3-58
	OR	
	~~N.2.1~~ Declare THE associated AFW pump or MSIV ~~valve~~ inoperable.	Immediately
		DC 3.3-007
	~~AND~~	
	~~N.2.2 Comply with REQUIRED ACTION of 3.7.5 or 3.7.2 as applicable.~~	~~Immediately~~

INSERT 5A-O & P

Q 3.3-66

3.3-114

Insert for Q 3.3-66

Enclosure 5A page 3.3-35
Insert 5A-O&P

O. One channel inoperable	-----NOTE----- The inoperable channel ~~or one additional channel may~~ be bypassed for up to 4 hours for surveillance testing of other channels. ----- O.1 Place channel in trip. OR O.2.1 Be in MODE 3. AND O.2.~~3~~ 2 Be in MODE 5.	Q 3.3-37 6 hours 12 hours Q 3.3-66 42 hours
P. One channel inoperable	-----NOTE----- One additional channel may be bypassed for up to 4 hours for surveillance testing. ----- P.1 Place channel in bypass. OR P.2.1 Be in MODE 3. AND P.2.~~3~~ 2 Be in MODE 5.	6 hours 12 hours Q 3.3-66 42 hours

BASES

ACTIONS (continued)

E.1 and E.2

Condition E applies to the following reactor trip Functions:

- Power Range Neutron Flux – Low;
- Overtemperature ΔT;
- Overpower ΔT;
- Power Range Neutron Flux – High Positive Rate;
- Power Range Neutron Flux – High Negative Rate;
- Pressurizer Pressure – High; and
- SG Water Level – Low Low; ~~and~~
- ~~SG Water Level – Low coincident with Steam Flow/Feedwater Flow Mismatch.~~

A known inoperable channel must be placed in the tripped condition within 6 hours. Placing the channel in the tripped condition results in a partial trip condition requiring only one-out-of-two logic for actuation of the two-out-of-three trips and one-out-of-three logic for actuation of the two-out-of-four trips. The 6 hours allowed to place the inoperable channel in the tripped condition is justified in Reference 7.

If the operable channel cannot be placed in the trip condition within the specified Completion Time, the unit must be placed in a MODE where these Functions are not required OPERABLE. An additional 6 hours is allowed to place the unit in MODE 3. Six hours is a reasonable time, based on operating experience, to place the unit in MODE 3 from full power in an orderly manner and without challenging unit systems. Q3.3-37

The Required Actions have been modified by a Note that allows placing the inoperable channel OR ONE ADDITIONAL CHANNEL in the bypassed condition FOR FUNCTIONS 6, 7, 8b AND ~~14~~ AND 14.a for up to 4 hours while performing routine surveillance testing of the other channels. ~~The Note also allows placing the inoperable channel in the bypass condition to allow setpoint adjustments of other channels when required to reduce the setpoint in accordance with other Technical Specifications.~~ Q3.3-40 The 4 hour time limit is justified in Reference 7.

The NOTE allows only the inoperable channel for FUNCTIONS 26, 3a, and 3b to be bypassed for surveillance testing of other channels. Q3.3-37

(continued)

BASES

ACTIONS

M.1 and M.2 (continued)

OPERABLE channel, and the low probability of occurrence of an event during this period that may require the protection afforded by the Functions associated with Condition M.

The Required Actions have been modified by a Note that allows placing the inoperable channel (or one additional channel for FUNCTIONS 8, ~~9 and 10~~) in the bypassed condition for up to 4 hours while performing routine surveillance testing of the other channels. The Note allows only the inoperable channel for FUNCTIONS 8, 12 and 13 to be bypassed for surveillance testing of other channels. The 4 hour time limit is justified in Reference 7.

Q 3.3-37

DC AL-002

9, 10

N.1 and N.2

NOT USED

~~Condition N applies to the Reactor Coolant Flow—Low (Single Loop) reactor trip Function. With one channel inoperable, the inoperable channel must be placed in trip within 6 hours. If the channel cannot be restored to OPERABLE status or the channel placed in trip within the 6 hours, then THERMAL POWER must be reduced below the P-8 setpoint within the next 4 hours. This places the unit in a MODE where the LCO is no longer applicable. This trip Function does not have to be OPERABLE below the P-8 setpoint because other RTS trip Functions provide core protection below the P-8 setpoint. The 6 hours allowed to restore the channel to OPERABLE status or place in trip and the 4 additional hours allowed to reduce THERMAL POWER to below the P-8 setpoint are justified in Reference 7.~~

~~The Required Actions have been modified by a Note that allows placing the inoperable channel in the bypassed condition for up to 4 hours while performing routine surveillance testing of the other channels. The 4 hour time limit is justified in Reference 7.~~

O.1 and O.2

~~NOT USED~~

~~Condition O applies to the RCP Breaker Position (Single Loop) reactor trip Function. There is one breaker position device per RCP breaker. With one channel inoperable, the inoperable channel must be restored to OPERABLE status within 6 hours. If the channel cannot be restored to OPERABLE status within the 6 hours, then THERMAL POWER must be reduced below the P-8 setpoint within the next 4 hours.~~

INSERT ACTION O Bases

Q 3.3-02

(continued)

BASES

ACTIONS

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

Q 3.3-66

- ~~Containment Pressure — High 2~~ ~~High — High~~

Steam Line Isolation –

- Steam Line Pressure – Negative Rate – High; ✓ DC ALL-002
- ~~Steam Line Pressure — Low;~~
- ~~High Steam Flow Coincident With Safety Injection Coincident With T_{avg} — Low Low;~~
- ~~High High Steam Flow Coincident With Safety Injection;~~
- ~~High Steam Flow in Two Steam Lines Coincident With T_{avg} — Low Low;~~ Add strike out DC ALL-002

Auxiliary Feedwater –

- SG Water level – Low Low ~~(two, three, and four loop units)~~; ✓ ~~and~~
- ~~SG Water level — High High (P-14) (two, three, and four loop units).~~

If one channel is inoperable, 6 hours are allowed to restore the channel to OPERABLE status or to place it in the tripped condition. Generally this Condition applies to functions that operate on two-out-of-three logic (excluding pressurizer pressure - low ~~and containment pressure high — high~~). Therefore, failure of one channel places the Function in a two-out-of-two configuration. ~~One~~ The inoperable channel must be tripped to place the Function in a one-out-of-~~three~~two configuration that satisfies redundancy requirements. Insert Bases (3) DC 3.3-005

which is two-out-of-four due to its control input function

Q 3.3-66

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

The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. In MODE 4, these Functions are no longer required OPERABLE.

For Functions 1.d Q 3.3-37

The Required Actions are modified by a Note that allows the inoperable channel or one additional channel to be bypassed for up to ~~[4]~~ hours for surveillance testing of other channels. The 6 hours allowed to restore the channel to OPERABLE status or to place the inoperable channel in the tripped condition, and the 4 hours allowed for testing, are justified in Reference 8.

remove redline

For Functions 1.e, 4.d.(1), 4.d.(2) AND 6.d(1) only the INOPERABLE CHANNEL MAYBE BYPASSED FOR SURVEILLANCE TESTING OF THE OTHER CHANNELS.

Q 3.3.6-1

Q 3.3-37

(continued)

BASES

ACTIONS

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

LCO 3.0.3 to initiate shutdown actions in the event of a complete loss of ESFAS function. If the interlock is not in the required state (or placed in the required state) for the existing unit condition, the unit must be placed in MODE 3 within the next 6 hours and MODE 4 within the following 6 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. Placing the unit in MODE 4 removes all requirements for OPERABILITY of these interlocks.

~~M.1 or M.2~~ ← INSERT ACTION M Bases Q 3.3-46

~~Condition M applies to the Trip Time Delay (TTD) for the SG low-low water level actuation of AFW pumps. With one or more TTD circuitry delay timers inoperable, 6 hours are allowed to adjust the threshold power level for no time delay to 0% RTP or to place the affected SG water level low-low channel in trip. The specified Completion Time is reasonable considering the nature of these Functions, the available redundancy, and the low probability of an event occurring during this interval. If the TTD threshold power level cannot be adjusted or the affected SG water level low-low channel cannot be placed in trip, the unit must be placed in MODE 3 within the next 6 hours and MODE 4 within the following 6 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power in an orderly manner and without challenging unit systems. In MODE 4, the unit does not have any analyzed transients or conditions that require the explicit use of the protection function noted above.~~

N.1 or N.2 ~~and N.2.2~~ DC 3.3-007

Condition N applies to:

* Manual Initiation of Steam Line Isolation; and
* Manual Initiation of Auxiliary Feedwater.

If a channel is inoperable, 48 hours is allowed to return the channel to an OPERABLE status. The specified Completion Time is reasonable considering the nature of these functions, the available redundancy, and the low probability of an event occurring during this interval. If the Function cannot be returned to OPERABLE status, the associated pump or valve shall be declared inoperable immediately and the REQUIRED ACTION of 3.7.5 or 3.7.2 as applicable complied with immediately.

INSERT SB-0&P Q 3.3-66

(continued)

Insert for Q 3.3-66

Enclosure 5B page B 3.3-122
Insert 5B-O & P

Q 3.3-66

AND

O.1 or O.2.1, O.2.2 ~~and O.2.3~~

Resulting From

Condition O applies to Safety Injection ~~-~~ Containment Pressure – High.

If one channel is inoperable, 6 hours are allowed to restore the channel to OPERABLE status or to place it in the tripped condition. Failure of one channel places the function in a two-out-of-two configuration since the trip coincidence is two-out-of-three. The inoperable channel must be tripped to place the Function in a one-out-of-two configuration that satisfies redundancy requirements.

Failure to restore the inoperable channel to OPERABLE status or place it in the tripped condition within 6 hours requires the unit be placed in MODE 3 within 12 hours and MODE 5 in 42 hours.

The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. In MODE 5, these functions are no longer required OPERABLE.

Q 3.3-37

The Required Actions are modified by a Note that allows the inoperable channel ~~or one additional channel~~ to be bypassed for up to 4 hours for surveillance testing of other channels. The 6 hours allowed to restore the channel to OPERABLE status or to place the inoperable channel in the tripped condition, and the 4 hours allowed for testing, are justified in Reference 8.

AND

P.1 or P.2.1, P.2.2 ~~and P.2.3~~

Q 3.3-66

Condition P applies to:

- Containment Spray - Containment Pressure – High-High.
- Containment Isolation - Phase B Isolation - Containment Pressure - High-High.

Neither of these signals has input to a control function. Thus, two-out-of-three logic is necessary to meet acceptable protective requirements. However, a two-out-of-three design would require tripping a failed channel. This is undesirable because a single failure would then cause spurious containment spray initiation. Spurious spray actuation is undesirable because of the cleanup problems presented. Therefore, these channels are designed with two-out-of-four logic so that a failed channel may be bypassed rather than tripped. Note that one channel may be bypassed and still satisfy the single failure criterion. Furthermore, with one channel bypassed, a single instrumentation channel failure will not spuriously initiate containment spray. The containment spray signal is also interlocked with SI and will not initiate without simultaneous SI and containment spray signals.

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: Q 3.3-43 **APPLICABILITY:** CA, CP, DC, WC

REQUEST:

Revise ITS 3.3.1 Condition R Notes 1 and 2 per traveler TSTF-168. The 2-hour AOT should not be limited to only UVTA/STA maintenance.

Comment: TSTF pending NRR review. Based on 8/14/98 meeting TSTF rejected based on WCAP-14333 which prohibits "maintenance bypass."

FLOG RESPONSE (Original): TSTF-168 has been approved by the NRC. Therefore, the FLOG continues to pursue the changes associated with JFD 3.3-43.

FLOG RESPONSE (Revised): As discussed with the NRC reviewer on March 17, 1999, ITS 3.3.1, Condition R, is revised to delete the words "or maintenance." This wording is not in the CTS. TSTF-168 is withdrawn and all changes to the Condition R Notes are based on the CTS. JFD 3.3-117 is revised by the insertion of "Note 2" to clarify which note the change effects.

ATTACHED PAGES:

Encl. 2	3/4 3-7
Encl. 3A	5
Encl. 3B	4
Encl. 4	25
Encl. 5A	Traveler Status Page, 3.3-10
Encl. 5B	B 3.3-51
Encl. 6A	4, 9
Encl. 6B	8, 18

Remove strikeout

ACTION 9 - ~~With less than the Minimum Number of Channels OPERABLE, operation may continue provided the inoperable channel is placed in the tripped condition within the next 6 hours.~~ , or reduce Thermal Power to < P-7 in 12 hours. Note that the inoperable channel may be bypassed for up to 4 hours for surveillance testing. 01-49-LS18 Q 1-49

ACTION 10 - With the number of ~~channels~~trains OPERABLE one less than the ~~Minimum~~ ~~Total Number of~~ Required Channels ~~OPERABLE requirement~~. restore the inoperable train to operable status within 1 hour, or be in at least HOT STANDBY within 6 7 hours: however, one ~~channel~~train may be bypassed for up to 2 hours for ~~maintenance or~~ surveillance testing ~~per Specification 4.3.1.1~~ provided the other channel is OPERABLE. initiate action to fully insert all rods and 01-04-LG 01-66-LS45 Q 3.3j 01-13-LS6 TR 3.3-006 Q 3.3-43

ACTION 11 - With the number of OPERABLE channels or trains one less than the ~~Minimum~~Required Channels or trains ~~OPERABLE requirement~~. restore the inoperable channel or train to OPERABLE status within 48 hours or ~~open the Reactor trip breakers~~ within the next hour ~~fully insert all rods and~~ place the Rod control System in a condition incapable of rod withdrawal. 01-04-LG 01-55-LS39

ACTION 12 - With one of the diverse trip features (Undervoltage or shunt trip attachment) inoperable. restore it to OPERABLE status within 48 hours or ~~declare the breaker inoperable and apply ACTION 10~~ be in at least HOT STANDBY within the next 6 hours. The breaker shall not be bypassed while one of the diverse trip features is inoperable except for the time required for performing maintenance to restore the breaker to OPERABLE status. 01-14-A

ACTION 13 - With the number of OPERABLE channels one less than the ~~Total Number of~~ Required Channels. STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied: 01-43-A

DC 3.3 Ed ~~a.~~ ~~The Minimum Channels OPERABLE requirement is met, and~~ 01-04-LG

a ~~b.~~ The inoperable channel is placed in the tripped conditions within 6 hours: however, the inoperable channel may be bypassed for up to 72 hours for surveillance testing ~~per Specification 4.3.1.1~~ or for performing maintenance, OR 01-66-LS45 Q 3.3j 01-67-M Q 3.3-46

c. Be in MODE 3 in 12 hours.

ACTION 26 - With the number of OPERABLE channels one less than the ~~Minimum~~ Required Channels ~~OPERABLE requirement~~. restore the inoperable Channel to OPERABLE status within 6 hours or be in at least HOT STANDBY within the next 6 hours; however, one channel may be bypassed for up to 4 hours for surveillance testing ~~per Specification 4.3.1.1~~ provided the other channel is OPERABLE. 01-04-LG 01-66-LS45 Q 3.3j

ACTION 27 - With the number of OPERABLE channels less than the ~~Total Number of~~ Required Channels. STARTUP and/or POWER OPERATION may proceed provided that within 6 hours. for the affected RCS Loop Delta-T channel(s). either: 01-43-A

a. The Trip Time Delay threshold power level for zero seconds time delay is adjusted to 0% RTP. or 01-43-A

b. With the number of OPERABLE channels one less than the ~~Total Number of~~Required Channels. the affected Steam Generator Water Level-Low-Low channels are placed in the tripped condition.

Remove Strike Out

~~ACTION 28 - With the number of OPERABLE channels one less than the Total Number of Channels. STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:~~ ~~01-50-A~~ 01-19-LS8

~~a. The inoperable channel is placed in the trip condition within 6 hours, and~~

~~b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels per Specification 4.3.1.1.~~ , or

c. Reduce Thermal Power to < P-7 within 12 hours. DC 3.3-003

Q 3.3-43

CHANGE NUMBER	NSHC	DESCRIPTION
01-13	LS6	~~[ACTION Statement [10] is revised to note that the 2 hour [train and] reactor trip breaker bypass allowance for [train or] breaker surveillance testing can also be used for maintenance. This change does not impact the conclusions of WCAP-10271-P-A, Supplement 2, Rev. 1 since there is no change to the bypass time. This change is consistent with Traveler TSTF-168.]~~ ACTION Statement [10] is [also] revised to require restoration of an inoperable RTB within 1 hour or the plant must be in HOT STANDBY within the next 6 hours, consistent with NUREG-1431. This is less restrictive since an additional hour is provided for the transition to MODE 3.
01-14	A	In the ISTS Table 3.3.1-1, Function 20, the Reactor Trip Breaker (RTB) Undervoltage and Shunt Trip Mechanisms are separate from the RTB Functional Unit. The CTS have been revised to reflect these requirements. DC 3.3-Ed New [footnote (~~b~~ k) has] been added to the RTB Functional Unit to note that the same OPERABILITY requirements and ACTIONS apply to a bypass breaker if it is racked in and closed for bypassing an RTB. The bypass breakers were already handled in this fashion. ACTION [12] in CTS Table 3.3-1 has been revised accordingly. INSERT 1-14-A Q 1-14
01-15	A	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).
01-16	LS40	The requirement to verify the setpoint during the quarterly TADOT for RCP Underfrequency [and RCP Undervoltage] is deleted, consistent with NUREG-1431.
01-17	A	Consistent with NUREG-1431, LCO 3.3.1 Required ACTION D Note, CTS Table 3.3-1 ACTION Statement 2c ~~and new ACTION Statement 2.1 have~~ has been modified by a Note that allows the bypass to be used for surveillance testing or setpoint adjustment. Setpoint adjustment can be performed at power and may be required by other Technical Specifications. The reason for placing the channel in bypass does not affect the impact of having the channel in bypass. Q 3.3-40

CONVERSION COMPARISON TABLE - CURRENT TS 3/4.3

TECH SPEC CHANGE		APPLICABILITY			
NUMBER	DESCRIPTION	DIABLO CANYON	COMANCHE PEAK	WOLF CREEK	CALLAWAY
01-11 LS5	[New] ACTION Statement [39] is applied to the Low Fluid Oil Pressure and Turbine Stop Valve Closure trip functions. Rather than entry into LCO 3.0.3 if current ACTION Statements [6 and 11] are not met or if multiple low fluid oil pressure channels are inoperable, the new ACTION Statement requires inoperable channels to be tripped within 6 hours or power reduced below P-9 within 10 hours.	No, see CN 1-48-LS-4.	Yes	Yes	Yes
01-12 M	New ACTION Statement [8.1] is created to differentiate between those RTS interlocks required to be operable in MODE 1 only, and those interlocks required to be operable in MODES 1 and 2. If the interlock function is required to be operable in MODE 1 only and the LCO and ACTION requirements are not met, then new ACTION Statement [8.1] requires that the unit be taken to MODE 2 within 7 hours. In addition, current ACTION Statement [8] is revised for those interlocks required to be OPERABLE in MODES 1 and 2. If one channel is inoperable, the interlock must be determined to be in its required state or the plant must be in at least HOT STANDBY within 7 hours.	Yes	Yes	Yes	Yes
01-13 LS6	~~[ACTION Statement [10] is revised to note that the 2 hour [train and] reactor trip breaker bypass allowance for [train or] breaker surveillance testing can also be used for maintenance.]~~ ACTION Statement [10] is [also] revised to require restoration of an inoperable RTB within 1 hour or the plant must be in HOT STANDBY within the next 6 hours. This is less restrictive since an additional hour is provided for the transition to MODE 3.	Yes	Yes	Yes	Yes Q3.3-43

IV. SPECIFIC NO SIGNIFICANT HAZARDS CONSIDERATIONS

NSHC LS6
10 CFR 50.92 EVALUATION
FOR
TECHNICAL CHANGES THAT IMPOSE LESS RESTRICTIVE
REQUIREMENTS WITHIN THE TECHNICAL SPECIFICATIONS

Q 3.3-4

~~[ACTION Statement [10] is revised to note that the 2 hour [train and] reactor trip breaker bypass allowance for [train or] breaker surveillance testing can also be used for maintenance. This change does not impact the conclusions of WCAP-10271-P-A, Supplement 2, Rev. 1 since there is no change to the bypass time.]~~ 6
ACTION Statement ~~[9]~~ 10 is ~~[also]~~ revised to require restoration of an inoperable Reactor Trip Breaker (RTB) within 1 hour or the plant must be in HOT STANDBY within the next 6 hours. This is less restrictive than the current TS since an additional hour is provided for the transition to MODE 3.

The 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?

   Overall protection system performance will remain within the bounds of the previously performed accident analyses since no hardware changes are proposed. As noted in the Bases of NUREG-1431 Rev. 1, the Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging plant systems. The 1 hour and 6 hour Completion Times are equal to the time allowed by current LCO 3.0.3 for shutdown actions. The proposed shutdown requirement Completion Time change would result in an additional hour to achieve MODE 3. By allowing a shutdown time based on operating experience, this change would reduce the chances of an operator error or challenge to plant systems that could result from the more restrictive requirement in the current TS. The probability that an accident would occur during the 1 hour extension allowed by the proposed change is extremely small. ~~[Use of the 2 hour [train or] reactor trip breaker bypass allowance for maintenance will not change the unavailabilities used to determine core damage frequencies in WCAP-10271-P-A, Supplement 2, Rev. 1 since the bypass time allowance is not extended.]~~ Q 3.3-43 The proposed change will not affect any of the analysis assumptions for any of the accidents previously evaluated. The proposed change will not affect the probability of any event initiators nor will the proposed change affect the ability of any safety-related equipment to perform its intended function. There will be no degradation in the performance of nor an increase in the number of challenges imposed on safety-related equipment assumed to function during an accident situation. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

INDUSTRY TRAVELERS APPLICABLE TO SECTION 3.3

TRAVELER #	STATUS	DIFFERENCE #	COMMENTS
TSTF-19, Rev. 1	~~Not~~ Incorporated	NA	~~Not~~ NRC approved ~~as of traveler cut off date.~~ changes Bases only TR 3.3-004
~~TSTF-36, Rev. 2~~	~~Incorporated~~	~~3.3-34~~	Q 3.3-34
TSTF-37, Rev. 1	Not Incorporated	NA	ITS 5.6.8 still addresses PAM reports. Sections after ITS 5.6.7 were not renumbered.
TSTF-51	Not Incorporated	NA	Requires plant-specific reanalysis to establish decay time dependence for fuel handling accident.
~~TSTF-91~~	~~Not Incorporated~~	~~NA~~	~~[Trip Setpoints and] Allowable Values for loss of voltage and degraded voltage will remain in the TS.~~ TR 3.3-005
TSTF-111, Rev. ~~2~~ 4	Incorporated	NA	Q 1-03
TSTF-135, Rev. 1	Partially Incorporated	3.3-41, 3.3-44, 3.3-93, 3.3-95, 3.3-122, 3.3-142, 3.3-90, 3.3-91, 3.3-106	~~Traveler is too broad scope in nature; should have been separate travelers. Portions of the traveler that significantly clarify operability requirements have been incorporated.~~ TR 3.3-00[illegible]
TSTF-161, Rev. 1	Incorporated	3.3-79	Approved by NRC Q 3.3-79
TSTF-168	Not Incorporated	~~3.3-43~~ NA	~~Approved by NRC.~~ Q 3.3-43
TSTF-169	Incorporated	3.3-42	Approved by NRC. TR 3.3-003
~~WOG-106~~ TSTF-242	Incorporated	3.3-49	Q 3.3-49
~~Proposed Traveler~~ TSTF-246	Incorporated	3.3-107	~~WOG Mini-group Action Item # 45~~ Q 3.3-107
TSTF-311	Incorporated	3.3-143	TR 3.3-007

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
R. One RTB train inoperable.	-------------NOTES-------------	
	1. One train may be bypassed for up to 2 hours for surveillance testing ~~or maintenance~~, provided the other train is OPERABLE.	~~3.3-43~~ Q 3.3-43 ~~3.3-43~~
	2. One RTB may be bypassed only for ~~up to 2 hours~~the time required for performing maintenance on undervoltage or shunt trip mechanisms per CONDITION U, provided the other train is OPERABLE.	3.3-117 3.3-117 ~~3.3-03~~
	~~3. One RTB may be bypassed for up to 4 hours for logic testing per CONDITION Q, provided the other train is OPERABLE.~~	Q 3.3-03

	R.1 Restore train to OPERABLE status.	1 hour
	OR	
	R.2 Be in MODE 3.	7 hours
S. One or more ~~required~~ channels or trains inoperable.	S.1 Verify interlock is in required state for existing unit conditions.	1 hour 3.3-44 Q 3.3-44
	OR	
	S.2 Be in MODE 3.	7 hours

(continued)

BASES

ACTIONS Q.1 and Q.2 (continued)

next 6 hours. The Completion Time of 6 hours (Required Action Q.1) is reasonable considering that in this Condition, the remaining OPERABLE train is adequate to perform the safety function and given the low probability of an event during this interval. The Completion Time of 6 hours (Required Action Q.2) is reasonable, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging unit systems.

The Required Actions have been modified by a Note that allows bypassing one train up to ~~[4]~~ hours for surveillance testing, provided the other train is OPERABLE.

R.1 and R.2

Condition R applies to the RTBs in MODES 1 and 2. These actions address the train orientation of the RTS for the RTBs. With one train inoperable, 1 hour is allowed to restore the train to OPERABLE status or the unit must be placed in MODE 3 within the next 6 hours. The Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging unit systems. The 1 hour and 6 hour Completion Times are equal to the time allowed by LCO 3.0.3 for shutdown actions in the event of a complete loss of RTS Function. Placing the unit in MODE 3 ~~removes the requirement for this particular Function~~. TR 3.3-006

results in Condition C entry if one RTB train is inoperable

Remove strike out

Q 3.3-03

The Required Actions have been modified by ~~two~~ ~~three~~ Notes. Note 1 allows one ~~channel~~ ~~RTB~~ TRAIN to be bypassed for up to 2 hours for surveillance testing ~~or maintenance~~, provided the other ~~channel~~ train is OPERABLE. Note 2 allows one RTB to be bypassed only for the time required for performing ~~for up to 2 hours for~~ maintenance on undervoltage or shunt trip mechanisms per Condition U if the other RTB train is OPERABLE. ~~Note 3 allows one RTB to be bypassed for up to 4 hours for logic surveillance testing per Condition Q provided the other train is OPERABLE.~~ The ~~2 hour~~ time limits are ~~is~~ justified in Reference 7 ~~5 and 13~~. Q 3.3-43 Q 3.3-0

S.1 and S.2

Condition S applies to the P-6 and P-10 interlocks. With one or more ~~required~~ channels inoperable, ~~for one out of two or two out of four coincidence logic~~, the associated interlock must be verified by observation of the associated permissive annunciator window to be in its required state for the existing unit condition Q 3.3-44

(continued)

CHANGE NUMBER	JUSTIFICATION
3.3-37	Several ITS Required Action Notes are modified per CTS to allow a channel to be placed in bypass for surveillance testing. [ ]
3.3-38	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).
3.3-39	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).
3.3-40	~~This change adds "and setpoint adjustment" to ITS 3.3.1 Condition E, similar to the Note for Condition D. Setpoint adjustment is required by the Required Actions of other specifications. The clarity and consistency of the specification is enhanced by adding this note to Condition E, in the same manner as Condition D.~~ Not used. Q 3.3-40
3.3-41	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).
3.3-42	This change deletes ITS 3.3.1 Condition N per Traveler TSTF-169. Condition M is appropriate for Function 10.a to prevent sequential entry into Condition N followed by M and exceeding the evaluated Completion Time in WCAP-10271-P-A, Supplement 2, Rev. 1. With this change, there is no need to list separate Functions 10.a and 10.b and combining the Functions eliminates Applicability questions similar to the Condition M vs. N concern above.
3.3-43	~~This change revises ITS 3.3.1 Condition R Notes 1 and 2 per Traveler TSTF-168. The 2-hour AOT should not be limited to only UVTA/STA maintenance. This is consistent with the current TS and is acceptable because the specific maintenance activity which requires that a reactor trip breaker be bypassed does not affect the impact of having the breaker bypassed. [ ]~~ Not applicable to DCPP. SEE CONVERSION COMPARISON TABLE ENCLOSURE Q3.3-43
3.3-44	This change revises ITS 3.3.1 Conditions S and T and ITS 3.3.2 Condition L ~~as well as the number of Required Channels in Tables 3.3.1-1 and 3.3.2-1~~ to reflect current TS ACTION Statements [8 and 21]. The Conditions apply to one or more channels [or trains, as Condition T applies to permissive P-7,] because the safety function is served with the interlock in the appropriate state for existing plant conditions. ~~The existing plant design only requires 3 of the 4 channels (2-out-of-3 for P-11) for these interlocks to be operable.~~ Q 3.3-44 Q 3.3-44
3.3-45	A new CONDITION ~~and SR are~~ is added for the current licensing basis required seismic trip. DC ALL-005
3.3-46	A new CONDITION and SR are added for the current licensing basis required Steam Generator level low-low time delay trip. These changes affect both ITS 3.3.1 and 3.3.2.
3.3-47	Note 2 of SR 3.3.1.2 is revised to limit the power increase to less than 30% per the current licensing basis before the SR is complete.
3.3-48	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).
3.3-49	ITS SR 3.3.1.8 is revised to extend the conditional COT frequency for power and intermediate range channels from 4 hours after reducing power below P-10 to 12 hours, based on operating experience regarding the time needed to perform the COTs. It stands to reason that if 4 hours are allowed for 2 Source Range COTs, 12 hours should be allowed for 6 Intermediate Range and Power Range COTs. The SR continues to assure that the COTs are performed in a timely manner after the requisite plant conditions are entered. This change is consistent with Traveler ~~WOG-106~~ TSTF-242 Q 3.3-49
3.3-50	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).

Not Applicable to DCPP. See Conversion Comparison Table (Enclosure 6B). DC 3.3-004

CHANGE NUMBER	JUSTIFICATION	
3.3-109	~~Not used.~~ INSERT 3.3-109	Q 8-11
3.3-110	~~Not used.~~ INSERT 3.3-110	DCALL-005
3.3-111	~~This change adds a Note to ITS SR 3.3.1.7 for source range instrumentation to verify interlocks P-6 and P-10 are in their required state for existing unit conditions. This is consistent with the current TS and is an enhancement which is easily performed and provides additional assurance that the interlocks are functioning correctly.~~	DC 3.3-004
3.3-112	~~Not used.~~ INSERT 3.3-112	Q 12-05 (3.6)
3.3-113	~~Not used.~~ INSERT 3.3-113	Q 2-05 (2.0)
3.3-114	~~Not used.~~ INSERT 3.3-114	Q 3.3-66
3.3-115	~~Not used.~~ N/A to DCPP. See Conversion Comparison Table (Encl. 6B)	CP 3.3-011
3.3-116	ACTION J of ITS 3.3.2 is not used since DCPP does not rely on motor-driven AFW pump start with loss of both main FW pumps. The function exists, but is not credited in any accident analysis and is not part of ESFAS Function 6 in the CTS.	
3.3-117	This change to ITS 3.3.1 Condition R (NOTE 2) reflects current TS Table [3.3-1, ACTION Statement 12] which was based on NRC Generic Letter 85-09.	Q 3.3-43
3.3-118	This change is for consistency with ITS 3.7.10 Condition [G].	
3.3-119	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).	
3.3-120	~~ITS 3.3.1 Condition D is revised to reflect ITS SR 3.2.4.2 and CN 3.2-15 in the 3/4.2 package.~~ Not used.	Q 3.3-120
3.3-121	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).	
3.3-122	ITS 3.3.1 APPLICABILITY Note (b) for Functions 1, 5, 19-21 and Conditions C and K are revised to replace ACTIONS requiring the RTBs to be opened with ACTIONS that ensure subcriticality is maintained (i.e., by initiating action to fully insert ~~ing~~ all rods and ensuring the Rod Control System is incapable of rod withdrawal) yet do not initiate a feedwater isolation (P-4 and low T_{avg}) in MODE 3, consistent with Traveler TSTF-135.	TR 3.3-006
3.3-123	This change deletes ACTION L.2 and renumbers L.3 since the requirement to close the unborated water source valves is not in the CTS and is not part of the current licensing basis. This new requirement is not applicable to DCPP which has a licensed dilution accident evaluation (refer to License Amendment 28/27). The current licensing bases in accordance with NUREG 0800, Section 15.4.6 provides adequate assurance that a dilution event will be recognized and arrested in a timely fashion.	DC 3.3-Ed
3.3-124	Consistent with the current TS Table 4.3-1, Note [15], the note for ITS SR 3.3.1.4 is modified, a note is added to Table 3.3.1-1, and Function 20 are modified to clarify that the SR is required for the reactor trip bypass breaker local manual shunt trip only. The Bases for SR 3.3.1.14 clearly state that SR 3.3.1.14 includes the automatic undervoltage trip of the reactor trip bypass breakers. The Note (k) added to Table 3.3.1-1, Function 20 clarifies the Applicability of the undervoltage and shunt trip mechanisms to include those functions of the reactor trip bypass breakers when in use.	

TECHNICAL SPECIFICATION CHANGE		APPLICABILITY			
NUMBER	DESCRIPTION	DIABLO CANYON	COMANCHE PEAK	WOLF CREEK	CALLAWAY
3.3-42	Delete ITS 3.3.1 Condition N and combine Functions 10.a and 10.b per Traveler TSTF-169.	Yes	Yes	Yes	Yes
3.3-43	Revise ITS 3.3.1 Condition R Notes 1 and 2 per Traveler TSTF-168. The 2-hour AOT should not be limited to only UVTA/STA maintenance.	~~Yes~~ NO	Yes	~~Yes~~ NO	~~Yes~~ NO Q 3.3-43
3.3-44	Revise ITS 3.3.1 Conditions S and T and ITS 3.3.2 Condition L e ~~as well as the number of Required Channels [or trains as Condition T applies to permissive P-7] in Tables 3.3.1-1 and 3.3.2-1,~~ to reflect CTS ACTION Statements [8 and 20].	Yes	Yes	Yes	Yes Q 3.3-44
3.3-45	A new CONDITION ~~and SR are~~ IS added for the current licensing basis required seismic trip.	Yes	No, not in CTS.	No, not in CTS.	No, not in CTS. DC ALL-005
3.3-46	A new CONDITION and SR are added for the current licensing basis required Steam Generator level low-low time delay trip. These changes affect both ITS 3.3.1 and 3.3.2.	Yes	No, not in CTS.	No, not in CTS.	No, not in CTS.
3.3-47	Note 2 of SR 3.3.1.2 is revised to limit the power increase to less than 30% per the current licensing basis before the SR is complete.	Yes	No, not in CTS.	No, not in CTS.	No, not in CTS.
3.3-48	ITS SR 3.3.1.7 has a NOTE that provides a four hour delay in the requirement to perform the Surveillance for source range instrumentation when entering MODE 3 from MODE 2. Wolf Creek has deleted this NOTE in accordance with current Surveillance Requirements and the revisions made in ITS Table 3.3-1. The requirements for this Surveillance will be maintained by SR 3.3.1.8 in Table 3.3.1-1 for each applicable Function. SR 3.3.1.8 has been structured to cover NI Functions specified in ITS Table 3.3.1-1 and SR 3.3.1.7 has been structured to cover all other Functions. This similar to how the NUREG has structured SR 3.3.1.10 and SR 3.3.1. 11.	No	No	Yes	No

TECHNICAL SPECIFICATION CHANGE		APPLICABILITY			
NUMBER	DESCRIPTION	DIABLO CANYON	COMANCHE PEAK	WOLF CREEK	CALLAWAY
3.3-115	~~Not used~~. Adds CPSES specific Automatic Actuation Logic and Actuation Relay function to ITS 3.3.5.	~~N/A~~ No	~~N/A~~ Yes	~~N/A~~ No	~~N/A~~ No
3.3-116	ACTION J of ITS 3.3.2 is not used since DCPP does not rely on motor-driven AFW pump start with loss of both main FW pumps.	Yes	No	No	No Q 3.3-43
3.3-117	This change to ITS 3.3.1 Condition R NOTE 2 reflects CTS Table [3.3-1, ACTION Statement 12] which was based on NRC Generic Letter 85-09.	Yes	~~No, not in CTS~~ Yes	Yes	Yes Q 3.3-117
3.3-118	This change is for consistency with ITS 3.7.10 Condition [G].	Yes	Yes	Yes	Yes
3.3-119	This change reflects Callaway-specific BDMS analysis restrictions associated with RCS mixing volume and dilution flow rate. These are administratively controlled under the CTS, as approved in OL Amendment No. 94 dated March 7, 1995. However, with the conversion to ITS 3.3.9, these analysis assumptions should be included in the body of the TS.	No	No	No	Yes
3.3-120	~~ITS 3.3.1 Condition D is revised to reflect ITS SR 3.2.4.2 and CN 3.2-15 in the 3/4.2 package~~. Not used.	~~Yes~~ NA	~~Yes~~ NA	~~Yes~~ NA	~~Yes~~ NA Q 3.3-120
3.3-121	For Callaway, ITS 3.3.9 is revised to reflect that only one BDMS train is required OPERABLE in MODE 5 and that the suspension of positive reactivity additions and accelerated SDM verifications are required only if no source range neutron flux indicator is OPERABLE.	No	No	No	Yes
3.3-122	ITS 3.3.1 APPLICABILITY Note (b) for Functions 1, 5, 19-21 and Conditions C and K are revised to replace ACTIONS requiring the RTBs to be opened with ACTIONS that ensure subcriticality is maintained (i.e., by initiating action to fully inser~~ting~~ all rods and ensuring the Rod Control System is incapable of rod withdrawal) yet do not initiate a feedwater isolation (P-4 and low T_{avg}) in MODE 3, consistent with Traveler TSTF-135.	Yes	Yes	Yes	Yes TR 3.3-006

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: Q 3.3-46 **APPLICABILITY:** DC

REQUEST:

A new CONDITION and SR are added for the current licensing basis required steam generator level low-low time delay trip. These changes affect both ITS 3.3.1 and 3.3.2.

Comment: Should action X.2 read "Place the affected SG-low low level channel(s) in trip"?

It may be desirable to include a 3.0.3 alternative in the Required Actions for Condition W and Condition X.

ITS Table 3.3.1-1, Function 14.b (Steam Generator Water Level-Low Low, > 50% power time delay) shows the LCO applicable only in MODE 1. The CTS table shows the LCO applicable in MODE 1 and 2. This is a change from the CTS that is neither identified in the CTS markup nor discussed in the DOC.

Condition X covers only inoperability of the SG-low low level trip time delays. It should cover the entire DT function.

For consistency with the iSTS format the trip time delay footnote (k) should be moved to the Trip Setpoint and Allowable Value columns. for the RCS Loop delta T equivalent power# 50% function.

Since the time delay function is required to be operable down through Mode 3 (CTS - Mode 3 ###) for the RCS Loop delta T at equivalent powers # 50% RTP function, then the applicability for the time delay in ITS should also extend down through Mode 3. Provide a revised applicability for ITS function 6.d.1.

The CTS allows operation to continue under the equivalent of ITS action M.1 if one or more channels is inoperable, but the ITS limits this to one channel inoperable. Is the application of the more restrictive requirement here intentional? (Note the CTS limits the use of action M.2 to the condition of one channel inoperable.

There is no "LCO 3.0.3 equivalent" action for Condition M. Is this intentional ?

FLOG RESPONSE (Original): Comment 1): The words "water level" and "channel(s)" have been inserted into RTS CONDITION X to read as requested.

Comments 2) & 8): An LCO 3.0.3 alternative has been added to both ACTIONS W and X for RTS and ACTION M for ESFAS, as suggested by the reviewer. This is consistent with other NUREG-1431 ACTIONS and the intent of LCO 3.0.3. The LCO 3.0.3 alternative will require MODE 3 entry within 12 hours for ACTIONS W and X and MODE 4 entry within 18 hours for ACTION M if the effected channels cannot be tripped. This action is more restrictive by 1 hour than LCO 3.0.3 and a new M-DOC 01-67 M has been created to describe this revision to CTS ACTIONS 29 and 13.

Comment 3): Functional Unit 14.b is revised to indicate that the LCO is applicable in MODES 1 and 2, to be consistent with the CTS.

Comment 4): ACTION X (RTS) has been revised to be applicable to the entire Trip Time Delay and RCS delta-T equivalent power input function, not just the time delays, which is consistent with the design and the intent of the CTS. CTS ACTION 6 (RTS) and ACTION 20 (ESF) notes, (which are included in ITS RTS ACTION E and ESFAS ACTION D) are incorporated into ACTION X and M respectively. These revisions, although not explicitly stated in the CTS, are inferred from the ACTIONS applicable to SG level. These notes, which have been modified for clarification due to the multiple applicabilities of ACTIONS X and M, allow a tripped SG channel or one additional channel to be bypassed for up to 4 hours for testing. The Bases for ITS ACTION X (RTS) and ACTION M (ESFAS) have been revised to clarify the action required for an inoperable Trip Time Delay or RCS delta-T equivalent power input and to incorporate the above information. For additional information, FSAR 7.2.1.1.1.5 describes this function and the interaction between the SG level trip, the trip delay and the RCS delta-T equivalent power input.

Comment 5): Footnote (k) and (l) have been moved to the Trip Set point and Allowable Value columns.

Comment 6): The CTS implied MODE 3 Applicability for the Trip Time Delay at equivalent powers ≤ 50% RTP for CTS ESF function 6.d has been revised to extend through MODE 3. In addition, the Table 3.3.1-1 and 3.3.2-1 presentation has been revised to clarify the applicability and to make each table consistent with the other.

Comment 7): ITS ACTION M has been revised to apply to one or more inoperable SG water level-low-low Trip Time Delay timers and the associated input from the RCS Delta-T equivalent power channels. The allowance to trip only a single inoperable SG channel or adjust the time delay threshold power level of one or more inoperable Trip Time Delay channels is clarified in the Bases for RTS ACTION X and ESFAS ACTION M.

FLOG RESPONSE (Supplemental): Based upon conversations with NRC Staff on March 26, 1999, the requirements of LCO 3.3.1, Condition X has been revised to read "One or more SG Water Level-Low Low Trip Time Delay Channel(s) inoperable." LCO 3.3.2, Condition M has been revised to read " One or more SG Water Level-Low Low Trip Time Delay Channel(s) inoperable." LCO 3.3.1, Required Action X.1, has been revised to state: "Set the Trip Time Delay to Zero seconds." LCO 3.3.2, Condition M.1 has been revised to state: "Set the Trip Time Delay to Zero seconds." Table 3.3.1-1, Functional Unit 14 has been divided into 14.a and 14.b. The title of 14.b has been made consistent with Condition X. Table 3.3.2-1, Functional Unit 6.d, has been divided into 6.d.(1) and 6.d.(2). The title of 6.d.(2) has been made consistent with Condition M. Table 3.3.1-1, Note 3, and Table 3.3.2-1, Note I, have been revised to have the same format as Note 1 and 2 in Table 3.3.1-1. The Bases have been revised to be consistent with these changes.

ATTACHED PAGES:

Encl. 5A	3.3-12, 3.3-22, 3.3-28, 3.3-34, 3.3-47, 3.3-48
Encl. 5B	B 3.3-27, B 3.3-28, B 3.3-29, B 3.3-53, B 3.3-98, B 3.3-100, B 3.3-122

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
W. One channel inoperable	------NOTE------ The inoperable channel may be bypassed for up to 72 hours for surveillance or maintenance. ------ W.1 Place channel in trip SET	6 hours 3.3-45
	OR W.2.1 Be in MODE 3	12 hours Q 3.3-46
X. One or more SG low low water level Trip Time Delay ~~circuit delay timers~~ CHANNEL(S) inoperable ~~or RCS loop Delta-T equivalent power input channels~~	INSERT NOTE X-M X.1. ~~Adjust~~ SET the Trip Time Delay ~~threshold power level for 0~~ seconds ~~time delay to 0% RTP~~ TO ZERO.	6 hours 3.3-46 Q 3.3-46
	OR X.2. Place the affected SG low low ~~level~~ water level channel(s) in trip.	6 hours
	OR X.3.1 Be in MODE 3	12 hours Q 3.3-46

Insert for Q 3.3-46

Enclosure 5A page 3.3-12 and 3.3-34
Insert NOTE X-M

------------NOTE------------
The inoperable ~~SG~~ channel
or one additional channel
may be bypassed for up to
4 hours for surveillance
testing of other channels.

Table 3.3.1-1 (page 4 of ~~8~~10)
Reactor Trip System Instrumentation

DC 3.3-006 ED

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	Nominal TRIP SETPOINT~~(a)~~
						3.3-103
11. Reactor Coolant Pump (RCP) Breaker Position	1(g)	1 per RCP	M	SR 3.3.1.14	NA	NA
~~a. Single Loop~~	~~1(h)~~	~~1 per RCP~~	~~O~~	~~SR 3.3.1.14~~	~~NA~~	~~NA~~
~~b. Two Loops~~	~~1(i)~~	~~1 per RCP~~	~~M~~	~~SR 3.3.1.14~~	~~NA~~	~~NA~~
					7817	B-PS DC ALL-005
12. Undervoltage RCPs	1(g)	~~[3]~~ 2 per bus	M	SR 3.3.1.9 SR 3.3.1.10 ~~SR 3.3.1.16~~ SR 3.3.1.16	≥ ~~[4760]~~ ~~7730~~ V-each bus	~~[4830]~~ 8050 V-each bus
					~~3.3-55~~ 3.3-55	B-PS B
13. Underfrequency RCPs	1(g)	3 per bus	M	SR 3.3.1.9 SR 3.3.1.10 ~~SR 3.3.1.16~~ SR 3.3.1.16	≥ ~~[57.1]~~ 53.9 Hz-each bus	~~[57.5]~~ 54.0 Hz-each bus
						B-PS
14. a Steam Generator (SG) Water Level - Low Low	1.2	~~[4~~ 3 per SG~~]~~	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 ~~SR 3.3.1.16~~ SR 3.3.1.16	≥ ~~[30.4]~~ ~~6.8%~~ 7.0	~~[32.3]~~ 7.2% DC ALL-005 3.3-46
~~a Trip Time Delay (TTD) from~~ ~~Coincident Attn~~ b. SG Water Level - Low low trip time Delay (TTD) ~~a) RCS Loop ΔT equivalent to power ≤ 50% RTP with a time delay (TD).~~	1.2	4 ~~(1/loop)~~	X	SR 3.3.1.7 SR 3.3.1.10	TTD for RCS loop ΔT variable input ≤ ~~51.5%~~ 50.7% RTP ≤ ~~(1.01)~~ TD (Note 3) and for RCS loopΔT variable input > ~~51.5~~ 50.7% RTP ~~T~~TD=0	TTD Q3.3.46 for RCS loopΔT variable input ≤50% ≤ TD (Note 3) and for RCS loopΔT variable input > 50% RTP ~~T~~TD=0
~~OR~~						
~~b) RCS Loop ΔT equivalent to power > 50% RTP with no time delay.~~	~~1~~	~~4(1/loop)~~	~~X~~	~~SR 3.3.1.7~~ ~~SR 3.3.1.10~~		

Table 3.3.1-1 (page 810 of 810)
Reactor Trip System Instrumentation

Note 2: Overpower ΔT

The Overpower ΔT Function Allowable Value shall not exceed the following Trip Setpoint by more than ~~[3]~~ ~~1.0~~% of ΔT span. 0.46 ~~for hot leg or cold leg temperature inputs.~~ B-PS 3.3-10 DC ALL-005 3.3-110

$$\Delta T\frac{(1+\tau_4 s)}{(1+\tau_5 s)} \le \Delta T_0 \left\{K_4 - K_5\frac{\tau_3 s}{1+\tau_3 s}T - K_6\left[T - T''\right] - f_2(\Delta I)\right\}$$ 3.3-13

Where: ΔT is measured RCS ΔT, °F. loop specific DC ALL-005
ΔT_0 is the indicated ΔT at RTP, °F.
s is the Laplace transform operator, sec^{-1}.
T is the measured RCS average temperature, °F. loop specific indicated
T'' is the nominal T_{avg} at RTP, ≤ ~~[588]~~ 576.6 (Unit 1) & 577.6 (Unit 2)°F. 3.3-110

K_4 = ~~[1.09]~~ 1.072 K_5 = ~~[0.02]~~ 0.0174/°F for increasing T_{avg} K_6 = ~~[0.00128]~~ 0.00145/°F when T > T'' B-PS
0/°F for decreasing T_{avg} 0/°F when T ≤ T''
~~τ_4 ≥ [8] sec~~ ~~τ_5 ≤ [3] sec~~ τ_3 = ~~[2]~~10 sec 3.3-13
τ_4 = ~~[2]~~0 sec τ_5 = ~~[10]~~0 sec 3.3-10

$f_2(\Delta I)$ = 0% RTP for all ΔI.

Strike out inequalities and insert equal signs

Q 2-04(2.0)

Note 3: Steam Generator Water Level-Low Low ~~Trip~~ Time Delay 3.3-108 3.3-46

TD = B1(P)^3 + B2(P)^2 + B3(P) + B4

Where: P = RCS Loop ΔT Equivalent to Power (%RTP), P ≤ 50% RTP

TD = Time delay for Steam Generator Water Level Low-Low Reactor Trip (in seconds)

B1 = -0.007128 sec/(RTP)^3

B2 = +0.8099 sec/(RTP)^2 Q 3.3-46

B3 = -31.40 sec/(RTP)

B4 = +464.1 sec

THE STEAM GENERATOR WATER LEVEL-LOW LOW TIME DELAY FUNCTION POWER ALLOWABLE VALUE SHALL NOT EXCEED THE FOLLOWING TRIP SETPOINT POWER BY MORE THAN 0.7% RTP.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~K. (continued)~~	~~K.2.1 Be in MODE 3.~~ ~~AND~~ ~~K.2.2 Be in MODE 5.~~	~~12 hours~~ ~~42 hours~~
L. One or more ~~required~~ channels or trains inoperable.	L.1 Verify interlock is in required state for existing unit condition. OR L.2.1 Be in MODE 3. AND L.2.2 Be in MODE 4	1 hour 3.3-44 Q 3.3-44 7 hours 13 hours
M. One RCS Loop Delta-T channel inoperable. ~~or more SG water level-low-low Trip Time Delay circuit trains or the input~~ ONE OR MORE SG Water Level-Low Low trip Time Delay CHANNEL(S) INOPERABLE	INSERT NOTE X-M M.1 ~~Adjust~~ SET the Trip Time Delay ~~threshold power level~~ for zero seconds ~~time delay to 0% RTP~~. OR M.2 Place the affected SG water level low-low channel(s) in trip. OR M.3.1 Be in MODE 3 AND M.3.2 Be in MODE 4	6 hours 3.3-46 Q 3.3-46 6 hours 12 hours 18 hours Q 3.3-46

Insert for Q 3.3-46

Enclosúre 5A page 3.3-12 and 3.3-34
Insert NOTE X-M

------------NOTE-------------
The inoperable ~~SG~~ channel 6
or one additional channel
may be bypassed for up to
4 hours for surveillance
testing of other channels.

Table 3.3.2-1 (page ~~6~~7 of ~~8~~11)
Engineered Safety Feature Actuation System Instrumentation

DC 3.3-006

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	ED NOMINAL (a) TRIP SETPOINT ~~(a)~~
5. Turbine Trip and Feedwater Isolation						PS
a. Automatic Actuation Logic and Actuation Relays	1,2(j), ~~[3]~~ ~~(j)~~	2 trains	H ~~[G]~~	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA
b. SG Water Level – High High (P-14)	1,2(j), ~~[3]~~ ~~(j)~~	3 per SG	J ~~I~~ ~~[D]~~	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 ~~SR 3.3.2.10~~ SR 3.3.2.10	≤ ~~[84.2]~~ ~~75.9%~~ 75.2	B B-PS Q 3.3-127 ~~[82.4]~~ ~~75%~~ DC ALL-005
c. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
6. Auxiliary Feedwater						DC ALL-001 3.3-58 3.3-139
~~a. Manual~~	~~1,2,3~~	~~1 sw/pp~~	~~N~~	~~SR 3.3.2.8~~ 13	~~NA~~	~~NA~~
~~a~~ b. Automatic Actuation Logic and Actuation Relays (Solid State Protection System)	1,2,3	2 trains	G	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA ~~3.3-55~~ Q 3.3-55
c. NOT USED ~~b. Automatic Actuation Logic and Actuation Relays (Balance of Plant ESFAS)~~	~~1,2,3~~	~~2 trains~~	~~G~~	~~SR 3.3.2.3~~	~~NA~~	~~NA~~ 3.3-01
d.1 ~~c.~~ SG Water Level – Low Low	1,2,3 ~~(k)~~	3 per SG	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 ~~SR 3.3.2.10~~ SR 3.3.2.10	≥ ~~[30.4]~~ ~~6.8%~~ 7.0	DC ALL-005 B-PS B 3.3-46 Q 3.3-46 ~~[32.2]~~ ~~7.2%~~

d.2) SG Water Level - low Low trip Time Delay (TTD) (Q 3.3-46)

DC 3.3-006

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	ED NOMINAL (a) TRIP SETPOINT ~~(a)~~
~~Coincident with:~~						3.3-46 Q3.3-46
~~1) RCS Loop ΔT Equivalent to Power ≤ 50% RTP~~ e	~~1, 2~~ e	~~4(1/loop)~~	~~D~~	~~SR 3.3.2.5 SR 3.3.2.9~~ e	for RCS Loop ΔT Variable input ≤ ~~51.5%~~ 50.7% RTP DC ALL-005	for RCS Loop ΔT variable input @ 50% RTP Q3.3-46
~~With a time delay (TD) from~~ Trip	1, 2, 3	4 ~~(1/loop)~~ e	M	SR 3.3.2.5 SR 3.3.2.9	TTD ≤ (1.01) TD (k)(l) e and for	TTD TD (l) and for
~~OR~~ e						
~~2) RCS Loop ΔT Equivalent to Power > 50% RTP~~	~~1, 2~~	~~4(1/loop)~~	~~D~~	~~SR 3.3.2.5 SR 3.3.2.9~~	RCS Loop ΔT variable input > ~~51.5%~~ 50.7% RTP DC ALL-005	RCS Loop ΔT variable input @ 50% RTP
~~With no time delay~~ e	~~1, 2~~	~~4(1/loop)~~	~~M~~	~~SR 3.3.2.5 SR 3.3.2.9~~	TTD = 0	TTD = 0

move row

DC 3.3-006   Q 3.3-46

(continued)

a. A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is re-adjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions. EC

(j) Except when all MFIVs, MFRVs, and associated bypass valves are closed and de-activated or isolated by a closed manual valve. B

(k) For Mode 3, the Trip Time Delay associated with the Steam Generator Water Level-Low-Low channel must be less than or equal to 464.1 seconds. 3.3-46

(l) Steam Generator Water Level-Low Low ~~Trip~~ Time Delay 3.3-46

$TD = B1(P)^3 + B2(P)^2 + B3(P) + B4$

Where: P = RCS Loop ΔT Equivalent to Power (%RTP), P ≤ 50% RTP

TD = Time delay for Steam Generator Water Level Low-Low (in seconds)

B1 = -0.007128 sec/(RTP)^3

B2 = +0.8099 sec/(RTP)^2

B3 = -31.40 sec/(RTP)

B4 = +464.1 sec

Q 3.3-46

THE STEAM GENERATOR WATER LEVEL-LOW LOW TIME DELAY FUNCTION POWER ALLOWABLE VALUE SHALL NOT EXCEED THE FOLLOWING TRIP SETPOINT POWER BY MORE THAN 0.7% RTP.

remove strike out

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

13. Underfrequency Reactor Coolant Pumps (continued)

The LCO requires ~~three~~ two Underfrequency RCPs channels per bus to be OPERABLE ~~(1 per bus both busses)~~. DC ALL-002

In MODE 1 above the P-7 setpoint, the Underfrequency RCPs trip must be OPERABLE. Below the P-7 setpoint, all reactor trips on loss of flow are automatically blocked ~~since no conceivable power distributions could occur that would cause a DNB concern at this low power level~~ since there is insufficient heat production to be concerned about DNB. Above the P-7 setpoint, the reactor trip on loss of flow in two or more RCS loops is automatically enabled.

14. Steam Generator Water Level – Low Low

Q 3.3-46

a. The SG Water Level – Low Low trip Function ensures that protection is provided against a loss of heat sink ~~and actuates the AFW System prior to uncovering the SG tubes~~ in the event of a loss of feedwater flow to one or more SGs. The SGs are the heat sink for the reactor. In order to act as a heat sink, the SGs must contain a minimum amount of water. A narrow range low low level in any SG is indicative of a loss of heat sink for the reactor. The level transmitters provide input to the SG Level Control System. Therefore, the actuation logic must be able to withstand an input failure to the control system, which may then require the protection function actuation, and a single failure in the other channels providing the protection function actuation. This Function also performs the ESFAS function of starting the AFW pumps on low low SG level.

DC3.3-ED

The LCO requires ~~four~~ three channels of SG Water Level – Low Low per SG ~~(1 per SG in one SG)~~ and four channels of RCS ΔT (1/loop) to be OPERABLE. The installation of the median signal selector (MSS) and four channels of RCS ΔT (1/loop) effectively eliminates the possibility that a single random failure could cause a control system action that results in a condition requiring protection action, and also prevent proper operation of a protection system channel designed to protect against the condition. Thus, the MSS prevents interaction between the feedwater control and reactor protection systems in accordance with the requirements of IEEE 279-1971, "Criteria for Protection Systems for Nuclear Power Generating Stations." Removal of this interaction eliminates the need for the low feedwater flow reactor trip. The MSS will functionally separate steam generator narrow range level protection channels (low-low steam generator water level trip) to provide compliance with IEEE 279-1971 and satisfy the original design basis. ~~for four loop units in which these channels are shared between protection and control. In two, three, and four loop units where three SG Water Levels are dedicated to the RTS, only three channels per SG are required to be OPERABLE.~~ This trip is actuated on two out of three low-low water level signals occurring in any steam generator. If a low-low water level condition is detected in one steam generator, signals shall be generated to trip the reactor and start the motor

(continued)

BASES

driven auxiliary feedwater pumps. If a low-low water level condition is detected in two or more steam generators, a signal is generated to start the turbine driven auxiliary feedwater pump as well.

Q3.3-46

INSERT 14.b

b. The signals to actuate reactor trip and start auxiliary feedwater pumps maybe delayed through the use of a Trip Time Delay (TTD) system for reactor power levels below 50% of RTP. Low-low water level in any protection set in any steam generator will generate a signal which starts an elapsed time trip delay timer. The allowable trip time delay is based upon the prevailing power level at the time the low-low level trip setpoint is reached. If power level rises after the trip time delay setpoints have been determined, the trip time delay is re-determined (i.e., decreased) according to the increase in power level. However, the trip time delay is not changed if the power level decreases after the delay has been determined. The use of this delay allows added time for natural steam generator level stabilization or operator intervention to avoid an inadvertent protection system actuation.

In MODE 1 or 2, when the reactor requires a heat sink, the SG Water Level - Low Low trip must be OPERABLE. The normal source of water for the SGs is the Main Feedwater (MFW) System (not safety related). The MFW System is only in operation in MODE 1 or 2. The AFW System is the safety related backup source of water to

THE TIME DELAY VALUE USED IS DETERMINED AS DIRECTED UNDER NOTE 3.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

14. Steam Generator Water Level - Low Low (continued)

ensure that the SGs remain the heat sink for the reactor. During normal startups and shutdowns, the AFW System provides feedwater to maintain SG level. In MODE 3, 4, 5, or 6, the SG Water Level - Low Low Function does not have to be OPERABLE because the MFW System is not in operation and the reactor is not operating or even critical. Decay heat removal is accomplished by the AFW System in MODE 3 (and 4, prior to going on RHR) and by the Residual Heat Removal (RHR) System in MODE 4, 5, or 6.

INSERT 14.b

Q 3.3-46

15. Steam Generator Water Level - Low, Coincident With Steam Flow/Feedwater Flow Mismatch

NOT USED

~~SG Water Level - Low, in conjunction with the Steam Flow/Feedwater Flow Mismatch, ensures that protection is provided against a loss of heat sink and actuates the AFW System prior to uncovering the SG tubes. In addition to a decreasing water level in the SG, the difference between feedwater flow and steam flow is evaluated to determine if feedwater flow is significantly less than steam flow. With less feedwater flow than steam flow, SG level will decrease at a rate dependent upon the magnitude of the difference in flow rates. There are two SG level channels and two Steam Flow/Feedwater Flow Mismatch channels per SG. One narrow range level channel sensing a low level coincident with one Steam Flow/Feedwater Flow Mismatch channel sensing flow mismatch (steam flow greater than feed flow) will actuate a reactor trip.~~

~~The LCO requires two channels of SG Water Level - Low coincident with Steam Flow/Feedwater Flow Mismatch.~~

~~In MODE 1 or 2, when the reactor requires a heat sink, the SG Water Level - Low coincident with Steam Flow/Feedwater Flow Mismatch trip must be OPERABLE. The normal source of water for the SGs is the MFW System (not safety related). The MFW System is only in operation in MODE 1 or 2. The AFW System is the safety related backup source of water to ensure that the SGs remain the heat sink for the reactor. During normal startups and shutdowns, the AFW System provides feedwater to maintain SG level. In MODE 3, 4, 5,~~

(continued)

BASES

ACTIONS

U.1, ~~U.2.1,~~ and U.2.~~2~~ (continued)

one or more TR 3.3-006

With the ~~RTBs open and the~~ unit in MODE 3, Condition C is entered if the inoperable trip mechanism has not been restored and the Rod Control System is capable of rod withdrawal or all rods are not fully inserted. ~~this trip Function is no longer required to be OPERABLE.~~ The affected RTB shall not be bypassed while one of the diverse features is inoperable except for the time required to perform maintenance to restore the inoperable trip mechanism to OPERABLE status, consistent with Ref. 13. ~~one of the diverse features. The allowable time for performing maintenance of the diverse features is 2 hours for the reasons stated under Condition R.~~

The Completion Time of 48 hours for Required Action U.1 is reasonable considering that in this Condition there is one remaining diverse feature for the affected RTB, and one OPERABLE RTB capable of performing the safety function and given the low probability of an event occurring during this interval.

V.1

NOT USED
~~With two RTS trains inoperable, no automatic capability is available to shut down the reactor, and immediate plant shutdown in accordance with LCO 3.0.3 is required.~~

W.1 and W.2

Q 3.3-46

Condition W applies to the Seismic Trip, in MODES 1 and 2. With one of the channels inoperable, START UP and/or POWER OPERATION may proceed provided the inoperable channel is placed in trip within the next 6 hours. If a direction is inoperable, then the channel must be considered inoperable. Placing the channel in the tripped condition creates a partial trip condition requiring only one out of two logic for actuation for that particular location.

The Required Actions have been modified by a Note that allows placing the inoperable channel in the bypassed condition for up to 72 hours while performing routine surveillance testing of the other channels. The allowed 72 hour bypass time is reasonable based on the low probability of an event occurring while the channel is bypassed and on the time required to perform the required surveillance testing.

X.1, X.2 and X.3

Q 3.3-46

~~Condition X applies to the Trip Time Delay (TTD) circuitry for the SFG Water Level-Low Low trip function when THERMAL POWER is less than or equal to 50% RTP in MODES 1 and 2. With one or more TTD circuitry delay timers inoperable, adjust the threshold power level for no time delay to 0% RTP, or place the affected SFG low low level in trip. The Completion Time of 6 hours is based on Reference 7.~~

INSERT ACTION X BASES

(continued)

Insert for Q 3.3-46

Enclosure 5B page B 3.3-53
Insert ACTION X Bases

Condition X applies to the Trip Time Delay (TTD) circuitry for the SG Water Level-Low Low trip function in MODES 1 and 2. With one or more TTD circuitry delay timers inoperable or the RCS delta-T equivalent power input inoperable, 6 hours are allowed to adjust the threshold power level for no time delay to 0% RTP. This sets the TTD timer to zero seconds and effectively removes its input from the SG water level circuit. If the TTD timer cannot be set to zero seconds for a single SG water level control, then the affected SG water level low-low channel must be placed in trip. Only one SG water level low-low channel can be placed in trip ~~since the trip coincidence is two out of three~~ position without tripping the plant. The Completion Time of 6 hours is reasonable considering the nature of these functions and the low probability of an event occurring during this interval as justified in Reference 7. Q 3.3-46

If the TTD threshold power for no time delay cannot be adjusted to 0% RTP (zero seconds time delay) or the single SG water level channel cannot be placed in the trip condition within the specified Completion Time, the unit must be placed in a MODE where these Functions are not required OPERABLE. The 12 hours allowed to place the unit in MODE 3 is a reasonable time, based on operating experience, to place the unit in MODE 3 from full power in an orderly manner and without challenging unit systems.

The Required Actions have been modified by a Note that allows placing the SG water level channel or one additional channel in the bypassed condition for up to 4 hours while performing routine surveillance testing of the other channels.

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

c. Turbine Trip and Feedwater Isolation - Safety Injection (continued)

generator are not in service and this Function is not required to be OPERABLE.

6. Auxiliary Feedwater

The AFW System is designed to provide a secondary side heat sink for the reactor in the event that the MFW System is not available. The system has two motor driven pumps and a turbine driven pump, making it available during normal unit operation, during a loss of AC power, a loss of MFW, and during a Feedwater System pipe break. The normal source of water for the AFW System is the condensate storage tank (CST) ~~(normally not safety related). A low level in the CST will automatically realign the pump suctions to the Essential Service Water (ESW) System (safety related)~~. The AFW System is aligned so that upon a pump start, flow is initiated to the respective SGs immediately.

a. Auxiliary Feedwater - Manual Initiation

Manual initiation of Auxiliary Feedwater can be accomplished from the Control Room. Each of the three AFW pumps has a switch for manual initiation. The LCO requires three channels to be OPERABLE.

~~a~~ b. Auxiliary Feedwater - Automatic Actuation Logic and Actuation Relays (Solid State Protection System)

Automatic actuation logic and actuation relays consist of the same features and operate in the same manner as described for ESFAS Function 1.b.

~~b~~ c. NOT USED ~~Auxiliary Feedwater - Automatic Actuation Logic and Actuation Relays (Balance of Plant ESFAS)~~

~~Automatic actuation logic and actuation relays consist of the same features and operate in the same manner as described for ESFAS Function 1.b.~~

~~c~~ ~~d~~ d.1. Auxiliary Feedwater - Steam Generator Water Level - Low Low

Q3.3-46

SG Water Level - Low Low provides protection against a loss of heat sink. A feed line break, inside or outside of containment, or a loss of MFW, would result in a loss of SG water level. SG Water Level - Low Low provides input to the SG

(continued)

BASES (d.1)) Q3.3-46

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

e ~~g~~ d.1) Auxiliary Feedwater – Steam Generator Water Level – Low Low

Level Control System. Therefore, the actuation logic must be able to withstand both an input failure to the control system which may then require a protection function actuation and a single failure in the other channels providing the protection function actuation. Thus, ~~four~~ three OPERABLE channels (narrow range instrument span each generator) are required to satisfy the requirements with two-out-of-~~four~~ three logic and ~~. For units that have dedicated protection and control channels, only three protection channels are necessary to satisfy the protective requirements. For other units that have only three channels,~~ a median signal selector is provided ~~or justification is provided in Reference 7~~ for level control.

This function is actuated on two out of three low-low water level signals occurring in any steam generator. If a low-low water level condition is detected in one steam generator, signals are generated to start the motor driven auxiliary feedwater pumps. If a low-low water level condition is detected in two or more steam generators, a signal is generated to start the turbine driven auxiliary feedwater pump as well.

50.7% Q3.3-

The signals to start auxiliary feedwater pumps are delayed through the use of a Trip Time Delay (TTD) system for reactor power levels below 50% of RTP. Low-low water level in any protection set in any steam generator will generate a signal which starts an elapsed time trip delay timer. The allowable trip time delay is based upon the prevailing power level at the time the low-low level trip setpoint is reached. If power level rises after the trip time delay setpoints have been determined, the trip time delay is re-determined (i.e., decreased) according to the increase in power level. However, the trip time delay is not changed if the power level decreases after the delay has been determined. The use of this delay allows added time for natural steam generator level stabilization or operator intervention to avoid an inadvertent protection system actuation.

With the transmitters (d/p cells) located inside containment and thus possibly experiencing adverse environmental conditions (feed line break), the Trip Setpoint reflects the inclusion of both steady state and adverse environmental instrument uncertainties.

d.2) SG WATER LEVEL – LOW LOW TRIP TIME DELAY (TTD) Q3.3-46

(continued)

BASES

ACTIONS

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

LCO 3.0.3 to initiate shutdown actions in the event of a complete loss of ESFAS function. If the interlock is not in the required state (or placed in the required state) for the existing unit condition, the unit must be placed in MODE 3 within the next 6 hours and MODE 4 within the following 6 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. Placing the unit in MODE 4 removes all requirements for OPERABILITY of these interlocks.

~~M.1 or M.2~~ INSERT ACTION M Bases Q 3.3-46

~~Condition M applies to the Trip Time Delay (TTD) for the SG low-low water level actuation of AFW pumps. With one or more TTD circuitry delay timers inoperable, 6 hours are allowed to adjust the threshold power level for no time delay to 0% RTP or to place the affected SG water level low-low channel in trip. The specified Completion Time is reasonable considering the nature of these Functions, the available redundancy, and the low probability of an event occurring during this interval. If the TTD threshold power level cannot be adjusted or the affected SG water level low-low channel cannot be placed in trip, the unit must be placed in MODE 3 within the next 6 hours and MODE 4 within the following 6 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power in an orderly manner and without challenging unit systems. In MODE 4, the unit does not have any analyzed transients or conditions that require the explicit use of the protection function noted above.~~

N.1 or N.2 ~~and N.2.2~~ DC 3.3-007

Condition N applies to:

- Manual Initiation of Steam Line Isolation; and
- Manual Initiation of Auxiliary Feedwater.

If a channel is inoperable, 48 hours is allowed to return the channel to an OPERABLE status. The specified Completion Time is reasonable considering the nature of these functions, the available redundancy, and the low probability of an event occurring during this interval. If the Function cannot be returned to OPERABLE status, the associated pump or valve shall be declared inoperable immediately and the REQUIRED ACTION of 3.7.5 or 3.7.2 as applicable complied with immediately.

INSERT SB-O&P

Q 3.3-66

(continued)

Insert for Q 3.3-46

Enclosure 5B page B 3.3-122
Insert ACTION M Bases

M.1, M.2, M.3.1 and M.3.2

Condition M applies to the Trip Time Delay (TTD) circuitry for the SG Water Level-Low Low actuation of the turbine-driven AFW pump and is required to be OPERABLE in MODES 1, 2 and 3. With one or more TTD circuitry delay timers inoperable or the RCS delta-T equivalent power input inoperable, 6 hours are allowed to adjust the threshold power level for no time delay to 0% RTP. This sets the TTD timer to zero seconds and effectively removes its input from the SG water level circuit. If the TTD timer cannot be set to zero seconds for a single SG water level control, then the affected SG water level low-low channel must be placed in trip. Only one SG water level low-low channel can be placed in trip ~~since the trip coincidence is two-out-of-three~~ position without tripping the plant. The Completion Time of 6 hours is reasonable considering the nature of these functions and the low probability of an event occurring during this interval as justified in Reference 7. Q 3.3-46

If the TTD threshold power for no time delay cannot be adjusted to 0% RTP (zero seconds time delay) or the single SG water level channel cannot be placed in the trip condition within the specified Completion Time, the unit must be placed in MODE 4 where these Functions are not required OPERABLE. A completion time of 12 hours is allowed to place the unit in MODE 3 and 18 hours for MODE 4. These completion times are reasonable time, based on operating experience, to place the unit in MODE 4 from full power in an orderly manner and without challenging unit systems. In MODE 4 there are no analyzed transients requiring the use of the turbine-driven AFW pump.

The Required Actions have been modified by a Note that allows placing the SG water level channel or one additional channel in the bypassed condition for up to 4 hours while performing routine surveillance testing of the other channels.

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: Q 3.3-54 **APPLICABILITY:** CA, CP, DC, WC

REQUEST:

Function 18.b (P-7) of ITS Table 3.3.1-1 is clarified. COTs and Channel Calibrations apply to the P-10 and P-13 inputs, not to the P-7 logic function.

Comment: Reject - Deleting all SRs results in no TS requirements for establishing interlock operability. Revise the ITS to adopt the STS. This is also an Beyond Scope change.

Scope issue

FLOG RESPONSE: SR 3.3.1.5 has been assigned to ITS Table 3.3.1-1 Function 18.b (this was already discussed in the SR 3.3.1.5 Bases), as previously approved for Vogtle. JFD 3.3-54 has been revised for clarification. Except for DCPP, there are no current TS Enclosure 2, 3A/3B, or 4 changes required since there is no surveillance listing for P-7 in CTS Table 4.3-1. WCNOC will now adopt JFD 3.3-54.

For DCPP, the P-7 permissive is a derivative of permissives P-10 and P-13 and the CTS requires that the P-7 as well as P-10 and P-13 be surveillance tested via a COT and a CHANNEL CALIBRATION. There are no field sensors associated with P-7; there are only sensors associated with P-10 and P-13. There is also no place outside the SSPS to inject a simulated signal into P-7. There are no adjustable devices directly associated with P-7 and, therefore, no required range or accuracy values except via the P-10 and P-13 functions. There are no outputs from P-7 other than to the main annunciator permissive window and a digital output to the plant process computer. There are no interlock or trip functions outside the SSPS. Therefore, the definition of a CHANNEL CALIBRATION and COT do not apply to P-7. The P-7 function does lend itself to testing that would meet the requirements of the definition of an ACTUATION LOGIC TEST. As noted in the Bases for SR 3.3.1.5, "Perform ACTUATION LOGIC TEST," the P-7 logic is included in the SSPS testing that is conducted monthly on a STAGGERED TEST BASIS. This testing, however, does not verify the function of the main annunciator alarm that can only be tested during a refueling outage. Therefore, DCPP will apply SR 3.3.1.17 to the P-7 Function in lieu of the CTS and STS required CHANNEL CALIBRATION and COT, which as explained above are inappropriate.

Refer to Comment Number Q 1-51 response for changes to the CTS.

FLOG RESPONSE (Supplement): Based upon conversation with the NRC Staff on March 18, 1999, Table 3.3.1-1, Function 18.b is revised to apply SR 3.3.1.5 rather than SR 3.3.1.17. The alarm circuit is not required feature to be tested on the 31 day frequency since it is only a "mimic" of the SSPS action.

ATTACHED PAGES:

Encl. 5A	3.3-17, 3.3-25
Encl. 5B	B 3.3-56, B 3.3-63
Encl. 6A	5
Encl. 6B	9

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
		(continued)
SR 3.3.1.14	----NOTE---- Verification of setpoint is not required. ---- Perform TADOT.	~~18~~ 24 months B DC ALL-001
SR 3.3.1.15	----NOTE---- Verification of setpoint is not required. ---- Perform TADOT.	~~----NOTE---- Only required when not performed within previous 31 days ---- Prior to reactor startup~~
SR 3.3.1.16	----NOTE---- Neutron detectors are excluded from response time testing. ---- Verify RTS RESPONSE TIMES ~~is~~ ARE within limits ~~as specified in the FSAR update~~.	~~18~~ 24 months on a STAGGERED ~~TEST~~ BASIS B DC ALL-001 3.3-55 Q 3.3-55
~~SR 3.3.1.17~~	~~Perform ACTUATION LOGIC TEST.~~	~~18~~ 24 months ~~3.3-45~~ ~~DC ALL-005~~

~~3.3-54~~

Q 3.3-54

Prior to exceeding the P-9 interlock whenever the unit has been in Mode 3, if not performed in the previous 31 days.

TR 3.3-007

DC 3.3-006

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	ED NOMINAL (a) TRIP SETPOINT~~(a)~~
18. Reactor Trip System Interlocks						B
a. Intermediate Range Neutron Flux, P-6	2(e)	2	S	SR 3.3.1.11 SR 3.3.1.13	≥ ~~6~~ 8 E-11 amp	DC ALL-005 ~~1E-10~~ amp 3.3-54
b. Low Power Reactor Trips Block, P-7	1	1 per train	T	~~NA~~ SR ~~3.3.1.17~~ 3.3.1.5 ~~SR 3.3.1.11~~ ~~SR 3.3.1.13~~	NA	Q 3.3-54 NA ~~3.3-44~~ B-PS
c. Power Range Neutron Flux, P-8	1	4	T	SR 3.3.1.11 SR 3.3.1.13	≤ ~~[50.2]~~ ~~37.2~~% RTP 36.2 Q 3.3-44	DC ALL-005 ~~[48]~~ 35% RTP ~~3.3-44~~ B-PS B
d. Power Range Neutron Flux, P-9	1	4	T	SR 3.3.1.11 SR 3.3.1.13	≤ ~~[52.2]~~ ~~52.2~~% RTP 51.2	DC ALL-005 50% RTP B-PS B ~~3.3-44~~
e. Power Range Neutron Flux, P-10	1,2	4	S	SR 3.3.1.11 SR 3.3.1.13	≥ ~~[7.8]~~ 8.8 ~~7.8~~% RTP and ≤ ~~[12.2]~~ ~~12.2~~% RTP 11.2	DC ALL-005 10% RTP B B-PS PS
f. Turbine Impulse Chamber Pressure, P-13	1	2	T	~~[SR 3.3.1.1]~~ SR 3.3.1.10 SR 3.3.1.13	≤ ~~[12.2]~~ ~~12.2~~% RTP 10.2 turbine ~~power~~ impulse pressure equivalent	DC ALL-005 10% RTP turbine ~~power~~ impulse pressure equivalent

Remove Strike Out

~~(a)~~ a. A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is re-adjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions. ED

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

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

DC 3.3-006

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.4

SR 3.3.1.4 is the performance of a TADOT every 31 days on a STAGGERED TEST BASIS. This test shall verify OPERABILITY by actuation of the end devices.

The RTB test shall include separate verification of the undervoltage and shunt trip mechanisms. Independent verification of RTB undervoltage and shunt trip Function is not required for the bypass breakers. No capability is provided for performing such a test at power. The independent test for bypass breakers is included in SR 3.3.1.14. The bypass breaker test shall include a local manual shunt trip only. A Note has been added to indicate that this test must be performed on the bypass breaker prior to placing it in service.

The Frequency of every 31 days on a STAGGERED TEST BASIS is adequate. It is based on industry operating experience, considering instrument reliability and operating history data.

DC ALL-005

~~The seismic trip is tested every 31 days on a STAGGERED TEST BASIS~~

SR 3.3.1.5

SR 3.3.1.5 is the performance of an ACTUATION LOGIC TEST. The SSPS is tested every 31 days on a STAGGERED TEST BASIS, using the semiautomatic tester. The train being tested is placed in the bypass condition with the RTB bypass breaker installed, thus preventing inadvertent actuation. Through the semiautomatic tester, all possible logic combinations, with and without applicable permissives, are tested for each protection function including operation of the P-7 permissive which is a logic function only. THE ALARM CIRCUIT IS EXCLUDED The Frequency of every 31 days on a STAGGERED TEST BASIS is adequate. It is based on industry operating experience, considering instrument reliability and operating history data.

Q 3.3-54

SR 3.3.1.6

SR 3.3.1.6 is a calibration of the excore channels to the incore channels. If the measurements do not agree, the excore channels are not declared inoperable but must be calibrated to agree with the incore detector measurements. If the excore channels cannot be adjusted, the channels are declared inoperable. This Surveillance is performed to verify the f(ΔI) input to the overtemperature ΔT Function.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.16 (continued)

determined during unit operation because equipment operation is required to measure response times. Experience has shown that these components usually pass this surveillance when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.3.1.16 is modified by a Note stating that neutron detectors are excluded from RTS RESPONSE TIME testing. This Note is necessary because of the difficulty in generating an appropriate detector input signal. Excluding the detectors is acceptable because the principles of detector operation ensure a virtually instantaneous response. Response time of the neutron flux signal portion of the channel shall be measured from detector output or input to the first electronic component in the channel.

~~SR 3.3.1.17~~ ~~P-7 logic interlock.~~ Q 3.3-54

~~DC 3.3-E~~ 17

~~SR 3.3.1.17 00 is the performance of an ACTUATION LOGIC TEST for the Seismic trip. The frequency of every 18 months is based on instrument reliability and operating history data.~~

24 ~~DC ALL 005~~

~~and the requirement that the test be performed during a refueling outage so that the annunciator can be verified~~

REFERENCES

1. FSAR, Chapter ~~[7]~~.
2. FSAR, Chapter ~~[6]~~.
3. FSAR, Chapter ~~[15]~~.
4. IEEE-279-1971.
5. 10 CFR 50.49.
6. ~~RTS/ESFAS Setpoint Methodology Study~~ WCAP-11082, Rev. 2 "Westinghouse Setpoint Methodology for Protection Systems Diablo Canyon Station - Eagel 21 Version," May 1993
7. WCAP-10271-P-A, Supplement 2, Rev. 1, June 1990.
8. ~~Technical Requirements Manual, Section 15~~ ~~FSAR, Chapter 7, "Response Times."~~ WCAP 13632 - PA-1, Rev. 2 "Elimination of Pressure Sensor Response Time Testing Requirements."
9. FSAR, Chapter 9.2.7 & 9.2.2
10. FSAR, Chapter 10.3 & 10.4.
11. FSAR, Chapter 8.3.
12. DCM S-38A, "Plant Protection System"
13. WCAP-13878, "Reliability of Potter & Brumfield MDR Relays", June 1994

(continued)

CHANGE NUMBER	JUSTIFICATION
3.3-51	ITS ACTION B.2 of LCO 3.3.7 is deleted, since DCPP cannot operate with both pressurization systems running at the same time. The design of the system is such that operation of two pressurization fans would over pressurize the supply ducting to the filters.
3.3-52	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).
3.3-53	The REQUIRED CHANNELS description for Functions 2.a and 3.b.(1), of 3.3.1.5 ITS Table 3.3.2-1, are revised per the CTS to note that only two switches (one per train) exist and that both must be moved coincident for manual initiation.
~~3.3-54~~	Function 18.b (P-7) of ITS Table 3.3.1-1 is clarified to add [SR ~~3.3.1.17~~] and delete SR 3.3.1.11 and SR 3.3.1.13. ~~COTs and Channel Calibrations apply to the P-10 and P-13 inputs, not to the P-7 logic function.~~ This change is an administrative clarification to address the relationships between these interlocks in the plant's design. [ ]. The ITS approach of listing [an ALT] against function 18.b has been previously approved for Vogtle. Q 3.3-54
~~3.3-55~~	~~Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).~~ INSERT 3.3-55 Q 3.3-55
3.3-56	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).
3.3-57	Not used.
3.3-58	This change adds new ITS 3.3.2 Condition [N] to reflect current TS Table 3.3-3 ACTION Statement [24] on manual AFW [and manual MSIV closure] initiation.
3.3-59	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).
3.3-60	Consistent with the design and current TS, Surveillance Requirements [3.3.2.3 and 3.3.2.7 are] not used by any function listed in Table 3.3.2-1 and are deleted. DC ALL-002
3.3-61	This change revises the ITS SR 3.3.2.11 Frequency to [24] 18 months per current TS Table 4.3-2 Functional Unit [8.c], which is the ESFAS P-4 permissive. The 18 month Frequency for the surveillance of the basic switch logic associated with the opening of the reactor trip breakers is the value specified in the current TS. [Deleted the Note stating that verification of set point is not required per the CTS.] DC ALL-001
3.3-62	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).
3.3-63	This change revises ITS Table 3.3.2-1 [Notes (b) and (g)] per current TS Table [3.3-3] Notes [# and ##]. This revision is a clarification to the operator that describes the circumstances under which the [Steamline Pressure Negative Rate - High, Steam Pressure-low, or Pressurizer Pressure-low functions may be or are blocked relative to the] P-11 permissive.
3.3-64	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).
3.3-65	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).
3.3-66	The MODE 4 requirement of the CTS is retained and added to Table 3.3.2-1 for SI actuated by Containment Pressure high-high. ~~ITS 3.3.2 ACTIONS D and E are revised accordingly.~~ INSERT 3.3-66(a) CA 3.3-012
3.3-67	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).

Logic functions are tested under SR 3.3.1.5 [and SR 3.3.1.17].

TECHNICAL SPECIFICATION CHANGE		APPLICABILITY			
NUMBER	DESCRIPTION	DIABLO CANYON	COMANCHE PEAK	WOLF CREEK	CALLAWAY
3.3-49	ITS SR 3.3.1.8 is revised to extend the conditional COT frequency for power and intermediate range channels from 4 hours after reducing power below P-10 to 12 hours, based on operating experience regarding the time needed to perform the COTs. It stands to reason that if 4 hours are allowed for 2 Source Range COTs, 12 hours should be allowed for 6 Intermediate Range and Power Range COTs.	Yes	Yes	Yes	Yes
3.3-50	ITS SR 3.3.1.12 is deleted per the CTS. Where cited in Table 3.3.2-1, a change to SR 3.3.1.10 has been made.	No, see CN 3.3-101.	Yes	Yes	Yes
3.3-51	ITS ACTION B.2 of LCO 3.3.7 is deleted, since DCPP cannot operate CRVS with both pressurization systems running at the same time.	Yes	No	No	No
3.3-52	Added Note [(l)] to ITS Table 3.3.1-1 per the CTS as an operator aid to note the dual RTS/ESFAS functions of SG Water Level Low-Low.	No, adopted ISTS format.	Yes	Yes	Yes
3.3-53	The REQUIRED CHANNELS description for Functions 2.a and 3.b.(1), of ITS Table 3.3.2-1, are revised per the DCPP CTS to note that only two switches (one per train) exist and that both must be moved coincident for manual initiation.	Yes to add [SR	No 3.3.1-5 ~~3.3.1.12~~] and delete	No SR 3.3.1.11 and	No SR 3.3.13
3.3-54	Function 18.b (P-7) of ITS Table 3.3.1-1 is clarified. COTs and Channel Calibrations apply to the P-10 and P-13 inputs, not to the P-7 logic function.	Yes	Yes	~~No, adopted ISTS format~~ e Yes	Yes Q 3.3-54
3.3-55 ~~acceptance limits specified in the FSAR~~	~~Revise ITS SR 3.3.1.16 and SR 3.3.2.10 to verify required response times, accommodating those channels that have no response time requirements per the current licensing basis. [As such, line-item references to these SRs in Tables 3.3.1-1 and 3.3.2-1 can be deleted. A similar revision to the ITS SR 3.3.6 SR note has also been made reguarding SR 3.3.6.8.]~~ e INSERT	~~No, SRs will be retained in ITS Tables for required Functions.~~ e Yes	Yes	Yes, SRs will be retained in ITS Tables for required Functions.	Yes Q 3.3-55
3.3-56	Revise ITS 3.3.2 Condition J to reflect CTS Table [3.3-3], ACTION Statement [19] for Functional Unit [6.g].	No, See CN 3.3-116.	Yes	Yes	Yes

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: Q 3.3-66 **APPLICABILITY:** DC

REQUEST:

The DCPP-specific MODE 4 requirement of the CTS is retained and added to Table 3.3.2-1 for SI actuated by Containment Pressure High 1.

Comment: A separate condition should be created to handle shutdown tracks for functions with required applicability that includes Modes 1, 2, 3, and 4.

FLOG RESPONSE (Original): A separate shutdown track is created via CONDITION O that requires entry into MODE 5 for function 1.c. if the inoperable channel cannot be tripped. ACTIONS D and E are restored to their original NUREG-1431 versions that require a shutdown to MODE 4 if the applicable functions cannot be tripped or bypassed, respectively, in the allowed time. A new CONDITION P is created that requires a shutdown to MODE 5 for those functions required to be OPERABLE in MODE 1 through 4 and requiring that the trip be bypassed. JFD 3.3-114 is created to justify the addition of these two new ACTIONS. The Bases is revised to move the affected functions to the applicable ACTIONS.

FLOG RESPONSE (Supplement): Typos occurring in the numbering for Condition O and P are corrected and editorial changes in Bases text are inserted.

ATTACHED PAGES:

Encl. 5A 3.3-35
Encl. 5B B 3.3-122

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
N. One channel inoperable.	N.1 Restore channel to OPERABLE status.	48 hours 3.3-58
	OR	
	N.2.1 Declare THE associated AFW pump or MSIV ~~valve~~ inoperable.	Immediately DC 3.3-007
	~~AND~~	
	~~N.2.2 Comply with REQUIRED ACTION of 3.7.5 or 3.7.2 as applicable.~~	~~Immediately~~

INSERT 5A-O&P

Q 3.3-66

3.3-114

Insert for Q 3.3-66

Enclosure 5A page 3.3-35
Insert 5A-O&P

O. One channel inoperable	------------NOTE------------ The inoperable channel ~~or one additional channel may~~ be bypassed for up to 4 hours for surveillance testing of other channels. ------------------------------------	Q 3.3-37
	O.1 Place channel in trip.	6 hours
	OR	
	O.2.1 Be in MODE 3.	12 hours
	AND	
	O.2.~~3~~ 2 Be in MODE 5.	Q 3.3-66 42 hours
P. One channel inoperable	------------NOTE------------ One additional channel may be bypassed for up to 4 hours for surveillance testing. ------------------------------------	
	P.1 Place channel in bypass.	6 hours
	OR	
	P.2.1 Be in MODE 3.	12 hours
	AND	
	P.2.~~3~~ 2 Be in MODE 5.	Q 3.3-66 ~~42 hours~~

BASES

ACTIONS

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

LCO 3.0.3 to initiate shutdown actions in the event of a complete loss of ESFAS' function. If the interlock is not in the required state (or placed in the required state) for the existing unit condition, the unit must be placed in MODE 3 within the next 6 hours and MODE 4 within the following 6 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. Placing the unit in MODE 4 removes all requirements for OPERABILITY of these interlocks.

~~M.1 or M.2~~ ← INSERT ACTION M Bases Q 3.3-46

~~Condition M applies to the Trip Time Delay (TTD) for the SG low-low water level actuation of AFW pumps. With one or more TTD circuitry delay timers inoperable, 6 hours are allowed to adjust the threshold power level for no time delay to 0% RTP or to place the affected SG water level low-low channel in trip. The specified Completion Time is reasonable considering the nature of these Functions, the available redundancy, and the low probability of an event occurring during this interval. If the TTD threshold power level cannot be adjusted or the affected SG water level low-low channel cannot be placed in trip, the unit must be placed in MODE 3 within the next 6 hours and MODE 4 within the following 6 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power in an orderly manner and without challenging unit systems. In MODE 4, the unit does not have any analyzed transients or conditions that require the explicit use of the protection function noted above.~~ e

N.1 or N.2 ~~and N.2.2~~ DC 3.3-007

Condition N applies to:

- Manual Initiation of Steam Line Isolation; and
- Manual Initiation of Auxiliary Feedwater.

If a channel is inoperable, 48 hours is allowed to return the channel to an OPERABLE status. The specified Completion Time is reasonable considering the nature of these functions, the available redundancy, and the low probability of an event occurring during this interval. If the Function cannot be returned to OPERABLE status, the associated pump or valve shall be declared inoperable immediately and the REQUIRED ACTION of 3.7.5 or 3.7.2 as applicable complied with immediately.

INSERT SB-O&P Q 3.3-66

(continued)

Insert for Q 3.3-66

Enclosure 5B page B 3.3-122
Insert 5B-O & P

Q 3.3-66

O.1 or O.2.1, AND O.2.2 ~~and O.2.3~~

Condition O applies to Safety Injection Resulting From Containment Pressure – High.

If one channel is inoperable, 6 hours are allowed to restore the channel to OPERABLE status or to place it in the tripped condition. Failure of one channel places the function in a two-out-of-two configuration since the trip coincidence is two-out-of-three. The inoperable channel must be tripped to place the Function in a one-out-of-two configuration that satisfies redundancy requirements.

Failure to restore the inoperable channel to OPERABLE status or place it in the tripped condition within 6 hours requires the unit be placed in MODE 3 within 12 hours and MODE 5 in 42 hours.

The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. In MODE 5, these functions are no longer required OPERABLE.

Q 3.3-37

The Required Actions are modified by a Note that allows the inoperable channel ~~or one additional channel~~ to be bypassed for up to 4 hours for surveillance testing of other channels. The 6 hours allowed to restore the channel to OPERABLE status or to place the inoperable channel in the tripped condition, and the 4 hours allowed for testing, are justified in Reference 8.

P.1 or P.2.1, AND P.2.2 ~~and P.2.3~~

Q 3.3-66

Condition P applies to:

- Containment Spray - Containment Pressure – High-High.
- Containment Isolation - Phase B Isolation - Containment Pressure - High-High.

Neither of these signals has input to a control function. Thus, two-out-of-three logic is necessary to meet acceptable protective requirements. However, a two-out-of-three design would require tripping a failed channel. This is undesirable because a single failure would then cause spurious containment spray initiation. Spurious spray actuation is undesirable because of the cleanup problems presented. Therefore, these channels are designed with two-out-of-four logic so that a failed channel may be bypassed rather than tripped. Note that one channel may be bypassed and still satisfy the single failure criterion. Furthermore, with one channel bypassed, a single instrumentation channel failure will not spuriously initiate containment spray. The containment spray signal is also interlocked with SI and will not initiate without simultaneous SI and containment spray signals.

Q 3.3-66

To avoid the inadvertent actuation of containment spray and Phase B containment isolation, the inoperable channel ~~should not be placed in the tripped condition. Instead it~~ is bypassed. Restoring the channel to OPERABLE status, or placing the inoperable channel in the bypass condition within 6 hours, is sufficient to assure that the Function remains OPERABLE and minimizes the time that the Function may be in a partial trip condition (assuming the inoperable channel has failed high). The Completion Time is further justified based on the low probability of an event occurring during this interval.

Failure to restore the inoperable channel to OPERABLE status or place it in the tripped condition within 6 hours requires the unit be placed in MODE 3 within 12 hours, and MODE 5 in 42 hours.

The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. In MODE 5, these Functions are no longer required OPERABLE.

The Required Actions are modified by a Note that allows the inoperable channel or one additional channel to be bypassed for up to 4 hours for surveillance testing of other channels. The 6 hours allowed to restore the channel to OPERABLE status or to place the inoperable channel in the tripped condition, and the 4 hours allowed for testing, are justified in Reference 8.

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: Q 3.3-71 **APPLICABILITY:** DC

REQUEST:

This DCPP-specific change revises Table 3.3.3-1 per the reviewers note to update CTS PAM instruments per the requirements of Reg. Guide 1.97 and revises Conditions A and C to account for those functions with only one required channel.

Comment: Wording of condition to "at least one valid channel OPERABLE" uses terminology that is not easily understood. It could mean that it is possible to have an invalid channel that is OPERABLE. Revise the ITS to adopt ISTS.

Need to work on a common solution to the problem of single channel PAM functions.

FLOG RESPONSE (Original): The applicability of this change to CONDITION A and C is deleted and the ISTS wording has been adopted.

The only single channel PAM functions are Steam Generator (SG) water level wide range and Auxiliary Feedwater (AFW) flow rate. These two functions have only one instrument per SG. Even though channel redundancy is not available, diverse indications are available via the SG water level narrow range, SG pressure, reactor coolant system pressure and temperature as well as other means of monitoring core heat removal. Having one wide range SG level and one AFW flow indicator is consistent with NUREG-0737 Item II.E.1.2 for Westinghouse plants. Loss of the single channel for these two functions would be addressed via Condition C.

In response to the reviewer's informal comment, the Bases for LCO 3.3.3, Functions 3 and 4, has been revised to clarify the instrument requirements associated with T-hot and T-cold.

FLOG RESPONSE (Supplemental): Based upon conversations with the NRC Staff on March 25, 1999, LCO 3.3.3, Condition C, has been revised to read: "One or more Functions with two or more required channels inoperable" and Required Action C.1 has been revised to read: "Restore all but one channel to OPERABLE status." Table 3.3.3-1 has been revised to eliminate unnecessary parenthetical information from Functional Units 3, 4, 13, 15, 16, 17, 18, and 19. The Bases have been revised to be consistent with these changes. The Bases has been revised to clearly state that when channels in Table 3.3.3-1 are specified on a per Steam Generator bases then Separate Entry is allowed for each steam generator.

ATTACHED PAGES:

Encl. 5A	3.3-52, 3.3-55, 3.3-56
Encl. 5B	B 3.3-135, B 3.3-140, B 3.3-141, B 3.3-142, B 3.3-143, B 3.3-144, B 3.3-145, B 3.3-146

3.3 INSTRUMENTATION

3.3.3 Post Accident Monitoring (PAM) Instrumentation

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

APPLICABILITY: MODES 1, 2 and 3.

ACTIONS

---------------------------------NOTES---------------------------------

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable~~, but at least one valid channel OPERABLE~~. e	A.1 Restore required channel to OPERABLE status.	30 days ~~3.3-71~~ e Q 3.3-71
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.8.	Immediately
C. ----------NOTE---------- Not applicable to hydrogen monitor channels. ------------------------ One or more OR MORE Functions with ~~two~~ one required channels e ~~inoperable~~ OPERABLE. e	C.1 Restore ALL BUT one channel to OPERABLE status.	7 days ~~3.3-71~~ e Q 3.3-71

Delete Strike Out

Table 3.3.3-1 (page 1 of 2)
Post Accident Monitoring Instrumentation

FUNCTION	REQUIRED CHANNELS	CONDITION REFERENCED FROM REQUIRED ACTION E.1	
1. ~~Power Range~~ Neutron Flux (Wide Range NIS)	2	F	3.3-71
~~2.~~ ~~Source Range Neutron Flux~~ 2. Steam Line Pressure	~~2~~ 2 per steam generator	~~E~~ F	3.3-01 3.3-71
3. Reactor Coolant System (RCS) Hot Leg Temperature – T_{hot} (Wide Range)	2 ~~(1 per loop in two loops)~~	F	3.3-71 Q 3.3-71
4. RCS Cold Leg Temperature – T_{cold} (Wide Range)	2 ~~(1 per loop in two loops)~~	F	3.3-71
5. RCS Pressure (Wide Range)	2	F	
6. Reactor Vessel Water Level Indication System	2	G	3.3-71
7. a) Containment Recirculation Sump Water Level (~~Wide~~ Narrow Range) b) Containment Reactor Cavity Sump Level – Wide Range	2 2	F F	3.3-71 3.3-71
8. a) Containment Pressure (Wide Range) b) Containment Pressure (Normal Range)	2 2	F F	 3.3-71
9. Containment Isolation Valve Position	2 per penetration flow path (a) (b)	F	
10. Containment Area Radiation (High Range)	2	G	
11. Hydrogen Monitors	2	Remove Strike Out	~~3.3-68~~ Q 3.3-68
12. Pressurizer Level	2	F	

Q 3.3-71

13.	a) Steam Generator Water Level (Wide Range)	~~2 1 per steam generator~~ 6 (4)	F	3.3-71
	b) Steam Generator Water Level (Narrow Range)	2 per steam generator	F	3.3-71
14.	Condensate Storage Tank Level	2 6	F	
15.	~~Core Exit Temperature~~ Incore Thermocouples - Quadrant ~~[1]~~	2 [(c)] ~~per core quadrant~~	F	3.3-71 Q 3.3-71
16.	~~Core Exit Temperature~~ Incore Thermocouples - Quadrant ~~[2]~~	2 [(c)] ~~per core quadrant~~ 6	F	3.3-71
17.	~~Core Exit Temperature~~ Incore Thermocouples - Quadrant ~~[3]~~	2 [(c)] ~~per core quadrant~~ 6	F	3.3-71 Q 3.3-71
18.	~~Core Exit Temperature~~ Incore Thermocouples - Quadrant ~~[4]~~	2 [(c)] ~~per core quadrant~~ 6	F	3.3-71
19.	Auxiliary Feedwater Flow	~~2 1 per steam generator~~ 6 (4)	F	Q 3.3-71 3.3-71
20.	~~(New)~~ Refueling Water Storage Tank Water Level 6 Q 3.3-71	2	F	3.3-71

(a) Not required for isolation valves whose associated penetration is isolated by at least one closed and deactivated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.

(b) Only one position indication channel is required for penetration flow paths with only one installed control room indication channel.

(c) A channel consists of two Incore ~~exit~~ thermocouples ~~(CETs)~~.

~~Reviewer's Note: Table 3.3.3-1 shall be amended for each unit as necessary to list:~~ ED

~~(1) All Regulatory Guide 1.97, Type A instruments, and~~

~~(2) All Regulatory Guide 1.97, Category I, non-Type A instruments in accordance with the unit's Regulatory Guide 1.97, Safety Evaluation Report.~~

BASES

LCO (continued)

1. ~~Power Range and Source Range~~ Neutron Flux (Wide Range NIS)

~~Power Range and Source Range~~ Neutron Flux indication is provided to verify reactor shutdown. The ~~two ranges are~~ wide range NIS is necessary to cover the full range of flux that may occur post accident.

Neutron flux is used for accident diagnosis, verification of subcriticality, and diagnosis of positive reactivity insertion.

2. Steam Line Pressure

Steam pressure is used to determine if a high energy secondary line rupture has occurred and the availability of the steam generators as a heat sink. It is also used to verify that a faulted steam generator is isolated. Steam pressure may be used to ensure proper cooldown rates or to provide a diverse indication for natural circulation cooldown.

3. 4. Reactor Coolant System (RCS) Hot and Cold Leg Temperatures (WIDE RANGE)

RCS Hot and Cold Leg Temperatures are Category I variables provided for verification of core cooling and long term surveillance. Q 3.3-71

The intent of requiring this instrumentation is to be able to monitor ΔT. Therefore, to have an OPERABLE RCS inlet and outlet temperature, they should be in the same primary loop. If the outlet temperature is inoperable core exit thermocouples can be used in conjuction with RCS inlet temperature to determine ΔT.

RCS hot (outlet) and cold (inlet) leg temperatures are used to determine RCS subcooling margin. RCS subcooling margin will allow termination of safety injection (SI), if still in progress, or reinitiation of SI if it has been stopped. RCS subcooling margin is also used for unit stabilization and cooldown control. RCS hot leg temperature also provides a temperature compensating signal for the reactor vessel level instrumentation system (RVLIS).

In addition, RCS cold leg temperature is used in conjunction with RCS hot leg temperature to verify the unit conditions necessary to establish natural circulation in the RCS. The RCS cold leg temperature also provides a temperature input signal for the low temperature overpressure protection (LTOP) system.

Reactor outlet temperature inputs to the Reactor Protection System are provided by two fast response resistance elements and associated transmitters in each loop. The channels provide indication over a range of ~~32~~ 0°F to 700°F. Q 3.3-71

EACH OF THE 4 HOT LEGS AND EACH OF THE 4 COLD LEGS HAS ONE WIDE RANGE RTD. THESE ARE SEPARATE FROM THE NARROW RANGE RTDS PROVIDING INPUT INTO THE REACTOR PROTECTION SYSTEM.

(continued)

BASES

LCO (continued)

10. Containment Area Radiation (High Range)

Containment Area Radiation is provided to monitor for the potential of significant radiation releases ~~and to provide release assessment~~ for use by operators in determining the need to invoke site emergency plans. Containment radiation level is used to determine if a high energy line break (HELB) containing radioactive fluid has occurred, and whether the event is inside or outside of containment.

11. ~~Containment~~ Hydrogen ~~ConcentrationMonitors~~ remove strike out DC ALL-002

~~Containment~~ Hydrogen ~~Monitors are~~ ~~Concentration~~ monitoring is provided to detect high hydrogen concentration conditions that represent a potential for containment breach from a hydrogen explosion. This variable is also important in verifying the adequacy of mitigating actions and is used to determine whether or not hydrogen recombiners should be started.

12. Pressurizer Level

Pressurizer Level is used to determine whether to terminate SI, if still in progress, or to reinitiate SI if it has been stopped. Knowledge of pressurizer water level is also used to verify the unit conditions necessary to establish natural circulation in the RCS and to verify that the unit is maintained in a safe shutdown condition.

13. a. Steam Generator Water Level (Wide Range) and b. Steam Generator Level (Narrow Range)

Q 3.3-71

SG Water Level (WIDE RANGE) is provided to monitor operation of decay heat removal via the SGs. ~~The Category I indication of SG level is the extended startup range level instrumentation.~~ The ~~extended startup~~ wide range level covers a span of 12 inches ~~≥ 6 inches to ≤ 394 582 inches~~ above the lower tubesheet to the steam generator separators. The measured differential pressure is displayed in ~~inches of water at 68°F.~~ percent level (cold calibration).

~~Temperature compensation of this indication is performed manually by the operator. Redundant monitoring capability is provided by two trains of instrumentation. The uncompensated level signal is~~

DC ALL-002

(continued)

AND b. STEAM GENERATOR LEVEL (NARROW RANGE)

BASES

LCO

13. a ~~S~~Steam Generator Water Level (Wide Range) (continued) Q 3.3-71

~~input to the unit computer, a control room indicator, and the Emergency Feedwater Control System.~~

SG Water Level ~~(Wide Range)~~ is used to:

- identify the faulted SG following a tube rupture;
- verify that the intact SGs are an adequate heat sink for the reactor;
- determine the nature of the accident in progress (e.g., verify an SGTR); and
- verify unit conditions for termination of SI during secondary unit HELBs outside containment.

THERE ARE 4 total REQUIRED STEAM GENERATOR WIDE RANGE CHANNELS WITH ONE REQUIRED ON EACH STEAM GENERATOR. THE REDUNDANCY OF THIS FUNCTION IS PROVIDED BY THE PRESENSE OF 4 STEAM GENERATORS

~~At some units,~~ Operator action is based on the control room indication of SG level. The RCS response during a design basis small break LOCA depends on the break size. For a certain range of break sizes, the ~~boiler condenser~~ reflux cooling mode of heat transfer is necessary to remove decay heat. ~~Extended startup~~ Wide range level is a Type A variable because the operator must manually raise and control SG level to establish ~~boiler condenser~~ reflux cooling heat transfer. Operator action is initiated on a loss of subcooled margin. Feedwater flow is increased until the indicated ~~extended startup~~ wide range level reaches the ~~boiler condenser setpoint~~ reflux cooling initiation point.

Q 3.3-71

SG Water Level (Narrow Range) is redundant to the SG wide range level, and provides indication of adequate RCS heat removal capability during normal SG inventory conditions. The narrow range level covers a span from ≥ 437 inches to 581 inches above the lower tubesheet.

Q 3.3-71

THERE ARE 3 STEAM GENERATOR NARROW RANGE CHANNELS PER STEAM GENERATOR WITH 2 REQUIRED FOR THIS FUNCTION

14. Condensate Storage Tank (CST) Level

CST Level is provided to ensure water supply for auxiliary feedwater (AFW). The CST provides the ensured safety grade water supply for the AFW System. ~~The CST consists of two identical tanks connected by a common outlet header. Inventory is monitored by a 0 inch to 144 inch level indication for each tank.~~ CST Level is displayed on a control room indicator, strip chart recorder, and unit computer. ~~In addition, a control room annunciator alarms on low level.~~

(continued)

BASES

LCO

14. Condensate Storage Tank (CST) Level (continued)

~~At some units,~~ CST Level is considered a Type A variable because the control room meter ~~and annunciator are~~ is ~~considered~~ the primary indication used by the operator.

The DBAs that require AFW are the loss of electric power, steam line break (SLB), and small break LOCA.

The CST is the initial source of water for the AFW System. However, as the CST is depleted, manual operator action is necessary to replenish the CST or align suction to the AFW pumps from the ~~hotwell~~ Fire Water Storage Tank or other alternate sources.

15, 16, 17, 18. In-Core ~~Exit Temperature~~ Thermocouples

In-Core ~~Exit Temperature is~~ Thermocouples are provided for verification and long term surveillance of core cooling.

An evaluation was made of the minimum number of valid ~~core exit~~ in-core thermocouples ~~(CET)~~ necessary for measuring core cooling. The evaluation determined the reduced complement of ~~CETs~~ in-core thermocouple necessary to detect initial core recovery and trend the ensuing core heatup. The evaluations account for core nonuniformities, including incore effects of the radial decay power distribution, excore effects of condensate runback in the hot legs, and nonuniform inlet temperatures. Based on these evaluations, ~~adequate~~ core cooling ~~is ensured~~ can be adequately monitored with two valid ~~Core Exit Temperature~~ in-core thermocouple channels per quadrant with two ~~CETs~~ in-core thermocouples per required channel. ~~The CET pair are oriented radially to permit evaluation of core radial decay power distribution.~~ Core Exit Temperature is used to determine whether to terminate SI, if still in progress, or to reinitiate SI if it has been stopped. Core Exit Temperature is also used for unit stabilization and cooldown control.

Two OPERABLE channels of ~~Core Exit Temperature~~ In-Core Thermocouples are required in each quadrant to ~~provide indication of radial distribution of the coolant temperature rise across representative regions of the core. Power distribution symmetry was considered in determining the specific number and locations provided for diagnosis of local core problems. Therefore, two randomly selected thermocouples are not sufficient to~~

stet

Q3.3-71

(continued)

Q3.3-71

BASES

STET

LCO 15, 16, 17, 18. Core Exit Temperature (continued)

~~meet the two thermocouples per channel requirement in any quadrant. The two thermocouples in each channel must meet the additional requirement that one is located near the center of the core and the other near the core perimeter, such that the pair of Core Exit Temperatures indicate the radial temperature gradient across their core quadrant. Unit specific evaluations in response to Item II.F.2 of NUREG-0737 (Ref. 3) should have identified the thermocouple pairings that satisfy these requirements. Two sets of two thermocouples~~ ensure a single failure will not disable the ability to determine the radial temperature gradient.

19. Auxiliary Feedwater (AFW) Flow

AFW Flow is provided to monitor operation of decay heat removal via the SGs. ONE AFW Flow CHANNEL IS PROVIDED FOR EACH STEAM GENERATOR

Q3.3-71

The AFW Flow to each SG is determined from a differential pressure measurement calibrated for a range of 0 gpm to ~~1200~~ 300 gpm. ~~Redundant monitoring capability is provided by two independent trains of instrumentation for each SG.~~ Each differential pressure transmitter provides an input to a control room indicator and the unit computer. Since the primary indication used by the operator during an accident is the control room indicator, the PAM specification deals specifically with this portion of the instrument channel.

AFW flow is used three ways:

- to verify delivery of AFW flow to the SGs;
- to determine whether to terminate SI if still in progress, in conjunction with SG water level (narrow range); and
- to regulate AFW flow so that the SG tubes remain covered.

(continued)

BASES

LCO

19. Auxiliary Feedwater Flow (continued)

~~At some units,~~ AFW flow is a Type A variable because operator action is required to throttle flow during an SLB accident to prevent the AFW pumps from operating in runout conditions. AFW flow is also used by the operator to verify that the AFW System is delivering the correct flow to each SG. However, the primary indication used by the operator to ensure an adequate inventory is SG level (Narrow Range) during normal SG inventory conditions.

20. (new) Refueling Water Storage Tank (RWST) Water Level

RWST water level is used to verify the water source availability to the emergency core cooling system (ECCS) and Containment Spray Systems. It may also provide an indication of time for initiating cold leg recirculation from the sump following a LOCA. The RWST level ~~signal~~ channel additionally trips the Residual Heat Removal Pumps ~~at 33%~~ in preparation for transfer to cold leg recirculation. add strike-out

APPLICABILITY

The PAM instrumentation LCO is applicable in MODES 1, 2, and 3 except for the ~~Containment~~ Hydrogen ~~Concentration~~ monitors ~~that is~~ are only required to be OPERABLE in MODES 1 and 2. These variables are related to the diagnosis and pre-planned actions required to mitigate DBAs. The applicable DBAs are assumed to occur in MODES 1, 2, and 3. In MODES 4, 5, and 6, and in MODE ~~3~~ 3 for the ~~Containment~~ Hydrogen ~~Concentration~~ monitor, unit conditions are such that the likelihood of an event that would require PAM instrumentation is low; therefore, the PAM instrumentation is not required to be OPERABLE in these MODES. DC ALL-002

ACTIONS

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

Note 2 has been added in the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Specification may be entered independently for each Function listed on Table 3.3.3-1. WHEN THE REQUIRED CHANNELS IN TABLE 3.3.3-1 ARE SPECIFIED ON A PER STEAM GENERATOR BASIS, THEN THE CONDITION MAY BE ENTERED SEPARATELY FOR EACH STEAM GENERATOR. Q3.3-71

(continued)

BASES

ACTIONS

A.1 (continued)

Q3.3.6-1

The Completion Time(s) of the inoperable channel(s) of a Function will be tracked separately for each Function starting from the time the Condition was entered for that Function.

Condition A applies when one or more Functions have one required channel that is inoperable ~~but at least one OPERABLE remaining channel~~. Required Action A.1 requires restoring the inoperable channel to OPERABLE status within 30 days. The 30 day Completion Time is based on operating experience and takes into account the remaining OPERABLE channel (or in the case of a Function that has only one required channel, other non-Regulatory Guide 1.97 instrument channels to monitor the Function), the passive nature of the instrument (no critical automatic action is assumed to occur from these instruments), and the low probability of an event requiring PAM instrumentation during this interval.

Q3.3-71

~~INSERT ACTION A.1~~

Q 3.3-71

B.1

Condition B applies when the Required Action and associated Completion Time for Condition A are not met. This Required Action specifies initiation of actions in Specification 5.6.8, which requires a written report to be submitted to the NRC immediately. This report discusses the results of the root cause evaluation of the inoperability and identifies proposed restorative actions. This action is appropriate in lieu of a shutdown requirement since alternative actions are identified before loss of functional capability, and given the likelihood of unit conditions that would require information provided by this instrumentation.

~~INSERT ACTION C.1~~

Q 3.3-71

C.1

Remove Strike Out

OR MORE

Condition C applies when one or more Functions have ~~two inoperable required~~ no OPERABLE channels ~~(i.e., two channels inoperable in the same Function)~~. Required Action C.1 requires restoring one channel in the Function(s) to OPERABLE status within 7 days. The Completion Time of 7 days is based on the relatively low probability of an event requiring PAM instrument operation and the availability of alternate means to obtain the required information. Continuous operation with ~~two~~ no required channels ~~inoperable~~ OPERABLE in a Function is not acceptable because the alternate indications may not fully meet all performance qualification requirements applied to the PAM instrumentation. Therefore, requiring restoration

All But

Q 3.3-71

(continued)

Insert for Q 3.3-71

~~Enclosure 5B page B 3.3-145~~
~~Insert ACTION A.1~~

~~If the single channel functions for AFW flow or SG wide range water level are inoperable, entry into ACTION C is required because the function is then unavailable.~~

~~Insert ACTION C.1~~

~~Condition C also applies to the single channel AFW flow and the SG wide range water level functions, since with the loss of these single channels, the function is unavailable.~~

Q 3.3-71

BASES

ACTIONS

C.1 (continued)

Q 3.3-71

of ALL BUT one inoperable channel of the Function limits the risk that the PAM Function will be in a degraded condition should an accident occur. Condition C is modified by a Note that excludes hydrogen monitor channels.

D.1

Condition D applies when two hydrogen monitor channels are inoperable. Required Action D.1 requires restoring one hydrogen monitor channel to OPERABLE status within 72 hours. The 72 hour Completion Time is reasonable based on the backup capability of the Post Accident Sampling System to monitor the hydrogen concentration for evaluation of core damage and to provide information for operator decisions. Also, it is unlikely that a LOCA (which would cause core damage) would occur during this time. ~~Condition D is modified by a Note that limits the APPLICABILITY for the Containment Hydrogen Concentration monitor to MODES 1 and 2.~~

Q 3.3-68

E.1

Condition E applies when the Required Action and associated Completion Time of Condition C or D are not met. Required Action E.1 requires entering the appropriate Condition referenced in Table 3.3.3-1 for the channel immediately. The applicable Condition referenced in the Table is Function dependent. Each time an inoperable channel has not met any Required Action of Condition C or D, and the associated Completion Time has expired, Condition E is entered for that channel and provides for transfer to the appropriate subsequent Condition.

F.1 and F.2

If the Required Action and associated Completion Time of Conditions C or D are not met and Table 3.3.3-1 directs entry into Condition F, the unit must be brought to a MODE where the requirements of this LCO do not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and MODE 4 within 12 hours.

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

(continued)

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: Q 3.3-77 **APPLICABILITY:** DC

REQUEST:

Containment vent isolation is initiated by the ESFAS Phase "A" isolation signals. As such, the number of required channels and required surveillances for the manual initiation of Containment Vent Isolation are captured by the requirements for Phase "A" isolation in the ESFAS tables.

Comment: Manual initiation applicability for purge instrumentation is not included for all conditions, as stated by this JFD, with Phase A Isolation instrumentation in ESFAS because the specified conditions for CORE ALTERATIONS and handling irradiated fuel assemblies is omitted. Note that condition B for manual functions would otherwise refer to a function that is not required to be operable. This may lead operators to an incorrect operability understanding for the manual purge isolation. Revise T3.3.6-1 to include the manual function.

The criteria in 10 CFR 50.36a and the CR design would require the inclusion of the manual switch in the ITS.

FLOG RESPONSE (Original): DCPP has no manual initiation switch for CVI in the control room. The CVI is manually initiated when SI, Phase "A" isolation, or Phase "B" isolation functions are manually initiated. Table 3.3.6-1 has been revised to include the above information and to reference LCO 3.3.2 "ESFAS Instrumentation" Function 1.a, 3.a.(1), and 3.b.(1). The CTS does not require manual initiation of CVI for MODE 6. CVI initiation, via ESFAS Instrumentation Functions 1.a, 3.a.(1), and 3.b.(1), is only required for MODES 1 through 4. JFD 3.3-77 has been revised to clarify these requirements and the Bases for LCO 3.3.1 ACTION B has been revised to note that the inoperability of any of the manual initiation functions that initiate CVI potentially affect LCO 3.3.6 and the appropriate ACTION should be entered.

FLOG RESPONSE (Supplement): Based upon a conversation with the NRC Staff on March 18, 1999, Table 3.3.6-1 is revised to show Function 1 as "Not Used" and the new insert is deleted. Function 4 is revised to be "Containment Isolation - SI" and the associated Note now identifies Functions 1 and 3 as the reference for all initiating functions and requirements. The Bases for Table 3.3.6-1, Function 1 is revised to be "Not Used." The Bases for Function 4 is revised to describe the use of Functions 1 and 3.

ATTACHED PAGES:

Encl. 5A	3.3-68
Encl. 5B	B 3.3-112, B 3.3-164, B 3.3-165

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	TRIP SETPOINT	3.3-79
				~~Remove Strikeout~~	
1. ~~NOT USED~~ STET ~~Manual Initiation~~ Remove StrikeOut	~~INSERT 3.3-77~~	2	~~SR 3.3.6.6~~	NA	3.3-77 Q 3.3-77
2. Automatic Actuation Logic and Actuation Relays	1, 2, 3, 4, ~~6, and~~ (a) and (b)	2 trains 1	SR 3.3.6.2 SR 3.3.6.3 SR 3.3.6.5	NA	3.3-32 Q 3.3-32 PS
3. Containment ~~Ventilation Exhaust~~ Purge Radiation	1, 2, 3, 4, ~~6, and~~ (a) and (b)				Q 3.3-79
INSERT Q 3.3-79 a. Gaseous ~~#4~~ ~~A/B~~ / Particulate	~~1, 2, 3, 4~~ (a)	~~[1]~~ 2 1(b)	SR 3.3.6.1 SR 3.3.6.4 ~~SR 3.3.6.7~~ ~~SR 3.3.6.8~~ SR 3.3.6.8	≤ ~~[2 x background]~~ Per ODCM	3.3-32 ~~3.3-31~~ Q 3.3-55 REMOVE Strikeout
~~b. Particulate~~		~~[1]~~	~~SR 3.3.6.1~~ ~~SR 3.3.6.4~~ ~~SR 3.3.6.7~~	~~≤ [2 x background]~~	3.3-32
~~c. Iodine~~		~~[1]~~	~~SR 3.3.6.1~~ ~~SR 3.3.6.4~~ ~~SR 3.3.6.7~~	~~≤ [2 x background]~~	3.3-32
~~d. Area Radiation~~		~~[1]~~	~~SR 3.3.6.1~~ ~~SR 3.3.6.4~~ ~~SR 3.3.6.7~~	~~≤ [2 x background]~~	3.3-32

1 AND 3 Q 3.3-77

4. Containment Isolation – SI ~~Phase A~~ — Refer to LCO 3.3.2, "ESFAS Instrumentation," Function ~~3.a.~~ for all initiation functions and requirements. Q 3.3-79

(a) during CORE ALTERATIONS ~~and~~ during movement of irradiated fuel assemblies within containment. 3.3-~~31~~ 79

~~(b) only one monitor is required to be OPERABLE in MODE 6 or during movement of irradiated fuel assemblies within containment.~~ Q 3.3-31 3.3-~~31~~ 79

(b)

Q3.3-32

Insert for Q 3.3-77

Enclosure 5A page 3.3-68
Insert 3.3-77

Containment ventilation isolation is considered manually initiated when SI, Phase "A" isolation, or Phase "B" isolation functions are manually initiated. Refer to LCO 3.3.2 "ESFAS Instrumentation," Function 1.a, 3.a.(1), and 3.b.(1), respectively for required channels and surveillance requirements.

6

BASES

ACTIONS (continued)

B.1, B.2.1 and B.2.2

Condition B applies to manual initiation of:

- SI;
- Containment Spray;
- Phase A Isolation; and
- Phase B Isolation.

This action addresses the train orientation of the SSPS for the functions listed above. If a channel or train is inoperable, 48 hours is allowed to return it to an OPERABLE status. Note that for containment spray and Phase B isolation, failure of one or both channels in one train renders the train inoperable. Condition B, therefore, encompasses both situations. The specified Completion Time is reasonable considering that there are two automatic actuation trains and another manual initiation train OPERABLE for each Function, and the low probability of an event occurring during this interval. If the train cannot be restored to OPERABLE status, the unit must be placed in a MODE in which the LCO does not apply. This is done by placing the unit in at least MODE 3 within an additional 6 hours (54 hours total time) and in MODE 5 within an additional 30 hours (84 hours total time). The allowable Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging ~~unit systems~~

~~INSERT B 3.3.2 ACTION B~~ Q 3.3-77

C.1, C.2.1 and C.2.2

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

- SI;
- Containment Spray;
- Phase A Isolation;

(continued)

Insert for Q 3.3-77

~~Enclosure 5B page B 3.3-112~~
~~Insert B 3.3.2 ACTION B~~

~~With the inoperability of manual initiation of Safety Injection, Containment Isolation Phase A or Phase B, the CVI which is initiated from that function is also inoperable and the appropriate LCO 3.3.6 ACTION should be entered.~~

Q 3.3-77

BASES

BACKGROUND (continued)

~~purge~~ ventilation isolation, which closes ~~both inner and outer~~ the containment ventilation isolation valves ~~in the Mini-Purge System and the Shutdown Purge System~~. These systems are described in the Bases for LCO 3.6.3, "Containment Isolation Valves."

DC ALL-002

APPLICABLE SAFETY ANALYSES

The safety analyses assume that the containment remains intact with penetrations unnecessary for core cooling isolated early in the event, within approximately 60 seconds. The isolation of the ~~purge~~ containment ventilation valves has not been analyzed mechanistically in the dose calculations, although its ~~rapid~~ isolation, using a conservative isolation time, is assumed following a LOCA. The containment ~~purge and exhaust ventilation~~ isolation radiation monitors act as backup to the SI signal to ensure closing of the ~~purge and exhaust containment ventilation~~ containment isolation valves. They are also the primary means for automatically isolating containment in the event of a fuel handling accident during shutdown or any other source within containment. Containment isolation in turn ensures meeting the containment leakage rate assumptions of the safety analyses, and ensures that the calculated accidental offsite radiological doses are below 10 CFR 100 (Ref. 1) limits.

STET STET CONTAINMENT STET DC 3.3-Ed DC 3.3-Ed DC ALL-002

The containment ~~purge and exhaust ventilation~~ isolation instrumentation satisfies Criterion 3 of ~~the NRC Policy Statement~~ 10 CFR 50.36(c)(2)(ii).

STET DC 3.3-Ed

LCO

The LCO requirements ensure that the instrumentation necessary to initiate Containment ~~Purge and Exhaust Ventilation~~ Isolation, listed in Table 3.3.6-1, is OPERABLE.

DC 3.3-Ed STET

1. Manual Initiation

~~NOT USED~~ STET ~~INSERT B 3.3.6~~ Q 3.3-77

~~The LCO requires two channels OPERABLE. The operator can initiate Containment Purge Isolation at any time by using either of two switches in the control room. Either switch actuates both trains. This action will cause actuation of all components in the same manner as any of the automatic actuation signals.~~

~~The LCO for Manual Initiation ensures the proper amount of redundancy is maintained in the manual actuation circuitry to ensure the operator has manual initiation capability.~~

~~Each channel consists of one push button and the interconnecting wiring to the actuation logic cabinet.~~

(continued)

Insert for Q 3.3-77

~~Enclosure 5B page B 3.3-164~~
~~Insert B 3.3.6~~

~~Containment ventilation isolation is considered manually initiated when SI, Phase "A" or Phase "B" isolation functions are manually initiated. Refer to LCO 3.3.2 "ESFAS Instrumentation," Function 1.a, 3.a.(1), and 3.b.(1), respectively for required channels and surveillance requirements.~~

Q 3.3-77

BASES

LCO (continued)

2. Automatic Actuation Logic and Actuation Relays

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

STET

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

STET

3. Containment Radiation

STET

The LCO specifies ~~four~~ two required channels of radiation monitors to ensure that the radiation monitoring instrumentation necessary to initiate Containment ~~Purge~~ ~~Ventilation~~ Isolation remains OPERABLE in MODES 1-4. The LCO only requires one monitor to be OPERABLE during ~~MODE 6~~ or CORE ALTERATIONS or during movement of irradiated fuel assemblies in containment. ~~MODES 1-4. The LCO requires only one monitor to be operable during CORE ALTERATIONS or during movement of irradiated fuel.~~ Q 3.3-79

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

4. Containment Isolation - SI ~~Phase A~~

Refer to LCO 3.3.2, Function 1 AND 3 ~~3.a~~, for all initiating Functions and requirements. Q 3.3-77

(continued)

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: Q 3.3-79 **APPLICABILITY:** CA, CP, DC, WC

REQUEST:

Add Applicability columns to ITS Tables 3.3.6-1 and 3.3.7-1 to reflect current TS with varying Functional Applicabilities.

Comment: Revise submittal to adopt TSTF-161, Rev 1 format. List "core alterations" applicability and "during handling of irradiated fuel" as separate applicability footnotes.

{DC, WC} The applicability for Containment Purge and Exhaust Isolation is broader than required by CTS 3.3.2. This change is neither identified nor discussed.

{DC} ITS Table 3.3.6-1 applicability for the Containment Radiation Function is duplicated. It is not necessary to provide an applicability statement for function 3 if applicability is provided separately within function 3, in this case for function 3.a.

{DC} The required number of channels for function 3.a under applicability condition (a) is inconsistent with the markup of CTS section 3.3.2.

{CP} Explain the design justification for not including Table3.3.6-1 Note "c" in the applicability for actuation logic and relays. Specified logic must support radiation isolation function in the table. If the logic supports Phase A Isolation (T3.3.6-1, F4) then it should not be listed in this table. A single listing of the logic in ESFAS Table 3.3.2-1 is acceptable.

{CW} CTS T4.3-2 F9a, 9b and 9c shows a markup (strikeout) of applicable conditions without evaluation. Provide a revised markup and evaluation of proposed CTS changes. CTS T3.3-3 F9a, 9b and 9c shows no changes to applicable conditions. These differences are not evaluated.

{CW} CTS T3.3-3 Actions 26 and 26**** are used in ITS T3.3.6-1. Changes to these CTS requirements are neither identified nor evaluated.

FLOG RESPONSE (Original): Comment 1: In response to the first comment, ITS Table 3.3.6-1 has been revised to reflect TSTF-161 Rev. 1. Applicability footnote (a) has been divided into "(a) During CORE ALTERATIONS" and "(b) During movement of irradiated fuel assemblies within containment." No changes to current TS Table 3.3-3 Functional Unit 3.c or to the ITS 3.3.6 Bases are required. For WCGS, DOC 3-20-LS-51 was initiated to revise CTS Table 3.3-6, Functional Unit 1.a, to revise the Mode of Applicability from "All" to "1, 2, 3, 4, During CORE ALTERATIONS, During movement of irradiated fuel assemblies within containment."

The mark-up of STS LCO 3.3.7 Applicability in Enclosure 5A shows the strike-through of "During CORE ALTERATIONS" under JFD 3.3-79. That JFD has been revised to discuss the rationale behind the strike-through. Since ITS Table 3.3.7-1 includes all MODES 1-6, the LCO is applicable any time fuel is in the reactor vessel. Since CORE ALTERATIONS involve activities conducted while fuel is in the vessel, including this requirement in the LCO Applicability is unnecessarily redundant given the definitions of CORE ALTERATION and

MODE. This same approach was taken in ITS 3.7.10. DCPP has also made changes to the ITS 3.3.7 Bases to correct and clarify the applicability. No changes were required for other FLOG plants' ITS 3.3.7 Bases.

Comment 2: For the second comment, for DCPP, the CVI is required to be OPERABLE as an ESFAS function in MODES 1 through 4 via function 3.c. of CTS Table 3.3-3. For CTS 3.9.9, the Containment Ventilation Isolation system is required to be OPERABLE during CORE ALTERATIONS and during movement of irradiated fuel. For CTS Table 3.3-6 function 3.a.3) and 3.b.1), the MODE requirements are MODE 6. The requirements for CTS Table 3.3-6 function 3.a.3) and 3.b.1) are revised via new DOC 03-22-LS20 to revise the MODE 6 requirement to MODE 6 during CORE ALTERATIONS only. It does not make sense to require the instrumentation to be OPERABLE when the system it actuates is not required to be OPERABLE. Note that DOC 02-05-M already added during movement of irradiated fuel. These CTS requirements were consolidated in ITS 3.3.6.

Comment 3: For the third comment, the duplicate applicability has been deleted and the sub-function "a" has been incorporated under the main function "3." In addition, the title of the function has been revised to "Containment Ventilation Exhaust Radiation Gaseous/particulate" since for DCPP a single monitor accomplishes the monitoring for gaseous, particulate and iodine radiation functions for detection of a fuel handling accident as explained in the ITS 3.3.6 bases. This title is also consistent with the CTS terminology.

Comment 4: CTS Table 3.3-3 has been marked up for clarity to show the MODE 6 and channel requirements of Table 3.3-6. In addition, a new DOC 2-51-LG is used to move the descriptive channel identifiers to the ITS 3.3.6 bases. Changes have been made to the 3.3.7 Bases to clarify the LCO applicability.

Comment 5: For CPSES, other changes to ITS Table 3.3.6-1 are also addressed in response to this question. The footnote (a) has been incorporated into table 3.3.6-1, Functional Unit 1 directly, rather than by reference. Subsequent footnotes have been re-lettered. Further, the notation describing the strike-out of STS Functional Units 3.b., 3.c. and 3.d has been revised to reference JFD 3.3-79, rather than JFD 3.3-73, as contained in the original CPSES submittal.

Comments 6 and 7: These comments were resolved during meetings with NRC staff on September 16 and 17, 1998. However, Reference 5 is silent on the resolution of comment 7. Changes to CTS Table 3.3-3 ACTION 26 for ESFAS Functional Units 9.a, 9.b, and 9.c are identified on page 3/4 3-21 and Insert 3/4 3-21 in Enclosure 2 and are evaluated under DOCs 1-04-LG, 1-43-A, 2-16-LS-12, and 2-26-LS-21 (see also responses to comments on the last two DOCs). No DOC is needed for the **** note in CTS Table 3.3-3 since that note is consistent with ITS 3.0.4 (i.e., 3.0.4 does not apply in MODES 5 and 6).

FLOG RESPONSE (Supplement): Based upon discussions with the NRC Staff on March 25, 1999, the format of Table 3.3.6-1, Functions 2 and 3, is changed to provide two separate lines for each function based upon Applicability.

ATTACHED PAGES:

Encl. 5A 3.3-68

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	TRIP SETPOINT	3.3-79
~~1.~~ ~~NOT USED~~ ~~Manual Initiation~~ STET Remove StrikeOut	~~INSERT 3.3-77~~	2	~~SR 3.3.6.6~~	NA ~~Remove StrikeOut~~	3.3-77 Q 3.3-77
2. Automatic Actuation Logic and Actuation Relays	1, 2, 3, 4, ~~6, and~~ (a) AND (b)	2 trains 1	SR 3.3.6.2 SR 3.3.6.3 SR 3.3.6.5	NA	3.3-32 Q 3.3-32 PS
3. Containment ~~Ventilation Exhaust~~ PURGE Radiation	1, 2, 3, 4, ~~6,~~ and (a) AND (b)				Q 3.3-79
INSERT Q 3.3-79 a. Gaseous ~~R4 A/B~~ /Particulate	~~1, 2, 3, 4~~ (a)	~~[1]~~ 2 1(b)	SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.7 ~~SR 3.3.6.8~~ SR 3.3.6.8	~~≤ [2 x background]~~ Per ODCM	3.3-32 3.3-31 Q 3.3-55 REMOVE StrikeOut
~~b. Particulate~~		~~[1]~~	~~SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.7~~	~~≤ [2 x background]~~	3.3-32
~~c. Iodine~~		~~[1]~~	~~SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.7~~	~~≤ [2 x background]~~	3.3-32
~~d. Area Radiation~~		~~[1]~~	~~SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.7~~	~~≤ [2 x background]~~	3.3-32

1 AND 3 Q 3.3-77

4. Containment Isolation – ~~Phase A~~ SI — Refer to LCO 3.3.2, "ESFAS Instrumentation," Function ~~3.a.~~ for all initiation functions and requirements. Q 3.3-79

(a) during CORE ALTERATIONS ~~and~~ during movement of irradiated fuel assemblies within containment. 3.3-~~31~~ 79 Q3.3-31

~~(b) only one monitor is required to be OPERABLE in MODE 6 or during movement of irradiated fuel assemblies within containment.~~ (b) 3.3-~~31~~ 79 Q3.3-32

Insert for Q 3.3-79
Encl. 5A Page 3.3-68
Insert for Functions 2 and 3

2. Automatic Actuation Logic and Actuation Relays	1, 2, 3, 4,	2 trains	SR 3.3.6.2 SR 3.3.6.3 SR 3.3.6.5	NA
	(a) and (b)	1 train	SR 3.3.6.2 SR 3.3.6.3 SR 3.3.6.5	NA
3. Containment Purge Radiation Gaseous and Particulate	1, 2, 3, 4,	2	SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.7 SR 3.3.6.8	Per ODCM
	(a) and (b)	1	SR 3.3.6.1 SR 3.3.6.4 SR 3.3.6.7 SR 3.3.6.8	Per ODCM

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: Q 3.3-82 **APPLICABILITY:** DC

REQUEST:

The CONDITIONS, REQUIRED ACTIONS, etc. are revised per the DCPP current licensing basis. The plant FBACS does not perform any accident mitigation functions except during the fuel handling accident.

Comment: CTS markup is missing Actions A.1.2.3.1 and Condition C. Provide the necessary corrections and justification.

Proposed ITS Action 1.2.3.2 has no stated completion time. Provide a revised ITS and the necessary corrections and justifications.

FLOG RESPONSE (Original): CTS ACTION 30 and 32 are applicable to the fuel handling building radiation monitors. ITS ACTION A.1.2.3.1 is part of ACTION 32 via its reference to CTS LCO 3.9.12; however, to clarify the requirements, ACTION 30 has been revised to include ITS ACTION A.1.2.3.1. CONDITION C is included in CTS ACTION 30 directly, and in ACTION 32 via required entry into the Action requirements of CTS LCO 3.9.12.

The completion time has been inserted for ITS ACTION A.1.2.3.1.

The CTS, via notes (a) and (b) in Table 3.3-6, states that the requirements for Fuel Handling Building Ventilation Change are applicable and that ACTION 32 will not be applicable to the Fuel Storage Area Monitors following installation of RM-45A and 45B. The original intent was to install these monitors (RM-45A and 45B) as part of the radiation monitor upgrade (LA 70/69) to improve the reliability of the function. However, since the performance and reliability of the existing Fuel Storage Area Monitors has been improved, and because of the expense of installing these new monitors, the project has been canceled. Since the monitors are not installed and there is no intent to install these monitors, the notes regarding their function will be deleted from the CTS Tables 3.3-6 and 4.3-3 via DOC 3-21-LS52 and will not be incorporated into the ITS. The Fuel Storage Area Monitors will continue to provide initiation of the Fuel handling Building Ventilation Mode Change due to a fuel handling accident.

FLOG RESPONSE (Supplement): Based upon discussions with the NRC Staff on March 26, 1999, LCO 3.3.8, Condition A is reordered to place the 30-day Action at the end of the logic chain rather then at the beginning. Action 1.2.3.2 is deleted since it is a repeat of the specified actions of Required Action A 1.1. The Note "Not Used" in Action B is deleted and Action C is re-labeled as Action B. The inoperability of "Manual Channels" is added to the re-labeled Condition B. The Bases has been revised consistent with these changes.

ATTACHED PAGES:

Encl. 5A	3.3-75, 3.3-76, 3.3-78
Encl. 5B	B 3.3-185

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one ~~or more~~ channel(s) or train(s) inoperable.	A.~~1.1~~ 1.3 ~~Place one FBACS train in operation.~~ Restore the inoperable monitors to OPERABLE status.	730 days 3.3-82
	AND	
	A.1.2.1 Install an appropriate portable continuous monitor with the same alarm setpoint.	Immediately
	OR	Q 3.3-82
	A.1.2.2 Station an individual qualified in radiation protection procedures with a dose rate monitoring device in the spent fuel pool area.	Immediately
	1.1 OR AND	
	A.~~1.2.3.1~~ Place AND MAINTAIN one FBVS train in the Iodine Removal mode.	Immediately
	AND	
	~~A.1.2.3.2 Enter applicable Conditions and Required Actions of LCO 3.7.13, "Fuel Building Air Cleanup System (FBACS)," for one train made inoperable by inoperable actuation instrumentation.~~	~~Immediately~~ ~~Q 3.3-82~~

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~B.~~ ~~NOT USED~~ ~~One or more Functions with two channels or two trains inoperable.~~	~~B.1.1 Place one FBACS train in operation~~	~~Immediately~~ 3.3-82
	AND	
	~~B.1.2 Enter applicable Conditions and Required Actions of LCO 3.7.13, "Fuel Building Air Cleanup System (FBACS)," for one train made inoperable by inoperable actuation instrumentation.~~	~~Immedi ately~~
~~B. (continued)~~		~~(continued)~~
OR, two MANUAL CHANNELS INOPERABLE.	OR	~~Immediately~~
	~~B.2 Place both trains in emergency [radiation protection] mode.~~	Q 3.3-82
B ~~C~~. Required Action and associated Completion Time for Condition A ~~or B~~ not met ~~during movement of irradiated fuel assemblies in the fuel building~~.	B ~~C~~.1 Suspend movement of irradiated fuel assemblies in the fuel building.	Immediately 3.3-82
[~~D. Required Action and associated Completion Time for Condition A or B not met in MODE 1, 2, 3, or 4.~~	~~D.1 Be in MODE 3.~~	~~6 hours~~]
	AND	
	~~D.2 Be in MODE 5.~~	~~36 hours~~

Table 3.3.8-1 (page 1 of 1)
FBACS Actuation Instrumentation

FUNCTION	APPLICABLE MODES OR SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	TRIP SETPOINT
				3.3-82
1. Manual Initiation	~~[1,2,3,4]~~ (a)	~~2~~ 2	~~SR 3.3.8.4~~ SR 3.3.8.4	~~NA~~ NA
[~~2. Automatic Actuation Logic and Actuation Relays~~	~~1,2,3,4 (a)~~	~~2 trains~~	~~SR 3.3.8.3~~	~~NA~~]
② ~~3.~~ Fuel HANDLING Building Radiation				3.3-82
				B-PS
a. ~~Gaseous~~ Spent Fuel Pool	~~[1,2,3,4]~~ (a)	~~[2]~~ 1	SR 3.3.8.1 SR 3.3.8.2 SR 3.3.8.5	~~≤ [2]~~ ≤ 75 mR/hr
				B-PS
b. ~~Particulate~~ New Fuel Storage Vault	~~[1,2,3,4]~~ (a)	~~[2]~~ 1	SR 3.3.8.1 SR 3.3.8.2 SR 3.3.8.5	~~≤ [2]~~ ≤ 15 mR/hr Q 3.3-82
~~c. Gaseous[(c)]~~	~~(a)~~	~~2~~	~~SR 3.3.8.1~~ ~~SR 3.3.8.2~~ ~~SR 3.3.8.5~~	~~per ODCM~~

(a) During movement of irradiated fuel assemblies in the fuel HANDLING building. Q 3.3-82

~~(b) The requirements for FHBV mode change will not be applicable to the spent fuel storage pool or new fuel storage vault monitors following the installation of the gaseous monitors RM-45A and 45B.~~ ~~3.3-82~~

~~(c) The requirements for FHBV mode change are applicable following the installation of RM-45A and 45B.~~ ~~3.3-82~~

BASES

ACTIONS (continued)

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. ~~Drift can also be observed during a Channel check or CFT and if observed would prompt action to correct the discrepancy.~~

REMOVE STRIKEOUT

Q 3.3-34

A~~Two~~ Note~~s~~ has ~~have~~ been added to the ACTIONS to clarify the application of Completion Time rules ~~and the Applicable of LCO 3.0.3~~. The Conditions of this Specification may be entered independently for each Function listed in Table 3.3.8-1 in the accompanying LCO. The Completion Time(s) of the inoperable channel(s)/train(s) of a Function will be tracked separately for each Function starting from the time the Condition was entered for that Function.

Q 3.3-34

~~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 irradiated fuel assemblies while in Mode 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, 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.1.1, A.1.2.1, A.1.2.2, A.1.3

MOVEMENT OF IRRADIATED FUEL MAY CONTINUE FOR

A single

Condition A applies to the ~~actuation logic train function of the Solid State Protection System (SSPS), the~~ radiation monitor ~~functions~~ and the manual function. Condition A applies to the failure of ~~a single actuation logic train,~~ one or more radiation monitor channels, or manual channel~~s~~. If one or more channels or trains ~~is~~are inoperable, a period of 730 days ~~is allowed to restore it to OPERABLE status. If the train cannot be restored to OPERABLE status,~~ an appropriate portable continuous monitor with the same setpoint, or an individual qualified in radiation protection procedures with a dose rate monitoring device must be in the spent fuel pool area, one ~~FBACS~~FHBVS train must be placed in in the Iodine Removal mode of operation immediately. This effectively accomplishes the actuation instrumentation function and places the ~~unit~~area in a conservative mode of operation or provides appropriate monitoring for continued fuel movement. ~~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 time is the same as that provided in LCO 3.7.13.~~

IF MOVEMENT OF IRRADIATED FUEL CONTINUES,

IMMEDIATELY AND,

Q 3.3-82

~~B.1.1, B.1.2, B.2~~

~~Condition B applies to the failure of two FBACS actuation logic trains, two radiation monitors, or two manual channels. The Required Action is to place one FBACS train in operation~~

(continued)

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: Q 3.3-104 **APPLICABILITY:** DC

REQUEST:

CONDITION A of ITS 3.3.5 is revised to incorporate CTS ACTIONS 15 and 16. CONDITIONS B and C are not used.

Comment: Beyond Scope - - CTS LAR-97-02 request the addition of Actions to address loss of both degraded and LOV channels. PM action to issue amendment. DC action to provide an A-DOC for the change.

The CTS markup for the loss of power function shows two actions. Action 15 applies to the two channel functions and Action 16 applies to the one channel functions. Only Action 15 is reflected in the ITS. It may be that Action 16 can be argued to be subsumed by Action 15. If so, this should be reflected and justified in the CTS markup. If not, Action 16 should be reflected in the ITS markup.

ITS LCO 3.3.5 is modified from the iSTS to incorporate plant design. Use the NEI guidance document to state, using consistent language, the required channels for each bus for each LOP DG Start Function.

FLOG RESPONSE (Original): LAR 97-02 was approved by the NRC as LA 129/127. The markups to incorporate these latest approved revisions are enclosed as Addition Information Number DC 3.3-005.

Item 2 was accepted at the September 15, 1998, meeting since CTS ACTION 16 is subsumed by ACTION 15.

The ITS LCO 3.3.5 has been revised to state the required channels for each bus and for each LOP DG start function.

FLOG RESPONSE (Supplement): Based upon conversations with the NRC Staff on March 26, 1999, and April 6, 1999, LCO 3.3.5 has been revised to eliminate unnecessary information. LCO 3.3.5, Required Action A.1 has been revised to use standard language. The Bases have been revised to clarify the operation of the system.

ATTACHED PAGES:

Encl. 5A	3.3-60
Encl. 5B	B 3.3-156, B 3.3-159

3.3 INSTRUMENTATION

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

LCO 3.3.5 ~~[Three] One channels per bus of the loss of voltage DG start Function and two channels for initiation of load shed Function and [three] two channels per bus of the degraded voltage function with one timer per bus for DG start and initiation of load shed Function shall be OPERABLE.~~ INSERT LCO 3.3.5 — 3.3-133 — Q 3.3-104

APPLICABILITY: MODES 1, 2, 3, and 4.
When associated DG is required to be OPERABLE by LCO 3.8.2, "AC Sources – Shutdown."

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one or more channels per bus inoperable.	A.1 -----------NOTE----------- ~~The inoperable~~One channel may be bypassed for up to 4 2 hours for surveillance testing ~~of other channels~~. ------------------------	3.3-104
	~~Place channel in trip.~~ ~~Declare the associated DG inoperable and enter the applicable Condition(s) and Required Action(s).~~ ENTER APPLICABLE CONDITION(S) AND REQUIRED ACTION(S) FOR THE ASSOCIATED DG MADE INOPERABLE BY LOP DG START INSTRUMENTATION.	~~6 hours~~Immediately Q 3.3-104
~~B. One or more Functions with two or more channels per bus inoperable.~~	~~B.1 Restore all but one channel to OPERABLE status.~~	~~1 hour~~ 3.3-104

(continued)

Insert for Q 3.3-104

Enclosure 5A page 3.3-60
Insert LCO 3.3.5

Q 3.3-104

~~The following LOP DG start instrumentation shall be OPERABLE:~~

6 a) One channel per bus of loss of voltage DG start ~~with two timers per bus for load shed.~~ FUNCTION; AND

6 b) Two channels per bus of degraded voltage ~~with:~~ FUNCTION.

~~1) one timer per bus for DG start and;~~

~~2) one timer per bus for load shed.~~

B 3.3 INSTRUMENTATION

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

BASES

BACKGROUND

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

Three undervoltage relays ~~with inverse time characteristics~~ are provided on each 4160 Class 1E ~~instrument~~ vital bus for detecting ~~a~~ sustained degraded voltage condition or a loss of bus voltage. ~~The~~A relays ~~are combined in a two-out-of-three logic to~~ will generate an LOP signal (first level undervoltage type relay setpoint) if the voltage is below 75% for a short time ~~or below 90% for a long time~~. The DG start relays (one per bus) have an inverse time characteristic and will generate an LOP signal with a ≤0.8 sec time delay at ≈ 0 volts and at ≤ 10 seconds for ≥ 2583 volts. In addition, the circuit breakers for all loads, except the 4160-480 V load center transformers, are opened automatically by ~~a similar set of~~ LOAD SHEDDING RELAYS FOR first level undervoltage ~~relays~~. Each of the vital 4160 kV buses has a separate pair of these relays. The relays have a two-out-of-two logic arrangement for each bus to prevent inadvertent tripping of operating loads during a loss of voltage either from a single failure in the potential circuits or from human error. One relay trips instantaneously at ≥ 2870 volts. The second of the two relays has an inverse time characteristic and a delay of ≤ 4 seconds at no voltage and a ≤ 25 second delay with ≥ 2583 volts to prevent loss of operating loads during transient voltage dips, and to permit the offsite power sources to pick up the load. The LOP start actuation is described in FSAR, Section 8.3 (Ref. 1). (Q 3.3-104)

Should there be a degraded voltage condition (SECOND LEVEL UNDERVOLTAGE), where the voltage of the vital 4160 kV buses remains at approximately 3785 kV or below, but above the setpoints of the first level undervoltage relays, the following second level undervoltage actions occur automatically. (Q 3.3-104)

(1) After a ≤ 10 second time delay, the respective diesel generators will start.

(2) After a ≤ 20 second time delay, if the undervoltage condition persists, the circuit breakers for all loads to the respective vital 4160 kV buses, except the 4160-480 V load center transformer, are opened and sequentially loaded on the DG.

Each vital 4160 kV bus has two second level undervoltage relays ~~and one associated timer to initiate each of the above actions (1) and (2) (one timer for each action)~~. OPERATING WITH A TWO-OUT-OF-TWO LOGIC. EACH VITAL 4160KV BUS ALSO HAS TWO SECOND LEVEL UNDERVOLTAGE TIMERS. ONE TIMER PROVIDES THE DIESEL GENERATOR START AND THE OTHER WILL INITIATE LOAD SHED... (Q 3.3-104)

(continued)

B & E

BASES

APPLICABLE SAFETY ANALYSES (continued)

The LOP DG start instrumentation channels satisfy Criterion 3 of ~~the NRC Policy Statement.~~ 10 CFR 50.36(c)(2)(ii)

DG start, with
stet
two
DC AL-002
and their ~~three~~ corresponding timers

LCO

The LCO s for LOP DG for start instrumentation requires that ~~[three]~~ ~~one~~ ~~two~~ channels per bus ~~of both the~~ loss of voltage and two channels per bus for initiation of load shed and two channels per bus of degraded voltage with one timer per bus for DG start and initiation of load shed Functions shall be OPERABLE in MODES 1, 2, 3, and 4 when the LOP DG start instrumentation supports safety systems associated with the ESFAS. In MODES 5 and 6, the ~~[three]~~ channels must be OPERABLE whenever the associated DG is required to be OPERABLE ~~to ensure that~~ the automatic start of the DG is available when needed. Loss of the LOP DG Start Instrumentation Function could result in the delay of safety systems initiation when required. This could lead to unacceptable consequences during accidents. During the loss of offsite power the DG powers the motor driven auxiliary feedwater pumps. Failure of these pumps to start would leave only one turbine driven pump, as well as an increased potential for a loss of decay heat removal through the secondary system.

functions,

Q 3.3-104

one timer per bus for

APPLICABILITY

The LOP DG Start Instrumentation Functions are required in MODES 1, 2, 3, and 4 because ESF Functions are designed to provide protection in these MODES. Actuation in MODE 5 or 6 is required whenever the required DG must be OPERABLE so that it can perform its function on an LOP or degraded power to the vital bus.

ACTIONS

In the event a channel's Trip Setpoint is found nonconservative with respect to the Allowable Value, or the channel is found inoperable, then the function that channel provides must be declared inoperable and the LCO Condition entered for the particular protection function affected.

Because the required channels are specified on a per bus basis, the Condition may be entered separately for each bus as appropriate.

A Note has been added in the ACTIONS to clarify the application of Completion Time rules. The Conditions of

(continued)

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: CA 3.3-006 **APPLICABILITY:** DC, CA

REQUEST:

Clarify Bases for SR 3.3.1.3.

REQUEST (Revised): For Callaway, Based on NRC reviewer comments on March 4, 1999, the SR 3.3.1.3 insert has been revised as attached.

For DCPP, based upon conversations with the NRC Staff on March 18, 1999, the insert for SR 3.3.1.3 is revised to state "The comparison checks for differences due to changes in core power distribution since the last calibration."

ATTACHED PAGES:

Encl. 5B B 3.3-55

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.2 (continued)

the NIS ~~channel output~~power indications cannot be properly adjusted, the channel is declared inoperable.

Two Notes modify SR 3.3.1.2. The first Note indicates that the NIS ~~channel output~~power indications shall be adjusted consistent with the calorimetric results if the absolute difference between the NIS ~~channel output~~power indications and the calorimetric is > 2% RTP. The second Note clarifies that this Surveillance is required only if reactor power is ≥ 15% RTP and that ~~12~~ 24 hours is allowed for performing the first Surveillance after reaching 15% RTP but prior to exceeding 30% RTP. At lower power levels, calorimetric data are inaccurate. INSERT A

DC 3.3-Ed

Q 3.3-96

The Frequency of every 24 hours is adequate. It is based on unit operating experience, considering instrument reliability and operating history data for instrument drift. Together these factors demonstrate the change in the absolute difference between NIS and heat balance calculated powers rarely exceeds 2% in any 24 hour period.

In addition, control room operators periodically monitor redundant indications and alarms to detect deviations in channel outputs.

SR 3.3.1.3

SR 3.3.1.3 compares the incore system to the NIS channel output every 31 EFPD. If the absolute difference is ≥ 3%, the NIS channel is still OPERABLE, but must be readjusted. INSERT SR 3.3.1.3

CA 3.3-006

If the NIS channel cannot be properly readjusted, the channel is declared inoperable. This Surveillance is performed to verify the f(ΔI) input to the overtemperature ΔT Function.

Two Notes modify SR 3.3.1.3. Note 1 indicates that the excore NIS channel shall be adjusted if the absolute difference between the incore and excore AFD is ≥ 3%. Note 2 clarifies that the Surveillance is required only if reactor power is ≥50% ~~[15%]~~ RTP and that 24 hours is allowed for performing the first Surveillance after reaching 50% ~~[15%]~~ RTP. INSERT B

Q 3.3-96

The Frequency of every 31 EFPD is adequate. It is based on unit operating experience, considering instrument reliability and operating history data for instrument drift. Also, since the ~~slow~~ changes in neutron flux are slow during the fuel cycle ~~can be detected during this interval~~, the expected change in the absolute difference between the incore and excore AFD will be less than 3 percent AFD during this interval.

(continued)

Insert for CA 3.3-006

Enclosure 5A page B 3.3-55
Insert SR 3.3.1.3

CA 3.3-006

The ~~sole purpose of the~~ comparison ~~is to~~ checks for differences due to changes in core power distribution since the last calibration.

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: DC 3.3-004 **APPLICABILITY:** DC

REQUEST:

Delete JFD 3.3-111 as being applicable to DCPP and restore Enclosure 5A SR 3.3.1.7 to adopt NUREG-1431. This change also deletes CTS Table 4.3-1 note (8) as applicable to the source range monitors and applies new note (20) instead. In MODES 3*, 4*, and 5*, (the * indicates that the Control Rod Drive System is capable of rod withdrawal or all rods are not inserted), the Intermediate Range and Power Range NIS monitors, the source of the interlocks, are not required to be OPERABLE. Thus, the interlock lights are in their "Intermediate and Power Range monitor not powered" condition. Since this information does not verify the OPERABILITY of the interlocks, the note (8) verification is meaningless. Requiring the interlock verification in MODE 2 via new note (22) is meaningful and has been used in place of note (8). DOC 1-52-LG is revised to modify the brackets that incorporated WC 3.3-007, since the requested change is no longer applicable to DCPP. The Bases for SR 3.3.1.7 are revised to note that if SR 3.3.1.8 has been performed for the source range instrumentation in MODE 2 at the required frequency, then the requirements of SR 3.3.1.7 are met.

REQUEST (Revised): Based upon discussions with the NRC Staff on March 25, 1999, this revision is withdrawn and the CTS restored. CTS Note 8 is restored, the applicability of JFD 3.3-111 is restored, and new CTS Note 20 is removed as applicable to the Source Range.

ATTACHED PAGES:

Encl. 2	3/4 3-10, 3/4 3-13
Encl. 3A	10, 13 (information) and 14
Encl. 3B	8, 13 (information) and 14
Encl. 4	NSHC Contents and Insert NSHC LS54
Encl. 5A	3.3-14
Encl. 5B	B 3.3-57, B 3.3-58
Encl. 6A	9
Encl. 6B	17

TABLE 4.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL OPERATIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	ACTUATION LOGIC TEST	~~MODES FOR WHICH SURVEILLANCE IS REQUIRED~~	
1. Manual Reactor Trip	N.A.	N.A.	N.A.	~~R(14)~~ (9) R24	N.A.	~~1, 2, 3*, 4*, 5*~~	Q1-23, DC ALL-001
2. Power Range, Neutron Flux a. High Setpoint	S	D(2, 4), ~~M(3, 4)~~, ~~Q(4, 6)~~, R(4, 5, 22)	Q	N.A.	N.A.	~~1, 2~~	
b. Low Setpoint	S	R(4, 5, 22)	S/U(1, 20) Q(19, 20)	N.A.	N.A.	~~1###, 2~~	DC ALL-005
3. Power Range, Neutron Flux, High Positive Rate	N.A.	R(4, 5, 22)	Q	N.A.	N.A.	~~1, 2~~	DC ALL-002
4. Power Range, Neutron Flux, High Negative Rate	N.A.	R(4, 5, 22)	Q	N.A.	N.A.	~~1, 2~~	
5. Intermediate Range, Neutron Flux	S	R(4, 5)	S/U(1, 20) Q(19, 20)	N.A.	N.A.	~~1###, 2~~	DC AL-005
6. Source Range, Neutron Flux	S	~~R(4, 5)~~	S/U(1, 8), Q(8, 19)	N.A.	N.A.	~~2##, 3, 4, 5~~	DC ALL-002
7. Overtemperature ΔT	S	R(22), ~~M(3, 4)~~, ~~Q(4, 6)~~	Q	N.A.	N.A.	~~1, 2~~	DC 3.3-004
8. Overpower ΔT	S	R(22)	Q	N.A.	N.A.	~~1, 2~~	DC ALL-005
9. Pressurizer Pressure-Low	S	R(22)	Q	N.A.	N.A.	~~1~~	
10. Pressurizer Pressure-High	S	R(22)	Q	N.A.	N.A.	~~1, 2~~	DC ALL-005
11. Pressurizer Water Level-High	S	R(22)	Q	N.A.	N.A.	~~1~~	
12. Reactor Coolant Flow-Low	S	R(22)	Q	N.A.	N.A.	~~1~~	DC ALL-005

24 24 24 24 24 24 STET 6

01-44-A
1-41-A
01-32-LG
01-21-A
01-23-A
01-22-M
01-23-A
01-39-A
01-23-A
01-39-A
01-23-A
STET
01-22-M
01-26-LG
01-28-A
01-27-LS10
01-23-A
01-21-A
01-23-A
01-23-A
01-23-A
01-23-A
01-23-A

~~01-60-LS54~~
~~01-67-17~~
DC 3.3-004

TABLE 4.3-1 (Continued)

TABLE NOTATIONS

* -	When ~~the Reactor Trip System breakers are closed and~~ the Control Rod Drive System is capable of rod withdrawal or all rods not fully inserted.	01-55-LS39
## -	Below P-6 (Intermediate Range Neutron Flux Interlock) Setpoint.	
### -	Below P-10 (Low Setpoint Power Range Neutron Flux Interlock) Setpoint.	
(1) -	If not performed in previous ~~31~~ 92 days.	01-24-LS9
(1a) -	If not performed in previous 31 days.	01-24-LS9
(2) -	Heat balance only, above 15% of RATED THERMAL POWER. During startup in MODE 1 above 15% of RATED THERMAL POWER, the required heat balance shall be performed prior to exceeding 30% of RATED THERMAL POWER, or within 24 hours, whichever occurs first. Adjust channel if absolute difference greater than 2%. ~~The provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1.~~	01-25 (A) M 01-25
(3) -	Compare incore to excore axial flux difference ~~above~~ within 24 hours after Thermal Power is greater that or equal to ~~15~~50% of RATED THERMAL POWER and at least once per 31 Effective Full Power days. Re-calibrate if the absolute difference is greater than or equal to 3%. ~~The provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1.~~	01-25 (A) M 01-25
(4) -	Neutron detectors may be excluded from CHANNEL CALIBRATION.	
(5) -	~~Detector plateau curves shall be obtained and evaluated for the source range neutron flux channels. For the Intermediate Range and Power Range Neutron Flux channels a test shall be performed that shows allowed variances of detector voltage do not effect detector operation.~~ For the Intermediate Range and Power Range Neutron Flux Channels the ~~provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1~~ 72	01-26-LG WC 3.3-022 01-70-M
(6) -	Incore - Excore Calibration, ~~above~~ within 24 hours after Thermal Power is ≥ 75% of RATED THERMAL POWER and at least once per 92 Effective Full Power days. ~~The provisions of Specification 4.0.4 are not applicable for entry into MODE 2 or 1.~~	01-25 (A) M 01-25
(7) -	Each train shall be tested at least every ~~62~~ 31 days on a STAGGERED TEST BASIS.	
~~(8)~~ - STET	~~Quarterly Surveillances in MODES 3*, 4* and 5* performed quarterly and prior to startup shall also include verification that permissives P-6 and P-10 are in their required state for existing plant conditions by observation of the permissive annunciator window.~~ STET	~~01-28-A~~ ~~01-28-LS64~~ DC 3.3-004
(9) -	Setpoint verification is not applicable.	
~~(10)~~	~~The TRIP ACTUATING DEVICE OPERATIONAL TEST shall separately verify the OPERABILITY of the undervoltage and shunt trip attachments of the Reactor Trip Breakers.~~	01-32-LG WC 3.3-022
(11) -	Deleted	
(12) -	Deleted	
(13) -	Deleted	

DETECTOR PLATEAU VOLTAGE VERIFICATION IS PERFORMED WITHIN 72 HOURS AFTER ACHIEVING EQUILIBRIUM CONDITIONS WITH THERMAL POWER ≥ 95% RTP.

01-70-M

CHANGE NUMBER	NSHC	DESCRIPTION
01-26	LG	This change moves the details concerning NIS detector calibration to the Bases for ITS SR 3.3.1.11, consistent with NUREG-1431. This information is more appropriately controlled outside of the TS while the calibration requirement itself and its Frequency are unchanged.
01-27	LS10	Surveillances on the Source Range Neutron Flux trip function are reorganized to reflect plant status in accordance with NUREG-1431. New Note [(19)] requires that the quarterly COT be performed within 4 hours after reducing power below the respective source range instrumentation Applicabilities, if not performed within the previous [92] days. Since the COT is valid for [92] days, there is no need to repeat it if one has been performed within the prior [quarter]. The 4 hour allowance permits a normal shutdown to proceed without a delay for testing in MODE 2 and for a short time in MODE 3 until ~~the Reactor Trip Breakers are opened and~~ all rods are fully inserted and the Rod Control System is rendered incapable of rod withdrawal, after which this trip function no longer provides protection. Since the CTS has no Specification 4.0.4 exception, this 4 hour allowance is less restrictive. TR 3.3-006
01-28	A	STET Note [8] is revised to require the P-6 and P-10 interlock verification to be performed during all source range COTs. These permissives are verified to be in their correct state prior to entry into MODES 3, 4, and 5 during shutdown and after leaving MODES 3, 4, and 5 during startup. These changes are consistent with NUREG-1431. ~~not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).~~ DC 3.3-004
01-29	LG	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).
01-30	M	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).
01-31	A	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).
01-32	LG	[ ] [Note (10) of CTS Table 4.3-1 is deleted since it is redundant; every TADOT requires independent UVTA and STA verification per ITS SR 3.3.1.4, not just those TADOTs following maintenance or adjustment.] Notes [(14) and (16) applicable to the RTBs and the RTB bypass breakers] of CTS Table 4.3-1 are moved to the Bases for ITS SR 3.3.1.14. These changes are consistent with NUREG-1431.
01-33	TR1	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).
01-34	A	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).

CHANGE NUMBER	NSHC	DESCRIPTION
01-50	A	~~ACTION [28] of the CTS duplicates CTS ACTION [6] and is deleted.~~ Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B). DC 3.3-00
01-51	LG	This change moves the description of the P-7 inputs, i.e., P-10 and P-13, to the Bases since they are duplicated by Functional Units [20.e and 20.f]. The Required Channels column for P-7 lists "1 per train" since this is a more appropriate convention for a logic function. These changes are consistent with NUREG-1431. ~~[This change also deletes the surveillance requirements for P-7 per CN 3.3-54 in the ITS since the COTs and channel calibration apply to P-10 and P-13 not to the P-7 logic function.]~~ Q 1-51
01-52	LG	This change moves the specifics on how to verify permissive functions of ACTIONS [8] and [21] to the Bases, consistent with NUREG-1431. This information is more appropriately controlled outside of the TS while the underlying requirement to verify proper permissive operation is unchanged. DC 3.3-00
01-53	~~A~~	~~CTS Table 3.3-1 ACTION Statement [2.c] is revised to be consistent with ITS SR 3.2.4.2, as discussed in CN 4-04-LS-12 in the 3/4.2 package.~~ Not used. Q 1-53
01-54	LS37	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).
01-55	LS39	APPLICABILITY Note [*] and ACTION Statement [11] for Functional Units [1, 6.b, 20, and 21] of CTS Table 3.3-1 are modified to provide an alternative to opening the reactor trip breakers (RTBs) while still assuring that the function and intent of opening the RTBs is met. As currently worded, these ACTION Statements result in a feedwater isolation signal (FWIS) when in MODE 3 with a T_{avg} less than [554°F. FSAR Table 7.3-3 and FSAR Figure 7.2-1 (sht. 13) detail the FWIS generation on the coincidence of P-4 and low T_{avg}.] A more generic action, which requires that action be initiated to assure the rods are fully inserted and cannot be withdrawn, replaces the specific method of precluding rod withdrawal. The revised APPLICABILITY and ACTION Statements still assure rod withdrawal is precluded. This change does not involve any safety impact and is consistent with traveler TSTF-135. TR 3.3-00
01-56	~~A~~ LS 47	~~The DCPP~~ CTS 3.3.1 ACTION 2.c requires that power be reduced to less than 75% or that SR 4.2.4.2 be performed whenever power is ≥ 50%. This power level requirement should be ≥ 75% since if power is decreased below 75% per the first part of Action 2.c, the required ACTION is complete and in addition, SR 4.2.4.2 is only required for power levels ≥ 75% with one power range detector inoperable. Q 1-56 DC ALL-002

CHANGE NUMBER	NSHC	DESCRIPTION
01-57	LG	CTS Table 3.3-1 Functional Units [12.a and 12.b] are combined per Traveler TSTF-169. The Required Channels, ACTION Statement, and Surveillance Requirements are the same for both Functional Units. The only difference between the two is the APPLICABILITY which could lead to entry into ACTION Statement 6 for Functional Unit [12.a], followed by a power reduction below P-8 exiting the APPLICABILITY and required ACTIONs for that Functional Unit, and subsequent re-entry into ACTION Statement 6 for Functional Unit [12.b]. This would involve an improper cumulative AOT of 12 hours before tripping an inoperable channel, beyond that evaluated in WCAP-10271 and its Supplements. The relationships between these Functional Units and permissives P-7 and P-8 are moved to the ITS 3.3.1 Bases.
01-58	A	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).
01-59	LS46	~~Not Used.~~ INSERT 1-59-LS59 Q1-51
01-60	A	~~Not Used.~~ Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B). TR3.3-007
01-61	M	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).
02-01	A	The Engineered Safety Features Actuation System Instrumentation [Trip Setpoints and] Allowable Values are moved to ITS Table 3.3.2-1.
02-02	A	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).
02-03	LG	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).
02-04	LG	The requirements stipulated in ACTIONS a and b are moved to ITS Table 3.3.2-1, with explicit direction contained in the ITS ACTIONS Bases.
02-05	M	~~Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).~~ INSERT 2-05 Q2-05(3.3)
02-06	LS33	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).
01-62	A	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).
01-65	A	

INSERT 1-63-A Q1-AGEN

INSERT 1-64-A Q1-23

INSERT 1-66-LS45 Q3.3j

INSERT 1-67-M Q3.3-46

~~INSERT 1-68-LS54~~ 1-68-LS54 not used DC3.3-004

DC3.3-004

~~INSERT 1-69-M~~ 1-69-M not used

INSERT 1-70-M WC3.3-022

insert for DC 3.3-004

Enclosure 3A page 14
Insert 1-68-LS54

1-68	LS54	This change deletes DCPP CTS Table 4.3-1 note (8) which is applicable to the source range. The verification cannot be performed in MODE 3*, 4*, and 5*, since the power and intermediate range channels are not required to be OPERABLE until MODE 2. The only verification that can presently be performed is to verify that the lights are out, which is correct for the required condition, i.e., source range powered and power and intermediate range not powered.
1-69	M	This change applies new note (20) to DCPP CTS Table 4.3-1 function 6, source range neutron flux. This requirement replaces the previous note (8) that was deleted by CN 1-68-LS54 and requires that P-6 and P-10 be verified in the required state prior to entering MODE 2.

CONVERSION COMPARISON TABLE - CURRENT TS 3/4.3

TECH SPEC CHANGE		APPLICABILITY			
NUMBER	DESCRIPTION	DIABLO CANYON	COMANCHE PEAK	WOLF CREEK	CALLAWAY
01-28 A	Note [8] is revised to require the P-6 and P-10 interlock verification to be performed during all source range COTs. These permissives are verified to be in their correct state prior to entry into MODES 3, 4, and 5 during shutdown and after leaving MODES 3, 4, and 5 during startup.	STET ~~Yes~~ ~~No, see CN 1-68 LS54 and 1-69-11.~~	Yes	Yes	Yes DC 3.3-004
01-29 LG	This change moves the details regarding measurement of loop-specific ΔT values to the BASES for ITS SR 3.3.1.6.	No, not in CTS.	No, not in CTS.	No, not in CTS.	Yes
01-30 M	Boron Dilution Mitigation System (BDMS) signal blocking and surveillance requirements are moved to ITS LCO 3.3.9. This is a more restrictive requirement since the BDMS, other than the inputs from the source range channels, currently has no LCO or ACTION requirements.	No, not in CTS.	No, not in CTS.	No, not in CTS.	Yes
01-31 A	One-time surveillance waivers are deleted. They are no longer applicable.	No, not in CTS.	Yes	Yes	Yes
01-32 LG	[ ] [Note (10) of CTS Table 4.3-1 is deleted since it is redundant; every TADOT requires independent UVTA and STA verification per ITS SR 3.3.1.4, not just those TADOTs following maintenance or adjustment.] Notes [(14) and (16)] of CTS Table 4.3-1 are moved to the BASES for ITS SR 3.3.1.14.	Yes	Yes	Yes	Yes
01-33 TR1	The BDMS actuation SR is changed to allow the use of an actual signal, if and when one occurs, to satisfy surveillance requirements.	No, not in CTS.	No, not in CTS.	No, not in CTS.	Yes

CONVERSION COMPARISON TABLE - CURRENT TS 3/4.3

TECH SPEC CHANGE		APPLICABILITY			
NUMBER	DESCRIPTION	DIABLO CANYON	COMANCHE PEAK	WOLF CREEK	CALLAWAY
01-52 LG	This change moves the specifics on how to verify permissive functions of ACTIONS [8] and [21] to the Bases.	Yes	Yes	Yes	Yes DC 3.3-004
01-53 ~~A~~	~~CTS Table 3.3-1 ACTION Statement [2.c] is revised to be consistent with ITS SR 3.2.4.2, as discussed in CN 4-04-LS-12 in the 3/4.2 package.~~ Not used.	~~Yes~~ NA	~~Yes~~ NA	~~Yes~~ NA	~~Yes~~ NA Q 1-53
01-54 LS37	ACTION Statement 5.b of Callaway's CTS Table 3.3-1 is revised to change the 14 day recurring verification of the closed status of the unborated water source isolation valves to 31 days.	No	No	No	Yes
01-55 LS39	Applicability Note [*] and ACTION Statement [11] for Functional Units [1, 6.b, 20, and 21] of CTS Table 3.3-1 are modified to provide an alternative to opening the reactor trip breakers (RTBs) while still assuring that the function and intent of opening the RTBs is met.	Yes	Yes	Yes	Yes
01-56 ~~A~~ LS~~XX~~ 47	The DCPP CTS 3.3.1 Action 2.c requires that power be reduced to less than 75% or that SR 4.2.4.2 be performed whenever power is ≥ 50%. This power level requirement should be ≥ 75% since if power is decreased below 75% per the first part of Action 2.c, the required Action is complete and in addition, SR 4.2.4.2 is only required for power levels ≥ 75% with one power range detector inoperable.	Yes	No	No	No Q 1-56
01-57 LG	CTS Table 3.3-1 Functional Units [12.a and 12.b] are combined per TSTF-169. The relationship between Functional Units is moved to the Bases.	Yes	Yes	Yes	Yes

CONVERSION COMPARISON TABLE - CURRENT TS 3/4.3

TECH SPEC CHANGE		APPLICABILITY			
NUMBER	DESCRIPTION	DIABLO CANYON	COMANCHE PEAK	WOLF CREEK	CALLAWAY
01-58 A	The proposed change would allow Reactor Trip System and ESFAS sensor response time testing to be performed per WCAP-13632-P-A Revision 2, "Elimination of Pressure Sensor Response Time Testing Requirements," or other similar methodologies. This change is consistent with traveler TSTF-111, which revises the Bases for ITS SR 3.3.1.16 and SR 3.3.2.10 to allow the elimination of pressure sensor response time testing.	No, see CN 1-03-LS1.	Yes	No, see CN 1-03-LS1.	No, see CN 1-03-LS1.
01-59	~~Not Used.~~ INSERT 1-59 - LS46(a)	~~N/A~~ Yes	~~N/A~~ No	~~N/A~~ No	~~N/A~~ No Q 1-51
01-60-A	~~Not Used~~ The TADOT frequency for F.U. 16a and 16b in CPSES CTS Table 4.3-1 is revised to be consistent with the Modes for which surveillance is required column.	~~N/A~~ No	~~N/A~~ Yes	~~N/A~~ No	~~N/A~~ No TR 3.3-007
01-61 M	If the requirements of current CPSES ACTION Statement 6 are not met, LCO 3.0.3 would be entered. In accordance with the ISTS, this ACTION Statement is revised to state that, if the ACTION requirements are not met, the plant must be taken below the P-7 interlock setpoint within the next 6 hours.	No, see CN-01-19-LS8.	Yes	No, see CN-01-19-LS8.	No, see CN-01-19-LS8.
02-01 A	The Engineered Safety Features Actuation System Instrumentation [Trip Setpoints and] Allowable Values are moved to ITS Table 3.3.2-1.	Yes	Yes	Yes	Yes
02-02 A	CTS ACTION b.1, Equation 2.2-1, and the values for Total Allowance (TA), Z, and Sensor Error (S) are deleted, consistent with NUREG-1431 Rev. 1.	No, not in CTS.	No, not in CTS.	Yes	Yes
02-03 LG	The Engineered Safety Features Actuation System Instrumentation Trip Setpoints are moved to a licensee controlled document.	No, retained in ITS.	Yes, moved to Bases.	Yes, moved to ITS 3.3.2 Bases.	Yes, moved to ITS 3.3.2 Bases.

INSERT 1-63 - A(a)
INSERT 1-64 - A(a)
INSERT 1-66 - LS45(a)
INSERT 1-67 - M(a)
INSERT 1-68 - LS54(a)
INSERT 1-69 - M(a)
INSERT 1-70 - M

Q 1-AGEN
Q 1-23
Q 3.3 i
Q 3.3-46
DC 3.3-004
DC 3.3-004
WC 3.3-022

Insert for DC 3.3-004

Enclosure 3B page 14
Insert 1-68/69a Not Used

01-68 LS54	~~This change deletes DCPP CTS Table 4.3-1 note (8) which is applicable to the source range. The verification cannot be performed in MODE 3*, 4*, and 5* since the power and intermediate range channels are not required to be operable until MODE 2.~~	~~Yes; See also CN 1-69-M.~~ N/A	~~No~~ N/A	~~No~~ N/A	~~No~~ N/A
01-69 M	This change applies new note (20) to DCPP CTS Table 4.3-1 function 6, source range neutron flux. Not Used	~~Yes; See also CN 1-68-LS54.~~ N/A	~~No~~ N/A	~~No~~ N/A	~~No~~ N/A

NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC)
CONTENTS

V. Recurring No Significant Hazards Considerations - "TR"

Insert for DC 3.3-004

Enclosure 4
Insert NSHC LS54

NSHC LS54
10 CFR 50.92 EVALUATION
FOR
TECHNICAL CHANGES THAT IMPOSE LESS RESTRICTIVE
REQUIREMENTS WITHIN THE TECHNICAL SPECIFICATIONS

The CTS in Table 4.3-1 specifies via note (8) that during the Channel Operational Test for the source range neutron monitors in MODE 3, 4, and 5, when the Control Rod Drive System is capable of rod withdrawal or all rods are not inserted, that the P-6 and P-10 interlocks be verified in their required state. Since P-6 and P-10 are initiated by the power and intermediate range neutron flux detectors and they are not required to be OPERABLE until MODE 2, the only verification that can be performed is to verify that the lights are not illuminated. This is the required state for the interlocks under these conditions, but does not provide any useful information to the operator or technician. Therefore, note (8) is deleted and new note (20) is inserted by DOC 1-69-M.

The 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 deletion of note (8) does not change the manner in which the plant is operated or the way in which the surveillance tests are performed. Overall protection system performance will remain within the bounds of the previously performed accident analyses since no hardware changes are proposed. The proposed change will not affect the probability of any event initiators nor will the proposed change affect the ability of any safety-related equipment to perform its intended function. There will be no degradation in the performance of nor an increase in the number of challenges imposed on safety-related equipment assumed to function during an accident situation.

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

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

There are no hardware changes nor are there any changes in the method by which any safety-related plant system performs its safety function. The proposed deletion of note (8) which provides no useful information, has no effect on the types of accidents assumed to occur. No new accident scenarios, transient precursors, failure mechanisms, or limiting single failures are introduced as a result of this change. 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. Since there are no safety analysis limits associated with this trip function, the allowed value change does not reduce the margin of safety. 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. 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 "LS54" resulting from the conversion to the improved TS format satisfy the NSHC standards of 10 CFR 50.92(c); and accordingly, a NSHC finding is justified.

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.3.1.4	-----NOTE----- This Surveillance must be performed on the reactor trip bypass breaker, for the local manual shunt trip only, prior to placing the bypass breaker in service. ----- Perform TADOT.	3.3-124 31 days on a STAGGERED TEST BASIS
SR 3.3.1.5	Perform ACTUATION LOGIC TEST.	31 days on a STAGGERED TEST BASIS
SR 3.3.1.6	-----NOTE----- Not required to be performed until 72 24 hours after ~~achieving equilibrium conditions with~~ THERMAL POWER ~~is~~ ≥ ~~50~~ 75% RTP. ----- Calibrate excore channels to agree with incore detector measurements.	B 3.3-06 Q 3.3-06 92 EFPD B
SR 3.3.1.7	-----NOTE----- ~~1.~~ Not required to be performed for source range instrumentation prior to entering MODE 3 from MODE 2 until 4 hours after entry into MODE 3. e 2. For source range instrumentation, this Surveillance shall include verification that interlocks P-6 and P-10 are in their required state for existing unit conditions. ----- Perform COT. STET	B DC 3.3-004 ~~3.3-111~~ C 92 days B

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.6 (continued) INSERT SR 3.3.1.6 Q 3.3-97

A Note modifies SR 3.3.1.6. The Note states that this Surveillance is required only if reactor power is > ~~50~~ 75% RTP and that ~~[24]~~ 72 hours ~~after achieving equilibrium conditions with~~ thermal power is >75% RTP is allowed for performing the first surveillance ~~after reaching 50 75% RTP~~. retain strike out delete strike out Q 3.3-26

The Frequency of 92 ~~EFPD~~ is adequate. It is based on industry operating experience, considering instrument reliability and operating history data for instrument drift.

SR 3.3.1.7

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

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

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

Remove strike out DC ALL-005

~~The difference between the current "as found" values and the previous test "as left" values must be consistent with the drift allowance used in the setpoint methodology. The setpoint shall be left set consistent with the assumptions of the current unit specific setpoint methodology trip setpoint value.~~ STET DC ALL-002

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

SR 3.3.1.7 is modified by ~~two notes~~ a Note 1 ~~that~~ provides a 4 hour delay in the requirement to perform this Surveillance for source range instrumentation when entering MODE 3 from MODE 2. This Note allows a normal shutdown to proceed without a delay for testing in MODE 2 and for a short time in MODE 3 until the RTBs are open and SR 3.3.1.7 is no longer required to be performed. If the unit is to be in MODE 3 with the RTBs closed for > 4 hours this Surveillance must be performed prior to 4 hours after entry into MODE 3. ~~Note 2 requires that the quarterly COT for the source range instrumentation shall include verification by observation of the associated permissive annunciator window that the P-6 and P-10 interlocks are in their required state for the existing unit conditions.~~ STET STET DC 3.3-004 DC 3.3-004

The Frequency of ~~[92]~~ days is justified in Reference 7.

INSERT SR 3.3.1.7

Insert for DC 3.3-004

Enclosure 5B page B 3.3-57
Insert SR 3.3.1.7

If this surveillance or if SR 3.3.1.8 has been performed within the previous 92 days, the requirements of this surveillance are satisfied.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.8

STET STET

SR 3.3.1.8 is the performance of a COT as described in SR 3.3.1.7 ~~except~~ and it is modified by a ~~the same~~ Note that this test shall DC 3.3-DOC include verification that the P-6 and P-10 interlocks are in their required state for the existing unit conditions by observation of the associated permissive annunciator window. The Frequency is modified by a Note that allows this surveillance to be satisfied if it has been performed within 92 days of the Frequencies prior to reactor startup, 12 hours after reducing power below P-10, and four hours after reducing power below ~~P-10 and~~ P-6, as discussed below. The Frequency of "prior to startup" ensures this surveillance is performed prior to critical operations and applies to the source, intermediate and power range low instrument channels. The Frequency of ~~"4~~ "12 hours after reducing power below P-10" (applicable to intermediate and power range low channels) and "4 hours after reducing power below P-6" (applicable to source range channels) allows a normal shutdown to be completed and the unit removed from the MODE of Applicability for this surveillance without a delay to perform the testing required by this surveillance. The Frequency of every 92 days thereafter applies if the plant remains in the MODE of Applicability after the initial performances of prior to reactor startup, 12 hours after reducing power below P-10, and four hours after reducing power below ~~P-10 or~~ P-6. The MODE of Applicability for this surveillance is < P-10 for the power range low and intermediate range channels and < P-6 for the source range channels. Once the unit is in MODE 3, this surveillance is no longer required. If power is to be maintained < P-10 for more than 12 hours or < P-6 for more than 4 hours, then the testing required by this surveillance must be performed prior to the expiration of the 12 hour or 4 hour limit, as applicable. ~~Four hours is a reasonable time~~ These time limits are reasonable, based on operating experience, to complete the required testing or place the unit in a MODE where this surveillance is no longer required. This test ensures that the NIS source, intermediate, and power range low channels are OPERABLE prior to taking the reactor critical and after reducing power into the applicable MODE (< P-10 or < P-6) for the periods discussed above. ~~> 4 hours.~~

delete strikeout

SR 3.3.1.9

SR 3.3.1.9 is the performance of a TADOT and is performed every ~~[~~92~~]~~ days, as justified in Reference 7.

(continued)

~~Not Applicable to DCPP. See Conversion Comparison Table (Enclosure 6B)~~ DC 3.3-004

CHANGE NUMBER	JUSTIFICATION
3.3-109	~~Not used.~~ INSERT 3.3-109 Q 8-11
3.3-110	~~Not used.~~ INSERT 3.3-110 DCALL-005
3.3-111	STET This change adds a Note to ITS SR 3.3.1.7 for source range instrumentation to verify interlocks P-6 and P-10 are in their required state for existing unit conditions. This is consistent with the current TS and is an enhancement which is easily performed and provides additional assurance that the interlocks are functioning correctly. STET DC 3.3-004
3.3-112	~~Not used.~~ INSERT 3.3-112 Q 12-05(3.6)
3.3-113	~~Not used.~~ INSERT 3.3-113 Q 2-05(2.0)
3.3-114	~~Not used.~~ INSERT 3.3-114 Q 3.3-66
3.3-115	~~Not used.~~ N/A to DCPP. See Conversion Comparison Table (Encl. 6B) CP3.3-011
3.3-116	ACTION J of ITS 3.3.2 is not used since DCPP does not rely on motor-driven AFW pump start with loss of both main FW pumps. The function exists, but is not credited in any accident analysis and is not part of ESFAS Function 6 in the CTS.
3.3-117	This change to ITS 3.3.1 Condition R reflects current TS Table [3.3-1, ACTION Statement 12] which was based on NRC Generic Letter 85-09. NOTE 2 Q 3.3-43
3.3-118	This change is for consistency with ITS 3.7.10 Condition [G].
3.3-119	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).
3.3-120	~~ITS 3.3.1 Condition D is revised to reflect ITS SR 3.2.4.2 and CN 3.2-15 in the 3/4.2 package.~~ Not used. Q 3.3-120
3.3-121	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).
3.3-122	ITS 3.3.1 APPLICABILITY Note (b) for Functions 1, 5, 19-21 and Conditions C and K are revised to replace ACTIONS requiring the RTBs to be opened with ACTIONS that ensure subcriticality is maintained (i.e., by initiating action to fully insert~~ing~~ all rods and ensuring the Rod Control System is incapable of rod withdrawal) yet do not initiate a feedwater isolation (P-4 and low T_{avg}) in MODE 3, consistent with Traveler TSTF-135. TR 3.3-006
3.3-123	This change deletes ACTION L.2 and renumbers L.3 since the requirement to close the unborated water source valves is not in the CTS and is not part of the current licensing basis. This new requirement is not applicable to DCPP which has a licensed dilution accident evaluation (refer to License Amendment 28/27). The current licensing bases in accordance with NUREG 0800, Section 15.4.6 provides adequate assurance that a dilution event will be recognized and arrested in a timely fashion. DC 3.3-Ed
3.3-124	Consistent with the current TS Table 4.3-1, Note [15], the note for ITS SR 3.3.1.4 is modified, a note is added to Table 3.3.1-1, and Function 20 are modified to clarify that the SR is required for the reactor trip bypass breaker local manual shunt trip only. The Bases for SR 3.3.1.14 clearly state that SR 3.3.1.14 includes the automatic undervoltage trip of the reactor trip bypass breakers. The Note (k) added to Table 3.3.1-1, Function 20 clarifies the Applicability of the undervoltage and shunt trip mechanisms to include those functions of the reactor trip bypass breakers when in use.

TECHNICAL SPECIFICATION CHANGE		APPLICABILITY			
NUMBER	DESCRIPTION	DIABLO CANYON	COMANCHE PEAK	WOLF CREEK	CALLAWAY
3.3-103	Function 11 of ITS Table 3.3.1-1 is revised per the DCPP CTS to reflect the current plant design of only a two loop trip. With this revision Condition O is no longer used, since it was only applicable to the single loop trip.	Yes	No	No	No
3.3-104	CONDITION A of ITS 3.3.5 is revised to incorporate CTS ACTIONS 15 and 16. CONDITIONS B and C are not used.	Yes	No, see CN 3.3-131.	No, see CN 3.3-99.	No, see CN 3.3-99.
3.3-105	Function 4.d.(2) of ITS Table 3.3.2-1 and notes (c) and (h) are revised per the DCPP CTS.	Yes	No, see CN 3.3-12.	No, see CN 3.3-12.	No, see CN 3.3-12.
3.3-106	Delete ISTS Required Actions B.2.2 and U.2.2. These Required Actions are not needed due to exiting the APPLICABILITY via Required Actions B.2.1 and U.2.1.	Yes	Yes	Yes	Yes
3.3-107	Based upon operating experience to change Thermal Power in a controlled fassion without challenging the plant and consistent with the CTS which does not have a Completion Time for restoring one channel to OPERABLE ststus; but does pervent going above P-10 until it is restored, the Completion Time for ITS 3.3.1 Required Actions F.1 and F.2 should be increased to 24 hours.	Yes	Yes	Yes	Yes
3.3-108	~~Not used.~~ INSERT 3.3-108(a)	~~N/A~~ YES	~~N/A~~ No	~~N/A~~ No	~~N/A~~ No Q 2-01(20),
3.3-109	~~Not used~~ INSERT 3.3-109(a)	~~N/A~~ YES	~~N/A~~ NO	~~N/A~~ No	~~N/A~~ No Q 8-1
3.3-110	~~Not used~~ INSERT 3.3-110(a)	~~N/A~~ YES	~~N/A~~ No	~~N/A~~ No	~~N/A~~ No Q DC ALL 005
3.3-111	Add a Note to ITS SR 3.3.1.7 for source range instrumentation to verify interlocks P-6 and P-10 are in their required state for existing unit conditions. This is consistent with the CTS.	~~Yes~~ ~~No, Adopted ISTS.~~ YES	Yes	No-see CN 3.3-48.	Yes DC 3.3-004 No
3.3-112	~~Not used~~ INSERT 3.3-112(a)	~~N/A~~ YES	~~N/A~~ No	~~N/A~~ No	~~N/A~~ Q 12-05 (3.6)
3.3-113	~~Not used~~ INSERT 3.3-113(a)	~~N/A~~ YES	~~N/A~~ No	~~N/A~~ No	~~N/A~~ Q 2-05 (2.0)
3.3-114	~~Not used.~~ INSERT 3.3-114(a)	~~N/A~~ Yes	~~N/A~~ No	~~N/A~~ No	~~N/A~~ Q 3.3-66 No

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: DC 3.3-006 (new) **APPLICABILITY:** DC

REQUEST: Revise Table 3.3.1-1 and Table 3.3.2-1 to re-label the "Trip Setpoint" column as the "Nominal Trip Setpoint" column. Assign new Note "a" the Nominal Trip Setpoint column of Table 3.3.1-1 and Table 3.3.2-1. Place Note "a" at the bottom of each page. Note "a" reads:

> A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is re-adjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions.

This Note is consistent with the Westinghouse methodology for Trip Setpoints. JFD 3.3-147 has been added which reads:

> The Trip Setpoint column has been re-labeled to read "Nominal Trip Setpoint." Note "a" has been added to interpret the values provided. The Note reads; " A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is re-adjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions."

ATTACHED PAGES:

Encl. 5A	3.3-18, 3.3-20, 3.3-21, 3.3-22, 3.3-23, 3.3-24, 3.3-25, 3.3-26, 3.3-39, 3.3-40, 3.3-41, 3.3-42, 3.3-43, 3.3-44, 3.3-46, 3.3-47, 3.3-48, 3.3-49, 3.3-50, 3.3-51
Encl. 5B	B 3.3-4, B 3.3-67, B 3.3-68
Encl. 6A	10
Encl. 6B	21

Table 3.3.1-1 (page 1 of ~~8~~10)
Reactor Trip System Instrumentation

DC 3.3-006

3.3-147 ED

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	Nominal (a) TRIP SETPOINT~~(a)~~
1. Manual Reactor Trip	1.2	2	B	SR 3.3.1.14	NA	NA
	3(b). 4(b). 5(b)	2	C	SR 3.3.1.14	NA	NA
2. Power Range Neutron Flux						B-PS
a. High	1.2	4	D	SR 3.3.1.1 SR 3.3.1.2 SR 3.3.1.7 SR 3.3.1.11 ~~SR 3.3.1.16~~ SR 3.3.1.16	≤ ~~[111.2]~~ ~~111.1~~% RTP 110.2	~~≤~~ ~~109~~ 6% RTP DC ALL-005 B ~~3.3-55~~ 3.3-55
b. Low	1(c).2	4	E	~~SR 3.3.1.1~~ SR 3.3.1.8 SR 3.3.1.11 ~~SR 3.3.1.16~~ SR 3.3.1.16	≤ ~~[27.2]~~ ~~27.1~~% RTP 26.2	~~≤~~ 25% RTP DC ALL-005 B
3. Power Range Neutron Flux Rate						B-PS DC ALL-005
a. High Positive Rate	1.2	4	E	SR 3.3.1.7 SR 3.3.1.11	≤ ~~[6.8]~~ ~~6.8~~% RTP with time constant ≥ 2 sec 5.6	~~≤~~ 5% RTP with time constant ≥ 2 sec
b. High Negative Rate	1.2	4	E	SR 3.3.1.7 SR 3.3.1.11 ~~SR 3.3.1.16~~ SR 3.3.1.16	≤ ~~[6.8]~~ ~~6.5~~% RTP with time constant ≥ 2 sec 5.6	~~≤~~ 5% RTP with time constant ≥ 2 sec DC ALL-005 B
4. Intermediate Range Neutron Flux	1(c). 2(d)	2	F.G	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11	≤ ~~[31]~~ ~~30.9~~% RTP 30.6	~~≤~~ 25% RTP DC ALL-005 B-PS
	~~2(e)~~	~~2~~	~~H~~	~~SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11~~	~~≤ [31] % RTP~~	~~≤ 25% RTP~~ 3.3-95

DC 3.3-006

a. A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is re-adjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions.

3.3-147 ED

(b) With ~~Reactor Trip Breakers (RTBs) closed and~~ Rod Control System capable of rod withdrawal ~~or all~~ one or more rods not fully inserted.

3.3-122

TR 3.3-006

DC 3.3-006

Table 3.3.1-1 (page 2 of ~~8~~10)
Reactor Trip System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE (3.3-147)	NOMINAL TRIP SETPOINT ~~(a)~~ (a) ED
5. Source Range Neutron Flux	2(e)	2	I, J	SR 3.3.1.1 SR 3.3.1.8 SR 3.3.1.11 ~~SR 3.3.1.16~~	≤ 1.4 E5 cps	B ~~3.3-55~~ Q 3.3-55 ≤ 1.0 E5 cps
	$3^{(b)}$, $4^{(b)}$, $5^{(b)}$	2	J, K	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.11 ~~SR 3.3.1.16~~	≤ 1.4 E5 cps	≤ 1.0 E5 cps
	$3^{(f)}$, $4^{(f)}$, $5^{(f)}$	1	L	SR 3.3.1.1 SR 3.3.1.11	N/A	~~3.3-55~~ Q 3.3-55 N/A
6. Overtemperature ΔT	1, 2	4	E	SR 3.3.1.1 SR 3.3.1.3 SR 3.3.1.6 SR 3.3.1.7 SR 3.3.1.~~12~~ 10 ~~SR 3.3.1.16~~ SR 3.3.1.16	Refer to Note 1 (Page 3.3-2~~1~~4)	Refer to Note 1 (Page 3.3-2~~1~~4) 3.3-101
7. Overpower ΔT	1, 2	4	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.~~12~~ 10 ~~SR 3.3.1.16~~ SR 3.3.1.16	Refer to Note 2 (Page 3.3-2~~2~~5)	Refer to Note 2 (Page 3.3-22-5) 3.3-101

DC 3.3-006

(continued)

a. A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is re-adjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions. 3.3-147

~~(a) [illegible] Study methodology used by the unit.~~ ED

(b) With ~~RTBs closed and~~ Rod Control System capable of rod withdrawal or ~~all~~ one or more rods not fully inserted. TR 3.3-006 3.3-122

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

(f) With the RTBs open or all rods fully inserted and incapable of withdrawal. In this condition, source range Function does not provide reactor trip but does provide ~~[input to the Boron Dilution Protection System (LCO 3.3.9), and]~~ indication. 3.3-11 B-PS

Table 3.3.1-1 (page 3 of ~~8~~10)
Reactor Trip System Instrumentation

DC 3.3-006

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	3.3-147 ALLOWABLE VALUE	ED NOMINAL (a) TRIP SETPOINT ~~(a)~~
8. Pressurizer Pressure						B-PS DC ALL-005
a. Low	1(g)	4	M	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 ~~SR 3.3.1.16~~ SR 3.3.1.16	≥ ~~[1886]~~ ~~1944.4~~ psig 1947.5	~~[1900]~~ 1950 psig 2385 psig B
b. High	1,2	4	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 ~~SR 3.3.1.16~~ SR 3.3.1.16	≤ ~~[2396]~~ ~~2390.6~~ psig 2387.5	~~3.3-55~~ Q 3.3-55 DC ALL-005
9. Pressurizer Water Level – High	1(g)	3	M	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10	≤ ~~[93.8]~~ ~~92.5%~~ 90.2 89.8	~~92%~~ 90 B- DC ALL-005
10. Reactor Coolant Flow – Low	1(g)	3 per loop	M	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 ~~SR 3.3.1.16~~ SR 3.3.1.16	≥ 89.? %(l) of MMF/loop	~~[90]%(l)~~ ≥ [90]% Q 3.5-55 B- 3.3-09 3.3-42 Q 3.3d GEN
~~a. Single Loop~~	~~1(h)~~	~~3 per loop~~	~~M~~	~~SR 3.3.1.1~~ ~~SR 3.3.1.7~~ ~~SR 3.3.1.10~~ ~~SR 3.3.1.16~~	~~≥ [89.2] %~~	
~~b. Two Loops~~	~~1(i)~~	~~3 per loop~~	~~M~~	~~SR 3.3.1.1~~ ~~SR 3.3.1.7~~ ~~SR 3.3.1.10~~ ~~SR 3.3.1.16~~	~~≥ [89.2] %~~	~~≥ [90]%~~

DC 3.3-006

(continued)

a. A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is re-adjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions. ED 3.3-147

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

~~(h) Above the P-8 (Power Range Neutron Flux) interlock.~~ 3.3-42

~~(i) Above the P-7 (Low Power Reactor Trips Block) interlock and below the P-8 (Power Range Neutron Flux) interlock.~~ 3.3-42

(l) Minimum measured flow (MMF) is 89,800 gpm per loop for Unit 1 and 90,625 gpm per loop for Unit 2. DC 3.3-Ed 3.3-09

Table 3.3.1-1 (page 4 of ~~8~~10)
Reactor Trip System Instrumentation

DC 3.3-006 ED

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	3.3-147 ALLOWABLE VALUE	Nominal (a) TRIP SETPOINT ~~(a)~~
						3.3-103
11. Reactor Coolant Pump (RCP) Breaker Position	1(g)	1 per RCP	M	SR 3.3.1.14	NA	NA
~~a. Single Loop~~	~~1(h)~~	~~1 per RCP~~	~~O~~	~~SR 3.3.1.14~~	~~NA~~	~~NA~~
~~b. Two Loops~~	~~1(i)~~	~~1 per RCP~~	~~M~~	~~SR 3.3.1.14~~	~~NA~~	~~NA~~
					7877	B-PS DC ALL-005
12. Undervoltage RCPs	1(g)	~~[3]~~ 2 per bus	M	SR 3.3.1.9 SR 3.3.1.10 ~~SR 3.3.1.16~~ SR 3.3.1.16	≥ ~~[4760]~~ ~~7730~~ V-each bus	~~[4830]~~ 8050 V-each bus
					~~3.3-55~~ 3.3-55	B-PS B
13. Underfrequency RCPs	1(g)	3 per bus	M	SR 3.3.1.9 SR 3.3.1.10 ~~SR 3.3.1.16~~ SR 3.3.1.16	≥ ~~[57.1]~~ 53.9 Hz-each bus	~~[57.5]~~ 54.0 Hz-each bus
b. SG Water Level - Low low trip time delay (TTD)						B-PS
14. a Steam Generator (SG) Water Level - Low Low ~~a. Trip Time Delay (TTD) from~~	1,2	~~[4~~ 3 per SG~~]~~	E	SR 3.3.1.1 SR 3.3.1.7 SR 3.3.1.10 ~~SR 3.3.1.16~~ SR 3.3.1.16	≥ ~~[30.4]~~ ~~6.8%~~ 7.0	~~[32.3]~~ 7.2% DC ALL-005 3.3-46
~~Coincident With:~~					TTD	TTD 3.3.46
~~a) RCS Loop ΔT equivalent to power ≤ 50% RTP with a time delay (TD).~~	1,2	4 ~~(1/loop)~~	X	SR 3.3.1.7 SR 3.3.1.10	For RCS loopΔT variable input ≤ ~~51.5~~ 50.7% RTP ≤ ~~(1.01)~~ TD (Note 3)	For RCS loopΔT variable input ≤ 50% ≤ TD (Note 3)
~~OR~~					and for	and for
~~b) RCS Loop ΔT equivalent to power > 50% RTP with no time delay.~~	~~1~~	~~4(1/loop)~~	~~X~~	~~SR 3.3.1.7 SR 3.3.1.10~~	RCS loopΔT variable input > ~~51.5~~ 50.7% RTP TD=0	RCS loopΔT variable input > 50% RTP TD=0

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	DC 3.3-006 3.3-147 ALLOWABLE VALUE	ED NOMINAL (a) TRIP SETPOINT ~~(a)~~ 3.3-01
15. NOT USED ~~SG Water Level—Low~~	~~1,2~~	~~2 per SG~~	~~E~~	~~SR 3.3.1.1~~ ~~SR 3.3.1.7~~ ~~SR 3.3.1.10~~ ~~SR 3.3.1.16~~	~~≥ [30.4]%~~	~~≥ [32.3]%~~
~~Coincident with Steam Flow/ Feedwater Flow Mismatch~~	~~1,2~~	~~2 per SG~~	~~E~~	~~SR 3.3.1.1~~ ~~SR 3.3.1.7~~ ~~SR 3.3.1.10~~ ~~SR 3.3.1.16~~	~~≤ [42.5]% full steam flow at RTP~~	~~≤ [40]% full steam flow at RTP~~

DC 3.3-006

(continued)

a. A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is re-adjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip ~~int~~ Setpoint as necessary in response to plant conditions. ED 3.3-147

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

~~(h) Above the P-8 (Power Range Neutron Flux) interlock.~~ 3.3-103

~~(i) Above the P-7 (Low Power Reactor Trips Block) interlock and below the P-8 (Power Range Neutron Flux) interlock.~~ 3.3-103

Table 3.3.1-1 (page ~~5~~6 of ~~8~~10)
Reactor Trip System Instrumentation

DC 3.3-006

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE 3.3-147	NOMINAL (a) TRIP SETPOINT ~~(a)~~ ED
16. Turbine Trip					3.3-02	B-PS
a. Low ~~Fluid~~ Auto-Stop Oil Pressure	1(j)	3	~~P~~ O	SR 3.3.1.10 SR 3.3.1.15	≥ ~~[750]~~ ~~45~~ 46.5 psig DC 3.3-003	Q 3.3-02 ≥ ~~[800]~~ 50 psig ~~≥ 1% open~~ B
b. Turbine Stop Valve Closure	1(j)	4	P	SR 3.3.1.10 SR 3.3.1.15	≥ 1% open	
17. Safety Injection (SI) Input from Engineered Safety Feature Actuation System (ESFAS)	1,2	2 trains	Q	SR 3.3.1.14	NA	NA

DC 3.3-006

3.3-147

ED

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	Nominal (a) TRIP SETPOINT ~~(a)~~
18. Reactor Trip System Interlocks						B DC ALL-005
a. Intermediate Range Neutron Flux, P-6	2(e)	2	S	SR 3.3.1.11 SR 3.3.1.13	≥ 8 ~~6E-11~~ 11 amp	3 1E-10 amp 3.3-54
b. Low Power Reactor Trips Block, P-7	1	1 per train	T	~~NA~~ SR 3.3.1.5 ~~3.3.1.17~~ ~~SR 3.3.1.11~~ ~~SR 3.3.1.13~~	NA	Q 3.3-54 NA ~~3.3-44~~ B-PS
c. Power Range Neutron Flux, P-8	1	4	T	SR 3.3.1.11 SR 3.3.1.13	≤ ~~[50.2]~~ ~~37.2~~ 36.2% RTP Q 3.3-44	DC ALL-005 3 ~~[48]~~ 35% RTP ~~3.3-44~~ B-PS B
d. Power Range Neutron Flux, P-9	1	4	T	SR 3.3.1.11 SR 3.3.1.13	≤ ~~[52.2]~~ ~~52.2~~ 51.2% RTP	DC ALL-005 3 50% RTP B-PS B ~~3.3-44~~
e. Power Range Neutron Flux, P-10	1,2	4	S	SR 3.3.1.11 SR 3.3.1.13	≥ ~~[7.8]~~ ~~7.8~~ 8.8% RTP and ≤ ~~[12.2]~~ ~~12.2~~ 11.2% RTP	DC ALL-005 3 10% RTP B B-PS PS
f. Turbine Impulse Chamber Pressure, P-13	1	2	T	~~[SR 3.3.1.1]~~ SR 3.3.1.10 SR 3.3.1.13	≤ ~~[12.2]~~ ~~12.2~~ 10.2% RTP turbine ~~power~~ impulse pressure equivalent	DC ALL-005 3 10% RTP turbine ~~power~~ impulse pressure equivalent

Remove Strike Out

~~(a)~~ a. A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is re-adjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions. ED 3.3-147 DC 3.3-006

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

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

Table 3.3.1-1 (page ~~6~~8 of 8~~1~~0)
Reactor Trip System Instrumentation

DC 3.3-006

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	3.3-147 ALLOWABLE VALUE	E NOMINAL (a) TRIP SETPOINT ~~(a)~~
19. Reactor Trip Breakers(k) (RTBs)	1,2	2 trains	R	SR 3.3.1.4	NA	NA
	3(b), 4(b), 5(b)	2 trains	C	SR 3.3.1.4	NA	NA TR 3.3-006
20. Reactor Trip Breaker Undervoltage and Shunt Trip Mechanisms(k)	1,2	1 each per RTB	U	SR 3.3.1.4	NA	NA 3.3-124
	3(b), 4(b), 5(b)	1 each per RTB	C	SR 3.3.1.4	NA	NA
21. Automatic Trip Logic	1,2	2 trains	Q	SR 3.3.1.5	NA	NA
	3(b), 4(b), 5(b)	2 trains	C	SR 3.3.1.5	NA	NA 3.3-45
22. Seismic Trip	1,2	3 directions (x,y,z) in 3 locations	W	SR 3.3.1.12 SR 3.3.1.14 ~~SR 3.3.1.17~~ SR 3.3.1.5	≤ ~~0.40~~ 0.43 DC 3.3-006	≤ 0.35 DC ALL-005

a. A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is re-adjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions. 3.3-147 ED

~~(a) ... methodology used by the unit.~~

(b) With ~~RTBs closed and~~ Rod Control System capable of rod withdrawal or ~~all~~ one or more rods not fully inserted. TR 3.3-006 3.3-122

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

Table 3.3.2-1 (page 1 of ~~8~~11)
Engineered Safety Feature Actuation System Instrumentation

DC 3.3-006

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	3.3-147 ALLOWABLE VALUE	ED NOMINAL(a) TRIP SETPOINT~~(a)~~
1. Safety Injection						
a. Manual Initiation	1,2,3,4	2	B	SR 3.3.2.8	NA	NA
b. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA
c. Containment Pressure - High ~~1~~	1,2,3,4	3	~~D~~ E	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 ~~SR 3.3.2.10~~ SR 3.3.2.10	≤ ~~[3.86]~~ ~~3.3~~ psig 3.12	3.3-66 B-PS Q 3.3-66 DC ALL-005 ~~[3.6]~~ 3.0 psig
d. Pressurizer Pressure - Low	1,2,3(b)	~~[3]~~ 4	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 ~~SR 3.3.2.10~~ SR 3.3.2.10	≥ ~~[1839]~~ ~~1844.4~~ psig 1847.5	DC ALL-005 B B-PS 1850 psig ~~3.3-55~~ Q 3.3-55
e. Steam Line Pressure						
(1) Low	1,2,3(b)	3 per steam line	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 ~~SR 3.3.2.10~~ SR 3.3.2.10	≥ ~~[635]~~ ~~594.6~~(c) psig 597.6	~~[675]~~ 600(c) psig DC ALL-005 B-PS
(2) NOT USED ~~High Differential Pressure Between Steam Lines~~	~~1,2,3~~	~~3 per steam line~~	~~D~~	~~[SR 3.3.2.1]~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~≤ [106] psig~~	3.3-01 ~~≤ [97] psig~~
f. NOT USED ~~High Steam Flow in Two Steam Lines~~	~~1,2,3(d)~~	~~2 per steam line~~	~~D~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~(e)~~	3.3-01 ~~(f)~~
~~Coincident with T_{avg} - Low Low~~	~~1,2,3(d)~~	~~1 per loop~~	~~D~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~≥ [550.6]°F~~	~~≥ [553]°F~~

DC 3.3-006

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	3.3-147 ALLOWABLE VALUE DC 3.3-006	ED NOMINAL (a) TRIP SETPOINT ~~(a)~~

ued)

a. A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is re-adjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions. 3.3-147 — ED

(b) Above the P-11 (Pressurizer Pressure) interlock ~~. Trip function may be blocked in this MODE below the P-11 (pressurizer interlock) setpoint.~~ and below the P-11 interlock unless the function is blocked — Q 3.3-63 — 3.3-63

(c) Time constants used in the lead/lag ~~controller~~ compensation are $t_1 \geq$ 50 seconds and $t_2 \leq$ 5 seconds. — B — 3.3-105

~~(d) Above the P-12 (T_{avg} - Low Low) interlock.~~ — 3.3-01

~~(e) Less than or equal to a function defined as ΔP corresponding to [44]% full steam flow below [20]% load, and ΔP increasing linearly from [44]% full steam flow at [20]% load to [114]% full steam flow at [100]% load, and ΔP corresponding to [114]% full steam flow above 100% load.~~ — 3.3-01

~~(f) Less than or equal to a function defined as ΔP corresponding to [40]% full steam flow between [0]% and [20]% load and then a ΔP increasing linearly from [40]% steam flow at [20]% load to [110]% full steam flow at [100]% load.~~ — 3.3-01

Table 3.3.2-1 (page ~~2~~3 of 811)
Engineered Safety Feature Actuation System Instrumentation

DC 3.3-006

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE (3.3-147)	NOMINAL (a) TRIP SETPOINT ~~(a)~~ (ED)
~~1. Safety Injection (continued)~~						3.3-01
g. NOT USED ~~High Steam Flow in Two Steam Lines~~	~~1,2,3(d)~~	~~2 per steam line~~	~~D~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~(e)~~	~~(f)~~
~~Coincident with Steam Line Pressure—Low~~	~~1,2,3(d)~~	~~1 per steam line~~	~~D~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~≥ [635](c) psig~~	~~≥ [675] psig~~
2. Containment Spray						3.3-53
a. Manual Initiation	1,2,3,4	2 ~~per train with 2 trains coincident switches~~ (STET)	B	SR 3.3.2.8	NA	NA
b. Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA
				3.3-114		3.3-66 B-PS
c. Containment Pressure ~~High—3 (High High)~~	1,2,3,4	4	~~E~~ P (Q 3.3-66)	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 ~~SR 3.3.2.10~~ SR 3.3.2.10	≤ ~~[12.31]~~ ~~22.3~~ 22.12 psig	~~≤ [12.05]~~ 22 psig (DC ALL-005) ~~3.3-55~~ Q 3.3-55 3.3-01
NOT USED ~~High—3 (Two Loop Plants)~~	~~1,2,3~~	~~[3] sets of [2]~~	~~E~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~≤ [12.31] psig~~	~~≤ [12.05] psig~~

DC 3.3-006

(continued)

a. A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is re-adjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions. ED 3.3-147

~~(c) Time constants used in the lead/lag controller are $t_1 \geq$ seconds and $t_2 \leq$ seconds~~ B

~~(d) Above the P-12 (T_{avg}—Low-Low) interlock.~~

~~(e) Less than or equal to a function defined as ΔP corresponding to [44]% full steam flow below [20]% load, and ΔP increasing linearly from [44]% full steam flow at [20]% load to [114]% full steam flow at [100]% load, and ΔP corresponding to [114]% full steam flow above 100% load.~~ 3.3-01 3.3-01

~~(f) Less than or equal to a function defined as ΔP corresponding to [40]% full steam flow between [0]% and [20]% load and then a ΔP increasing linearly from [40]% steam flow at [20]% load to [110]% full steam flow at [100]% load.~~ 3.3-01

Table 3.3.2-1 (page ~~3~~4 of ~~8~~11)
Engineered Safety Feature Actuation System Instrumentation

DC 3.3-006

3.3-147

ED

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL (a) TRIP SETPOINT~~(a)~~
3. Containment Isolation						
a. Phase A Isolation						
(1) Manual Initiation	1,2,3,4	2	B	SR 3.3.2.8	NA	NA
(2) Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA
(3) Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
b. Phase B Isolation						3.3-53
(1) Manual Initiation	1,2,3,4	STET 2 ~~per train, with 2 trains coincident switches~~	B	SR 3.3.2.8	NA	NA
(2) Automatic Actuation Logic and Actuation Relays	1,2,3,4	2 trains	C	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA
(3) Containment Pressure				3.3-114 3.3-66	DC ALL-005 22.12	B-PS 3.3-66
~~High - 3~~ ~~(High High)~~	1,2,3,~~4~~	4	E P	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 ~~SR 3.3.2.10~~ SR 3.3.2.10	≤ ~~[12.31]~~ ~~22.3~~ psig	~~3.3-55~~ 3.3-55 ~~[12.05]~~ 22 psig
4. Steam Line Isolation						3.3-58 PS
a. Manual Initiation	$1, 2^{(1)}, 3^{(1)}$	2 ~~1/valve~~	~~F~~ N	SR 3.3.2.8	NA	NA

DC-3.3-006

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	3.3-147 ALLOWABLE VALUE	ED NOMINAL (a) TRIP SETPOINT ~~(a)~~
b.	Automatic Actuation Logic and Actuation Relays	1,2(i),3(i)	2 trains	G	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA

(continued)

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

(i) Except when all MSIVs are closed and de-activated. DC 3.3-006 B

a. A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is re-adjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions. 3.3-147

Table 3.3.2-1 (page 45 of 811)
Engineered Safety Feature Actuation System Instrumentation

DC 3.3-006

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE (3.3-147)	ED NOMINAL (a) TRIP SETPOINT ~~(a)~~
4. Steam Line Isolation (continued)						B-PS / B / 3.3-137
c. Containment Pressure - High 2 High	1,2$^{(i)}$, 3$^{(i)}$	4	~~DE~~	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 ~~SR 3.3.2.10~~ SR 3.3.2.10	≤ ~~[6.61]~~ ~~22.0~~ 22.12 psig	~~3.3-55~~ Q3.3-55 ≤ ~~[6.35]~~ 22.0 psig DC ALL-005
d. Steam Line Pressure						B-PS
(1) Low	1,2$^{(i)}$, 3$^{(b)(i)}$	3 per steam line	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 ~~SR 3.3.2.10~~ SR 3.3.2.10	≥ ~~[635]~~ ~~594.6~~ 597.2 $^{(c)}$ psig	≥ ~~[675]~~ 600$^{(c)}$ psig
(2) Negative Rate - High	3$^{(g)(i)}$	3 per steam line	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 ~~SR 3.3.2.10~~ SR 3.3.2.10	≤ ~~[121.6]~~ ~~105.4~~ 102.4 $^{(h)}$ psi/sec	≤ ~~[110]~~ 100$^{(h)}$ psi/sec DC ALL-005
e. NOT USED ~~High Steam Flow in Two Steam Lines~~	~~1,2$^{(i)}$, 3$^{(i)}$~~	~~2 per steam line~~	~~D~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~(e)~~	3.3-01 ~~(f)~~
~~Coincident with T_{avg} - Low Low~~	~~1,2$^{(i)}$, 3$^{(d)(i)}$~~	~~1 per loop~~	~~D~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~≥ [550.6]°F~~	~~≥ [553]°F~~

DC 3.3-006

(continued)

Q3.3-63

a. A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is re-adjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions. 3.3-147 ED

(b) Above the P-11 (Pressurizer Pressure) interlock, ~~Trip function may be blocked in this MODE below the P-11 (pressurizer interlock) setpoint.~~ the function is and below the P-11 interlock unless blocked Q 3.3-63 DC ALL-005 3.3-63

(c) Time constants used in the lead/lag ~~controller~~ compensator are $t_1 \geq 50$ seconds and $t_2 \leq 5$ seconds B 3.3-105

~~(d) Above the P-12 (T_{avg} - Low Low) interlock.~~ 3.3-01

~~(e) Less than or equal to a function defined as ΔP corresponding to [44]% full steam flow below [20]% load, ΔP increasing linearly from [44]% full steam flow at [20]% load to [114]% full steam flow at [100]% load, and ΔP corresponding to [114]% full steam flow above 100% load.~~ 3.3-01

~~(f) Less than or equal to a function defined as ΔP~~ 3.3-01

Table 3.3.2-1 (page ~~5~~6 of ~~8~~11)
Engineered Safety Feature Actuation System Instrumentation

DC 3.3-006

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	3.3-147 ALLOWABLE VALUE	ED NOMINAL (a) TRIP SETPOINT~~(a)~~
~~4. Steam Line Isolation (continued)~~						3.3-01
f. NOT USED ~~High Steam Flow in Two Steam Lines~~	~~1,2(i), 3(i)~~	~~2 per steam line~~	~~D~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~(e)~~	~~(f)~~
~~Coincident with Steam Line Pressure - Low~~	~~1,2,(i) 3(i)~~	~~1 per steam line~~	~~D~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~≥ [635](c) psig~~	~~≥ [675](c) psig~~
						3.3-01
g. NOT USED ~~High Steam Flow~~	~~1,2(i), 3(i)~~	~~2 per steam line~~	~~D~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~≤ [25]% of full steam flow at no load steam pressure~~	~~≤ [ ] full steam flow at no load steam pressure~~
~~Coincident with Safety Injection~~	~~Refer to Function 1 (Safety Injection) for all initiation functions and requirements.~~					
~~and~~						
~~Coincident with T_{avg} - Low Low~~	~~1,2(i), 3(d)(i)~~	~~[2] per loop~~	~~D~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~≥ [550.6]°F~~	~~≥ [553]°F~~
						3.3-01
h. NOT USED ~~High High Steam Flow~~	~~1,2(i), 3(i)~~	~~2 per steam line~~	~~D~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~≤ [130]% of full steam flow at full load steam pressure~~	~~≤ [ ] of full steam flow at full load steam pressure~~
~~Coincident with Safety Injection~~	~~Refer to Function 1 (Safety Injection) for all initiation functions and requirements.~~					

DC 3.3-006

a. A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is re-adjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions.

~~Setpoint study methodology used by the unit.~~

~~(d) Above the P-12 (T_{avg} - Low Low) interlock.~~

~~(i) Except when all MSIVs are closed and [\de-activated].~~

:inued)

3.3-147 ED

3.3-01

Table 3.3.2-1 (page ~~6~~7 of ~~8~~11)
Engineered Safety Feature Actuation System Instrumentation

DC 3.3-006

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE (3.3-147)	ED NOMINAL (a) TRIP SETPOINT ~~(a)~~
5. Turbine Trip and Feedwater Isolation						PS
a. Automatic Actuation Logic and Actuation Relays	1.2(j), ~~[3]~~ ~~(j)~~	2 trains	H ~~[G]~~	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA
						B B-PS
b. SG Water Level – High High (P-14)	1.2(j), ~~[3]~~ ~~(j)~~	3 per SG	J ~~[D]~~	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 ~~SR 3.3.2.10~~ SR 3.3.2.10	≤ ~~[84.2]~~ ~~75.3%~~ 75.2	Q 3.3-127 ~~[82.4]~~ ~~75%~~ DC ALL-005
c. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
6. Auxiliary Feedwater						DC ALL-001 3.3-58 ~~3.3-139~~
~~a. Manual~~	~~1.2.3~~	~~1 sw/pp~~	~~H~~	~~SR 3.3.2.8~~ (13)	~~NA~~	~~NA~~
~~a~~ b. Automatic Actuation Logic and Actuation Relays (Solid State Protection System)	1.2.3	2 trains	G	SR 3.3.2.2 SR 3.3.2.4 SR 3.3.2.6	NA	NA ~~3.3-55~~ Q 3.3-55
						3.3-01
c. NOT USED ~~b. Automatic Actuation Logic and Actuation Relays (Balance of Plant ESFAS)~~	~~1.2.3~~	~~2 trains~~	~~G~~	~~SR 3.3.2.3~~	~~NA~~	~~NA~~
						DC ALL-005 B-PS B 3.3-46
d.1 ~~c.~~ SG Water Level – Low Low	1.2.3 ~~(k)~~ e	3 per SG	D	SR 3.3.2.1 SR 3.3.2.5 SR 3.3.2.9 ~~SR 3.3.2.10~~ SR 3.3.2.10	≥ ~~[30.4]~~ ~~6.8%~~ 7.0	Q 3.3-46 ~~[32.2]~~ 7.2%

d.2) SG Water Level - low low trip Time Delay (TTD) (Q 3.3-46)

DC 3.3-006

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE (3.3-147)	NOMINAL (a) TRIP SETPOINT ~~(a)~~ (ED)
~~Coincident with:~~						3.3-46 Q3.3-46
~~1) RCS Loop ΔT Equivalent to Power ≤ 50% RTP~~ e	~~1,2~~ e	~~4(1/loop)~~	~~D~~	~~SR 3.3.2.5 SR 3.3.2.9~~ e	for RCS Loop ΔT Variable input ≤ ~~51.5~~ 50.7% RTP DC ALL-005	for RCS Loop ΔT variable input ≤ 50% RTP Q3.3-46
~~With a Time Delay (SD) from~~ Trip	1,2,3	4 ~~(1/loop)~~ o	M	SR 3.3.2.5 SR 3.3.2.9	TTD ≤ (1.01) TD (k)(l) e and for	TTD TD (k)(l) and for
~~OR~~ e						
~~2) RCS Loop ΔT Equivalent to Power > 50% RTP~~ e	~~1,2~~	~~4(1/loop)~~	~~D~~	~~SR 3.3.2.5 SR 3.3.2.9~~	RCS Loop ΔT variable input > ~~51.5~~ 50.7% RTP DC ALL-005	RCS Loop ΔT variable input > 50% RTP
~~With no time delay~~	~~1,2~~	~~4(1/loop)~~	~~M~~	~~SR 3.3.2.5 SR 3.3.2.9~~	TTD=0	TTD=0 Q 3.3-46

DC 3.3-006

(continued)

a. A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is re-adjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions. 3.3-147 EC

(j) Except when all MFIVs, MFRVs, and associated bypass valves are closed and de-activated or isolated by a closed manual valve. B

(k) For Mode 3, the Trip Time Delay associated with the Steam Generator Water Level-Low-Low channel must be less than or equal to 464.1 seconds. 3.3-46

(l) Steam Generator Water Level Low-Low ~~Trip~~ Time Delay 3.3-46

$TD = B1(P)^3 + B2(P)^2 + B3(P) + B4$

Where: P = RCS Loop ΔT Equivalent to Power (%RTP), P ≤ 50% RTP

TD = Time delay for Steam Generator Water Level Low-Low (in seconds)

B1 = -0.007128 sec/(RTP)³

B2 = +0.8099 sec/(RTP)²

B3 = -31.40 sec/(RTP)

B4 = +464.1 sec

Q 3.3-46

THE STEAM GENERATOR WATER LEVEL - LOW LOW TIME DELAY FUNCTION POWER ALLOWABLE VALUE SHALL NOT EXCEED THE FOLLOWING TRIP SETPOINT POWER BY MORE THAN 0.7% RTP.

move row

Table 3.3.2-1 (page ~~7~~9 of ~~8~~11)
Engineered Safety Feature Actuation System Instrumentation

DC 3.3-006

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE (3.3-147)	~~ED~~ NOMINAL (a) TRIP SETPOINT ~~(a)~~
6. Auxiliary Feedwater (continued)						
~~d~~e. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
~~e~~f. NOT USED ~~Loss of Offsite Power~~	~~1,2,3~~	~~[3] per bus~~	~~F~~	~~SR 3.3.2.7~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~≥ [2912] V with ≤ 0.8 sec time delay~~	3.3-01 ~~≥ [2975] V with ≤ 0.8 sec time delay~~
~~f~~g. Undervoltage Reactor Coolant Pump	1,~~2~~	~~[3]~~ 2 per bus	I	SR 3.3.2.~~7~~8 SR 3.3.2.9 ~~SR 3.3.2.10~~ SR 3.3.2.10	≥ ~~[69] %~~ ~~bus voltage~~ ① 7730 7877 volts	B-PS 3.3-127 ~~3.3-55~~ 3.3-55 ② ~~[70]% bus voltage~~ 8050 volts DC ALL-005 3.3-116
~~g~~h. NOT USED ~~Trip of all Main Feedwater Pumps~~	~~1,2~~	~~[2] per pump~~	~~J~~	~~SR 3.3.2.8~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~≥ [ ] psig~~	~~≥ [ ] psig~~
~~h~~i. NOT USED ~~Auxiliary Feedwater Pump Suction Transfer on Suction Pressure - Low~~	~~1,2,3~~	~~[2]~~	~~F~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.7~~ ~~SR 3.3.2.9~~	~~≥ [20.53] [psia]~~	3.3-01 ~~≥ [ ] [psia]~~
7. ~~Automatic Switchover to Containment Sump~~						3.3-01 DC ALL-002
~~a. Automatic Actuation Logic and Actuation Relays~~	~~1,2,3,4~~	~~2 trains~~	~~G~~	~~SR 3.3.2.2~~ ~~SR 3.3.2.4~~ ~~SR 3.3.2.6~~	~~NA~~	~~NA~~

DC 3.3-006

3.3-147 ED

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL (a) TRIP SETPOINT ~~(a)~~
~~b. Refueling Water Storage Tank (RWST) Level - Low Low~~	~~1,2,3,4~~	4	K	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~≥ [15]% and ≤ [ ]%~~	~~≥ [ ] and ≤ [ ]~~
~~Coincident with Safety Injection~~	~~Refer to Function 1 (Safety Injection) for all initiation functions and requirements.~~					
7. Residual Heat Removal Pump Trip on Refueling Water Storage Tank Level-low	1,2,3,4	3	K	SR 3.3.2.1 SR 3.3.2.9 SR 3.3.2.12	≤ 33.68% ≥ 31.49%	32.56%

(continued)

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

3.3-29

DC ALL-002

SR 3.3.2.5

Q 3.3-29

a. A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is re-adjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions.

3.3-147

DC 3.3-006

Table 3.3.2-1 (page ~~8~~11 of ~~8~~11)
Engineered Safety Feature Actuation System Instrumentation

DC 3.3-006

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	3.3-147 ALLOWABLE VALUE	ED NOMINAL (a) TRIP SETPOINT~~(a)~~
7. NOT USED~~Automatic Switchover to Containment Sump (continued)~~						3.3-01
~~c. RWST Level — Low Low~~	~~1,2,3,4~~	~~4~~	~~K~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~≥ [15]%~~	~~≥ [18]%~~
~~Coincident with Safety Injection~~	~~Refer to Function 1 (Safety Injection) for all initiation functions and requirements.~~					
~~and~~						
~~Coincident with Containment Sump Level — High~~	~~1,2,3,4~~	~~4~~	~~K~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~ ~~SR 3.3.2.10~~	~~≥ [30] in. above el. [703] ft~~	~~≥ [ ] in. above el. [ ]ft~~
8. ESFAS Interlocks						
a. Reactor Trip, P-4	1,2,3	1 per train, 2 trains	F	SR 3.3.2.11	NA	NA
		Remove Strike Out			Q 3.3-44	3.3-15 ~~3.3-44~~ B-PS
b. Pressurizer Pressure, P-11	1,2,3	[illegible]	L	~~SR 3.3.2.1~~ SR 3.3.2.5 SR 3.3.2.9	≤ ~~[1996]~~ ~~1920.6~~ psig 1917.5	DC ALL-005 (5) ~~[ ]~~ 1915 psig
						3.3-01
c. NOT USED ~~T_{avg} — Low Low, P-12~~	~~1,2,3~~	~~[1] per loop~~	~~L~~	~~SR 3.3.2.1~~ ~~SR 3.3.2.5~~ ~~SR 3.3.2.9~~	~~≥ [550.6]°F~~	~~≥ [553]°F~~

a. A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is re-adjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions. ~~oint~~ ED

DC 3.3-006 3.3-147

BASES

BACKGROUND

Signal Process Control and Protection System (continued)

prevent the protection function actuation. These requirements are described in IEEE-279-1971 (Ref. 4). The actual number of channels required for each unit parameter is specified in Reference 1.

Two logic channels are required to ensure no single random failure of a logic channel will disable the RTS. The logic channels are designed such that testing required while ~~the reactor is at power~~ may be accomplished without causing a trip. INSERT BASES (1) Insert

Q3.3.6-1 DC 3.3-005 DC3.3-ED

Trip Setpoints and Allowable Values

two sided tolerance CA 3.3-014

The Trip Setpoints are the nominal values at which the bistables are set. Any bistable is considered to be properly adjusted when the "as left" value is within the band for CHANNEL CALIBRATION ~~accuracy~~ tolerance ~~(i.e., ± rack calibration + comparator setting accuracy)~~. INSERT B 3.3.1 BKG (B) DC ALL-005

The Trip Setpoints used in the bistables are based on the analytical limits stated in Reference 1. The selection of these Trip Setpoints is such that adequate protection is provided when all sensor and processing time delays are taken into account. To allow for calibration tolerances, instrumentation uncertainties, instrument drift, and severe environment errors for those RTS channels that must function in harsh environments as defined by 10 CFR 50.49 (Ref. 5), the Trip Setpoints and Allowable Values specified in Table 3.3.1-1 in the accompanying LCO are conservatively adjusted with respect to the analytical limits. A detailed description of the methodology used to calculate the Trip Setpoints, including their explicit uncertainties, is provided in the ~~"RTS/ESFAS Setpoint Methodology~~ ~~Study"~~ WCAP-11082, Rev. 2, "Westinghouse Setpoint Methodology for Protection Systems Diablo Canyon Station - Eagel 21 Version," May 1993 (Ref. 6). The actual nominal Trip Setpoint entered into the bistable is more conservative than that specified by the Allowable Value to account for changes in random measurement errors detectable by a COT. One example of such a change in measurement error is drift during the surveillance interval. If the measured setpoint does not exceed the Allowable Value, the bistable is considered OPERABLE. Q3.3.G-1

INSERT B 3.3.1 BKG (D) DC ALL-005

(continued)

Insert for DC ALL-005

Enclosure 5B page B 3.3-4
Insert B 3.3.1 BKG (B)

The calibration tolerance, after conversion, should correspond to the rack comparator setting accuracy defined in the latest setpoint study.

Insert B 3.3.1 BKG (D)

Rack drift in excess of the Allowable Value exhibits the behavior that the rack has not met its allowance. Since there is a small statistical chance that this will happen, an infrequent excessive drift is expected. Rack or sensor drift in excess of the allowance that is more than occasional may be indicative of more serious problems and warrants further investigation. ~~During surveillance, the as-found value of the trip setpoint is compared to its allowable value and if the trip setpoint is found outside its allowable value, the trip setpoint is reset within its as-left tolerance. If the trip setpoint cannot be set within its as-left tolerance, the channel is declared inoperable.~~ In the event a channel's setpoint is found nonconservative with respect to the specified Trip Setpoint, but more conservative than the Allowable Value, the setpoint must be adjusted consistent with the Trip Setpoint value. When a channel's Trip Setpoint is nonconservative with respect to the Allowable Value, declare the channel inoperable and apply the applicable ACTION statement until the channel is returned to OPERABLE status with its Setpoint adjusted consistent with the Trip Setpoint value.

DC 3.3-006

BASES

BACKGROUND

Signal Processing Equipment (continued)

actuation. Again, a single failure will neither cause nor prevent the protection function actuation.

These requirements are described in IEEE-279-1971 (Ref. 4). The actual number of channels required for each unit parameter is specified in Reference 2.

The channels are designed such that testing required to be performed at power may be accomplished without causing an ESF actuation. INSERT B 3.3.2 BKG (1) DC ALL-002

Trip Setpoints and Allowable Values two-sided tolerance CA 3.3-014

The Trip Setpoints are the nominal values at which the bistables are set. Any bistable is considered to be properly adjusted when the "as left" value is within the band for ~~CHANNEL CALIBRATION~~ calibration accuracy. ~~INSERT 3.3.2 (A)~~

The Trip Setpoints used in the bistables are based on the analytical limits stated in Reference 2. The selection of these Trip Setpoints is such that adequate protection is provided when all sensor and processing time delays are taken into account. To allow for calibration tolerances, instrumentation uncertainties, instrument drift, and severe environment errors for those ESFAS channels that must function in harsh environments as defined by 10 CFR 50.49 (Ref. 5), the Trip Setpoints and Allowable Values specified in Table 3.3.2-1 in the accompanying LCO are conservatively adjusted with respect to the analytical limits. A detailed description of the methodology used to calculate the Trip Setpoints, including their explicit uncertainties, is provided in ~~the "RTS/ESFAS Setpoint Methodology Study"~~ ~~Study"~~ WCAP-11082, Rev. 2, "Westinghouse Setpoint Methodology for Protection Systems Diablo Canyon Station - Eagle 21 Version," May 1993(Ref. 6). The actual nominal Trip Setpoint entered into the bistable is more conservative than that specified by the Allowable Value to account for changes in random measurement errors detectable by a COT. One example of such a change in measurement error is drift during the surveillance interval. If the measured setpoint does not exceed the Allowable Value, the bistable is considered OPERABLE. INSERT B 3.3.2 BKG (H) INSERT B 3.3.2 BKG (F) DC ALL-005

Q2-06 (2.0)

DC 3.3-006

Insert strike out DC ALL-002

Setpoints in accordance with the Allowable Value ensure that the consequences of Design Basis Accidents (DBAs) will be acceptable, providing the unit is operated from within the LCOs at the onset of the DBA and the equipment functions as designed.

(continued)

Insert for Q 2-06 (2.0)

~~Enclosure 5B page B 3.3-67~~
~~Insert 3.3.2(A)~~

~~The Allowable values are considered to be the Limiting Safety System Settings (LSSS), as identified in 10 CFR 50.36, and have been selected to mitigate the consequences of accidents.~~

DC 3.3-006

BASES

BACKGROUND

Trip Setpoints and Allowable Values (continued)

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

The Trip Setpoints and Allowable Values listed in Table 3.3.2-1 are based on the methodology described in Reference 6, which incorporates all of the known uncertainties applicable for each channel. The magnitudes of these uncertainties are factored into the determination of each Trip Setpoint. All field sensors and signal processing equipment for these channels are assumed to ~~operate within the allowances~~ of these uncertainty magnitudes.

INSERT B 3.3.2 BKG (G)

DC ALL-005

Solid State Protection System

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

The SSPS performs the decision logic for most ESF equipment actuation; generates the electrical output signals that initiate the required actuation; and provides the status, permissive, and annunciator output signals to the main control room of the unit.

The bistable outputs from the signal processing equipment are sensed by the SSPS equipment and combined into logic matrices that represent combinations indicative of various

CA 3.3-014

INSERT CA 3.3-014(b)

(continued)

Insert for CA 3.3-014

Enclosure 5B page B 3.3-68
Insert 3.3-014 (b)

DC 3.3-006

~~The inequality sign only indicates conservative direction. The as-left value will be within a two-sided calibration tolerance band on either side of the nominal value.~~ In the event a channel's setpoint is found nonconservative with respect to the specified Trip Setpoint, but more conservative than the Allowable Value, the setpoint must be adjusted consistent with the Trip Setpoint value. When a channel's Trip Setpoint is nonconservative with respect to the Allowable Value, declare the channel inoperable and apply the applicable ACTION statement until the channel is returned to OPERABLE status with its Setpoint adjusted consistent with the Trip Setpoint value.

CHANGE NUMBER	JUSTIFICATION
3.3-125	ITS SR 3.3.1.11 is modified by a Note that requires verification that the time constants are adjusted to the prescribed values. The addition of this Note is consistent with SR 3.3.1.10 and is required because SR 3.3.1.11 is used for the Power Range Neutron Flux - High Positive Rate [and High Negative Rate] trip functions which have a time constant associated with their calibration.
3.3-126	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).
3.3-127	The MODE 2 applicability for the undervoltage RCP start of the steam-driven AFW pump is deleted and the surveillance Frequency is revised per the DCPP CTS. Thus, the Required Actions of ACTION I are revised to include entering MODE 2 for function 6.g and MODE 3 for function 5.b. ~~and~~ The required surveillance is changed from SR 3.3.2.7 to SR 3.3.2.8. This anticipatory start of the steam-driven AFW pump is not credited for MODE 2 operation, only the SG low level start signal is used for MODE 2 or 3.
3.3-128	This change revises ITS Table 3.3.4-1 to be consistent with CTS 3.3.3.5.
3.3-129	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).
3.3-130	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).
3.3-131	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).
3.3-132	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).
3.3-133	This change revises ITS LCO 3.3.5 and SR 3.3.5.3 to include the DG start sequence delay timers from CTS Table 3.3-4.
3.3-134	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).
3.3-135	A MODE change restriction has been added to ITS 3.3.1 Condition C per the matrix discussed in CN 1-02-LS-1 of the 3.0 package (see LS-1 NSHC in the CTS Section 3/4.0, ITS Section 3.0 package).
3.3-136	Not applicable to DCPP. See Conversion Comparision Table (Enclosure 6B).
3.3-137	The Condition for Function 4.c is changed from Condition D to E consistent with the CTS. Plant design requires this Function to be bypassed, not tripped if inoperable.

Since the trip is bypassed below P-7

Q 2-08

Q 3.3-127

for Function 6.g.

the previously NOT USED ACTION J is created to include entering

Insert 3.3-137

DC ALL-003

INSERT 6A table → 3.3-138 to 3.3-144

Q 3-LS GEN

3.3-145 Insert 6A-16b

WC 3.3-019

WC 3.3-023

3.3-146 - not applicable to DCPP. See Conversion Comparison table (Encl 6B)

DC 3.3-006

3.3-147 - INSERT

Insert for DC 3.3-006

Encl. 6A 10
Insert for JFD 3.3-147

The Trip Setpoint column for Table 3.3.1-1 and Table 3.3.2-1 have been re-labeled to read "Nominal Trip Setpoint." Note "a" has been added to interpret the values provided. The Note reads; " A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is re-adjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions.

TECHNICAL SPECIFICATION CHANGE		APPLICABILITY			
NUMBER	DESCRIPTION	DIABLO CANYON	COMANCHE PEAK	WOLF CREEK	CALLAWAY
3.3-131	ITS 3.3.5 Condition B is replaced with new Conditions B, C, D, and E. Condition C in the ISTS is changed to Condition F. The CPSES CTS have specific actions for the various bus undervoltage and degraded voltage function. These actions allow an appropriate amount of time to restore an inoperable channel or declare the associated power source or bus inoperable and take action to isolate an inoperable power source. These actions are a proper way to respond to the inoperable channels because the actions result in taking the Required Actions in ITS 3.8 associated with the affected power source or bus. The new Conditions match the Actions of the CTS.	No	Yes	No	No
3.3-132	The trip setpoints for the loss of power diesel generator start instrumentation are relocated to a licensee controlled document. This approach is consistent with a format allowed by a reviewer's note for the RTS and ESFAS instrumentation.	No -adopted ITS format.	Yes	No, adopted ITS format.	No, adopted ITS format.
3.3-133	This change revises ITS ~~LCO 3.3.5 and~~ SR 3.3.5.3 to include the DG start sequence delay timers from DCPP CTS Table 3.3-4.	Yes	No	No	No
3.3-134	This change is Wolf Creek specific to revise the NOTE in Condition K of ITS 3.3.2 consistent with CTS Table 3.3-3 Action 18 30 for Function 7b ~~and Amendment 43 to provide 4 hours for an additional channel to be placed in bypass for surveillance testing of other channels.~~	No	No	Yes	No WC 3.3-018
3.3-135	A MODE change restriction has been added per the matrix discussed in CN 1-02-LS-1 of the ITS 3.0 package.	Yes	Yes	Yes	Yes
3.3-136	The TADOT perfromed under ITS SR 3.3.2.7 includes verification of relay setpoints since the trip actuating devices being tested are the same circuits tested under ITS SR 3.3.5.2.	No, adopted ISTS format.	No, adopted ISTS format.	Yes	Yes
3.3-137	The Condition for Function 4.c is changed from Condition D to E consistent with the DCPP CTS.	Yes	No	No	No DC ALL-003

INSERT GB Table

3.3-147. — INSERT DC 3.3-006 Q 3-LS GEN

Insert for DC 3.3-006

Encl. 6B 21
Insert for JFD 3.3-147

The Trip Setpoint column of Table 3.3.1-1 and Table 3.3.2-1 have been re-labeled to read "Nominal Trip Setpoint." Note "a" has been added to interpret the values provided.

Applicability:

DC	YES
CP	NO
WC	NO
CA	NO

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: DC 3.3-007 (new) **APPLICABILITY:** DC

REQUEST: Revise LCO 3.3.2, Required Actions N to clearly spell out the Action to be taken with one Channel of Manual Steam line Isolation or Manual AFW Pump Start Instrumentation is inoperable. Action N 2.2 is deleted since it logically follows from Action N.2 and is unnecessary.

ATTACHED PAGES:

Encl. 5A	3.3-35
Encl. 5B	B 3.3-122

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
N. One channel inoperable.	N.1 Restore channel to OPERABLE status.	48 hours 3.3-58
	OR	
	N.2.1 Declare THE associated AFW pump or ~~valve~~ MSIV inoperable.	Immediately DC 3.3-007
	~~AND~~	
	~~N.2.2 Comply with REQUIRED ACTION of 3.7.5 or 3.7.2 as applicable.~~	~~Immediately~~

INSERT 5A-O&P

Q 3.3-66

3.3-114

BASES

ACTIONS

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

LCO 3.0.3 to initiate shutdown actions in the event of a complete loss of ESFAS function. If the interlock is not in the required state (or placed in the required state) for the existing unit condition, the unit must be placed in MODE 3 within the next 6 hours and MODE 4 within the following 6 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. Placing the unit in MODE 4 removes all requirements for OPERABILITY of these interlocks.

~~M.1 or M.2~~ ← INSERT ACTION M. BASES Q 3.3-46

~~Condition M applies to the Trip Time Delay (TTD) for the SG low-low water level actuation of AFW pumps. With one or more TTD circuitry delay timers inoperable, 6 hours are allowed to adjust the threshold power level for no time delay to 0% RTP or to place the affected SG water level low-low channel in trip. The specified Completion Time is reasonable considering the nature of these Functions, the available redundancy, and the low probability of an event occurring during this interval. If the TTD threshold power level cannot be adjusted or the affected SG water level low-low channel cannot be placed in trip, the unit must be placed in MODE 3 within the next 6 hours and MODE 4 within the following 6 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power in an orderly manner and without challenging unit systems. In MODE 4, the unit does not have any analyzed transients or conditions that require the explicit use of the protection function noted above.~~ e

N.1 or N.2 ~~and N.2.2~~ DC 3.3-007

Condition N applies to:

- Manual Initiation of Steam Line Isolation; and
- Manual Initiation of Auxiliary Feedwater.

If a channel is inoperable, 48 hours is allowed to return the channel to an OPERABLE status. The specified Completion Time is reasonable considering the nature of these functions, the available redundancy, and the low probability of an event occurring during this interval. If the Function cannot be returned to OPERABLE status, the associated pump or valve shall be declared inoperable immediately and the REQUIRED ACTION of 3.7.5 or 3.7.2 as applicable complied with immediately.

INSERT SB-O&P Q 3.3-66

(continued)

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: DC 3.3-008 (new) **APPLICABILITY:** DC

REQUEST: Revise the LCO 3.3.6, Condition B and C description to delete Conditions for manual actuation inoperable. There is no manual function for the DCPP design for Containment Purge Isolation. Manual isolation is part of the controls for Containment Isolation (SI or Containment Spray).

ATTACHED PAGES:

Encl. 5A 3.3-65, 3.3-66

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. ---------NOTE----------- Only applicable in MODE 1, 2, 3, or 4. ----------------------- One or more ~~Functions with one or more manual or~~ automatic actuation trains inoperable. DC 3.3-008 OR ~~Two or more~~ Both radiation monitoring channels inoperable. OR Required Action and associated Completion Time of Condition A not met.	B.1 Enter applicable Conditions and Required Actions of LCO 3.6.3, "Containment Isolation Valves," for containment ~~purge and exhaust~~ ventilation isolation valves made inoperable by isolation instrumentation.	Immediately PS DC 3.3 Ed 3.3-32

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. STET ----------NOTE---------- Only applicable during MODE 6 ~~CORE ALTERATIONS~~ or movement of irradiated fuel assemblies within containment. ------------------------------- REQUIRED ~~One or more Functions with one or more manual or~~ automatic actuation trains 6 inoperable. OR ~~Two or more Both~~ radiation monitoring channels 6 inoperable. ~~OR~~ ~~Required Action and associated Completion Time for Condition A not met.~~	C.1 Place and maintain containment Ventilation ~~purge and exhaust~~ valves in closed position. OR C.2 Enter applicable Conditions and Required Actions of LCO 3.9.4, "Containment Penetrations," for containment ~~purge and exhaust~~ Ventilation isolation valves made inoperable by isolation instrumentation.	Immediately PS DC-3.3-Ed 3.3-79 Q 3.3-79 Immediately PS DC 3.3 Ed 3.3-32

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: DC 3.3-009 (new) **APPLICABILITY:** DC

REQUEST: Revise ITS SR 3.3.5.3 to identify the setpoint values as being allowable values and not nominal values.

ATTACHED PAGES:

Encl. 5A	3.3-63
Encl. 5B	B 3.3-157

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.5.3	ALLOWABLE VALUE Perform CHANNEL CALIBRATION with ~~[Setpoint Allowable Value]~~ ~~Trip~~ Setpoint ~~and Allowable Value~~ as follows: 6 5 a. Loss of voltage Diesel Start ~~Trip Setpoint and~~ Allowable Value ≥ ~~[2912]~~ 0 V with a time delay of ≤ ~~[0.8] ± [ ]~~ second and ≥ 2583 V with a ≤ 10 second time delay. ~~Loss of voltage Trip Setpoint ≥ [2975] V with a time delay of [0.8] ± [ ] second.~~ Loss of voltage initiation of load shed with one relay ~~Trip Setpoint and~~ Allowable Value ≥ 0 V with a time delay of ≤ 4 seconds and ≥ 2583 V with a time delay ≤ 25 seconds and with one relay ≥ 2870, instantaneous. b. Degraded voltage Diesel Start ~~Trip Setpoint and~~ Allowable Value ≥ ~~[3683]~~ 3785 V with a time delay of ~~[20] ± [ ]~~ ≤ 10 seconds. ~~Degraded voltage Trip Setpoint ≥ [3746] V with a time delay of [20] ± [ ] seconds.~~ Degraded voltage initiation of Load Shed ~~Trip Setpoint and~~ Allowable Value ≥ 3785 V with a time delay of ≤ 20 seconds.	~~18~~ 24 months DC ALL-004 B-PS 3.3-133 B-PS 3.3-133

B

BASES

~~Trip Setpoints and~~ Allowable Value~~s~~ SETPOINTS

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

The actual nominal Trip Setpoint entered into the relays is SET BY PROCEDURE TO BE normally still more conservative than that required by the Allowable Value. UNDER VOLTAGE ~~If the measured setpoint does not exceed the Allowable Value, the relay is considered OPERABLE.~~ IF THE MEASURED TIME DELAY DOES NOT EXCEED THE ALLOWABLE VALUE, THE TIMER IS CONSIDERED OPERABLE. Setpoints adjusted in accordance with the Allowable Value ensure that the consequences of accidents will be acceptable, providing the unit is operated from within the LCOs at the onset of the accident and that the equipment functions as designed. DC All-002

Allowable Values ~~and/or Trip Setpoints~~ are specified for each Function in the LCO. ~~Nominal Trip Setpoints are also specified in the unit specific setpoint calculations.~~ The nominal setpoints are selected to ensure that the setpoint measured by the ~~surveillance procedure~~ does not exceed the Allowable Value if the UNDER VOLTAGE relay is performing as required. If the measured setpoint does not exceed the Allowable Value, the UNDERVOLTAGE relay is considered OPERABLE. Operation with a Trip Setpoint less conservative than the nominal Trip Setpoint, but within the Allowable Value, is acceptable provided that operation and testing is consistent with the assumptions of the unit specific setpoint calculation. Each Allowable Value ~~and/or Trip Setpoint~~ specified is more conservative than the analytical limit assumed in the transient and accident analyses in order to account for instrument uncertainties appropriate to the trip function. These uncertainties are defined ~~in the "Unit Specific RTS/ESFAS Setpoint Methodology Study"~~ WCAP-11082, Rev. 2 "Westinghouse Setpoint Methodology for Protection Systems Diablo Canyon Stations Eagle 21 Version 2" (Ref. 3). STET DC All-00 DC All-002

APPLICABLE SAFETY ANALYSES

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

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

(continued)

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: DC 3.3-ED **APPLICABILITY:** DC

REQUEST:

Various changes have been identified that do not impact the technical content of the submittal or other FLOG members. Changes are noted with DC 3.3-Ed in the margin and noted below:

1) JFD 3.3-11 is revised to be consistent with Note (f) of Table 3.3.1-1.
2) SR 3.3.1.7 is revised per response to Q 3.3-111.
3) Revise Bases SR 3.3.1.5 to SR 3.3.1.17 on page B 3.3-63.
4) Function 14 on Table 3.3.1-1 is corrected.
5) The Containment Purge and Exhaust Isolation has been revised to Containment Ventilation Exhaust Isolation.
6) Inserted "Monitor" in function 2.c. of CTS Table 4.3-3.
7) The word "emergency" is inserted into the BACKGROUD of 3.3.7 to be consistent with revisions to the Bases for 3.7.10. This allows distinction from the normal operating mode and the three emergency operating modes. Pressurization is the only automatically actuated mode.
8) Corrects the Functional unit reference of DOC 02-08 by deleting 6.d. Enclosure 1 for CTS 3.3.1, Table 3.3.2, DOC 01-35-LG, is revised to state that the table has been moved to the FSAR not the Bases.
9) The DC ALL-002 insert for ACTION 36 was revised from the "97-09 Errata" submittal to refer to the "Required Channels" not "Total Number of Channels", and "Hot Standby" and "Cold Shutdown" were capitalized.
10) Revise JFD 3.3-31 to delete FSAR in the first sentence and substitute CTS.
11) The discussion of preplanned alternate monitoring for RVLIS is deleted from NSHC LS17, since this is not part of the DCPP CTS for PAMS.
12) Enclosure 3B for 02-19-LG is revised to include all of the functions and tables where the DOC is applied.
13) Strike out was completed in SR 3.3.1.12.
14) The DCPP submittal for NSHC LS8 incorrectly referred to FUNCTIONAL UNIT 14, which for DCPP is a previously deleted FUNCTIONAL UNIT and instead should have referred to FUNCTIONAL UNIT 16. LS8 has been corrected.
15) The bracketed information in the second to last sentence is deleted from NSHC LS17 since it is not applicable to DCPP.
16) Inserted "(MMF)" into note (l) to define the MMF used in Function 10.
17) DOC is added as being applicable to CTS ACTION 15.
18) The frequency of STAGGERED TEST BASIS should be 31 days not 62 per the new STAGGERED TEST BASIS DEFINITION from Section 1.0.

19) DOC 1-01-A is revised to include an application not originally in the DOC.
20) DOC 3-06-A is revised to include an application not originally in the DOC.
21) JFD 3.3-22 Enclosure 3A is revised to delete reference to the RCP Breaker indication, which is not part of the DCPP Remote Shutdown indication requirements.
22) Function 2.b is revised to state that the actuation is via control switches not push buttons.
23) The DOC applicability for CTS Table 4.3-2 Functional Unit 9, is revised from 01-29-M to 02-29-M.
24) The explanation of the required action times for ACTION K in the 3.3.2 Bases is revised to be consistent with the ITS format.
25) Other minor editorial changes, such as typographical, punctuation, spelling, etc. may not be specifically identified by page, but are included in the markup and will be included in the ITS and Bases clean copy.

REQUEST (Supplement): Under item 5, above the title of LCO 3.3.6 is revised to be consistent with LCO 3.6.3 as "Containment Ventilation Isolation" where this system closes the Containment Purge Supply and Exhaust valves and the Containment Vacuum/Pressure Relief valve.

ATTACHED PAGES:

Encl. 5A	3.3-64, 3.3-65, 3.3-66, 3.3-67, 3.3-68
Encl. 5B	B 3.3-163, B 3.3-164, B 3.3-165, B 3.3-166, B 3.3-167, B 3.3-168, B 3.3-169, B 3.3-170, B 3.3-171

PS

DC 3.3 Ed

3.3 INSTRUMENTATION

3.3.6 Containment ~~Purge and Exhaust~~ Ventilation Isolation Instrumentation

LCO 3.3.6 The Containment ~~Purge and Exhaust~~ Isolation instrumentation for each Function in Table 3.3.6-1 shall be OPERABLE.

APPLICABILITY: ~~MODES 1, 2, 3, and 4,~~ According to Table 3.3.6-1 **3.3-79**
~~During CORE ALTERATIONS,~~
~~During movement of irradiated fuel assemblies within containment.~~

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. --------NOTE-------- Only applicable in MODES 1, 2, 3, or 4. ---------------------- One radiation monitoring channel inoperable.	A.1 Restore the affected channel to OPERABLE status.	**3.3-32** 4 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. ---------NOTE---------- Only applicable in MODE 1, 2, 3, or 4. ---------------------- One or more ~~Functions with one or more manual or~~ automatic actuation trains inoperable. DC 3.3-008 OR ~~Two or more~~ Both radiation monitoring channels inoperable. OR Required Action and associated Completion Time of Condition A not met.	B.1 Enter applicable Conditions and Required Actions of LCO 3.6.3, "Containment Isolation Valves," for containment ~~purge and exhaust~~ ~~ventilation~~ isolation valves made inoperable by isolation instrumentation.	Immediately PS DC 3.3 Ed 3.3-32

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. STET ----------NOTE---------- Only applicable during ~~CORE ALTERATIONS~~ MODE 6 or movement of irradiated fuel assemblies within containment. ------------------------------ REQUIRED ~~One or more Functions with one or more manual or~~ automatic actuation train~~s~~ e inoperable. OR ~~Two or more Both~~ radiation monitoring channel~~s~~ b inoperable. ~~OR~~ ~~Required Action and associated Completion Time for Condition A not met.~~	C.1 Place and maintain containment ~~purge and exhaust~~ Ventilation valves in closed position. OR C.2 Enter applicable Conditions and Required Actions of LCO 3.9.4, "Containment Penetrations," for containment ~~purge and exhaust~~ Ventilation isolation valves made inoperable by isolation instrumentation.	Immediately PS DC.3.3.Ed 3.3-79 Q 3.3-79 Immediately PS DC 3.3 Ed 3.3-32

PS
DC 3.3 Ed
~~3.3-55~~
Q 3.3-55

SURVEILLANCE REQUIREMENTS

~~other than ESFAS SVI RESPONSE TIME verification,~~

Ventilation PS
DC 3.3 Ed

---NOTE---
Refer to Table 3.3.6-1 to determine which SRs apply for each Containment ~~Purge and Exhaust~~ Ventilation Isolation Function.

STET

~~ESFAS SVI RESPONSE TIME verification is specified in SR 3.3.6.8.~~

Q 3.3-55

	SURVEILLANCE	FREQUENCY
SR 3.3.6.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.6.2	Perform ACTUATION LOGIC TEST.	31 days on a STAGGERED TEST BASIS
SR 3.3.6.3	Perform MASTER RELAY TEST.	31 days on a STAGGERED TEST BASIS
SR 3.3.6.4	Perform ~~COT~~ CFT.	3.3-75 92 days
SR 3.3.6.5	Perform SLAVE RELAY TEST.	B-PS ~~[92] days~~ ~~18~~ 24 months DC ALL-005
SR 3.3.6.6	NOT USED ~~NOTE~~ ~~Verification of setpoint is not required.~~ ~~Perform TADOT.~~	3.3-76 ~~[18] months~~
SR 3.3.6.7	Perform CHANNEL CALIBRATION.	DC-ALL-005 ~~18~~ 24 months DC 3.3-Ed B PS
SR 3.3.6.8	Verify ESF Containment ~~Purge and Exhaust~~ Ventilation Isolation ~~response time is~~ RESPONSE TIME IS within limits ~~as specified in the FSAR update~~	DC ALL-005 ~~18~~ 24 months on a STAGGERED TEST BASIS 3.3-31 ~~3.3-55~~ Q 3.3-55

PS

DC 3.3-Ed

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

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS	TRIP SETPOINT	3.3-79
				Remove Strike Out	
1. ~~NOT USED~~ ~~Manual Initiation~~ STET Remove Strike Out	~~INSERT 3.3-77~~	2	~~SR 3.3.6.6~~	NA	3.3-77 Q 3.3-77
2. Automatic Actuation Logic and Actuation Relays	1, 2, 3, 4, ~~6, and~~ (a) and (b)	2 trains 1	SR 3.3.6.2 SR 3.3.6.3 SR 3.3.6.5	NA	3.3-32 Q 3.3-32 PS Q 3.3-79
~~Ventilation Exhaust~~ PURGE					
3. Containment Radiation	1, 2, 3, 4, ~~6, and~~ (a) AND (b)				
INSERT Q 3.3-79 a. Gaseous ~~A/B~~ /Particulate	~~1, 2, 3, 4~~ (a)	~~[1]~~ 2 1(b)	SR 3.3.6.1 SR 3.3.6.4 ~~SR 3.3.6.7~~ ~~SR 3.3.6.8~~ SR 3.3.6.8	~~≤ [2 x background]~~ Per ODCM	3.3-32 ~~3.3-31~~ Q 3.3-55 Remove Strike
~~b. Particulate~~		~~[1]~~	~~SR 3.3.6.1~~ ~~SR 3.3.6.4~~ ~~SR 3.3.6.7~~	~~≤ [2 x background]~~	3.3-32
~~c. Iodine~~		~~[1]~~	~~SR 3.3.6.1~~ ~~SR 3.3.6.4~~ ~~SR 3.3.6.7~~	~~≤ [2 x background]~~	3.3-32
~~d. Area Radiation~~		~~[1]~~	~~SR 3.3.6.1~~ ~~SR 3.3.6.4~~ ~~SR 3.3.6.7~~	~~≤ [2 x background]~~	3.3-32
4. Containment Isolation – SI ~~Phase A~~	Refer to LCO 3.3.2, "ESFAS Instrumentation," Function ~~3.a.~~ 1 AND 3 for all initiation functions and requirements.				Q 3.3-77 Q 3.3-79

(a) during CORE ALTERATIONS ~~and~~ during movement of irradiated fuel assemblies within containment. 3.3-~~31~~ 79

~~(b) Only one monitor is required to be OPERABLE in MODE 6 or during movement of irradiated fuel assemblies within containment.~~ Q 3.3-31 3.3-~~32~~ 79

(b)

Q 3.3-32

PURGE SUPPLY AND EXHAUST

B 3.3 INSTRUMENTATION

DC 3.3-Ed

B 3.3.6 Containment ~~Purge and Exhaust~~ Ventilation Isolation Instrumentation

AND THE VACUUM/PRESSURE RELIEF VALVE

BASES

DC 3.3-Ed

BACKGROUND

Containment ~~purge and exhaust~~ ventilation isolation instrumentation closes the containment ~~ventilation isolation~~ valves ~~in the Mini Purge System and the Shutdown Purge System~~. This action in conjunction with a Phase A signal isolates the containment atmosphere from the environment to minimize releases of radioactivity in the event of an accident. The ~~Mini~~ Purge or Vacuum/Pressure Relief System may be in use during reactor operation ~~and the Shutdown Purge System will be in use with the~~ or reactor shutdown.

DC 3.3-Ed

Containment ~~purge and exhaust~~ ventilation isolation initiates on a automatic safety injection (SI) signal through the Containment Isolation-Phase A Function, or by manual actuation of Phase A Isolation. The Bases for LCO 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation," discuss these modes of initiation.

(RM 44A AND 44B) Q 3.3-79

~~Four~~ Two radiation monitoring channels are also provided as input to the containment ~~purge and exhaust~~ ventilation isolation. The ~~four~~ two channels measure containment radiation ~~at two locations. One channel is a containment area gamma monitor, and the other three measure radiation in a sample of the containment purge exhaust. The three purge exhaust radiation detectors are of three different types: gaseous, particulate, and iodine monitors. All four~~ in the exhaust duct for fan E-3. Both detectors will respond to ~~most~~ events that release radiation to containment. Both monitors are gaseous activity monitors that will respond to noble gases, particulate and Iodine. The high alarm setpoint is based upon the design basis fuel handling accident source term which does not have a particulate componenet. The actual high alarm setpoint is more than a factor of 500 below the design calculation earliest actuation point. Since the monitors can only be adjusted to one high alarm setpoint and no particulate is expected during a fuel handling accident, a setpoint based on site boundry noble gases is conservative. ~~However, analyses have not been conducted to demonstrate that all credible events will be detected by more than one monitor. Therefore,~~ For the purposes of this LCO the ~~four~~ channels are ~~not considered~~ redundant. ~~Instead, they are treated as four one-out-of-one Functions. Since the purge exhaust monitors constitute a sampling system, various components such as sample line valves, sample line heaters, sample pumps, and filter motors are required to support monitor OPERABILITY.~~ DC 3.3 E-

~~Each of the purge systems has inner and outer containment isolation valves in its supply and exhaust ducts.~~ A high radiation signal from ~~any one~~ either of the ~~four~~ two channels initiates containment

(continued)

BASES

BACKGROUND (continued)

~~purge~~ ventilation isolation, which closes ~~both inner and outer~~ the containment ventilation isolation valves ~~in the Mini Purge System and the Shutdown Purge System~~. These systems are described in the Bases for LCO 3.6.3, "Containment Isolation Valves." DC ALL-002

APPLICABLE SAFETY ANALYSES

The safety analyses assume that the containment remains intact with penetrations unnecessary for core cooling isolated early in the event, within approximately 60 seconds. The isolation of the ~~purge~~ containment ventilation valves has not been analyzed mechanistically in the dose calculations, although its ~~rapid~~ isolation using a conservative isolation time is assumed following a LOCA. The containment ~~purge and exhaust~~ ventilation isolation radiation monitors act as backup to the SI signal to ensure closing of the Containment ~~purge and exhaust~~ containment ventilation isolation valves. They are also the primary means for automatically isolating containment in the event of a fuel handling accident or any other source within containment during shutdown. Containment isolation in turn ensures meeting the containment leakage rate assumptions of the safety analyses, and ensures that the calculated accidental offsite radiological doses are below 10 CFR 100 (Ref. 1) limits. DC 3.3-Ed DC 3.3-Ed DC ALL-002

The containment ~~purge and exhaust~~ ventilation isolation instrumentation satisfies Criterion 3 of ~~the NRC Policy Statement~~10 CFR 50.36(c)(2)(ii). DC 3.3-Ed

LCO

The LCO requirements ensure that the instrumentation necessary to initiate Containment ~~Purge and Exhaust~~ Ventilation Isolation, listed in Table 3.3.6-1, is OPERABLE. DC 3.3-Ed

1. Manual Initiation

~~NOT USED~~ STET ~~INSERT B 3.3.6~~ e G 3.3-77

~~The LCO requires two channels OPERABLE. The operator can initiate Containment Purge Isolation at any time by using either of two switches in the control room. Either switch actuates both trains. This action will cause actuation of all components in the same manner as any of the automatic actuation signals.~~

~~The LCO for Manual Initiation ensures the proper amount of redundancy is maintained in the manual actuation circuitry to ensure the operator has manual initiation capability.~~

~~Each channel consists of one push button and the interconnecting wiring to the actuation logic cabinet.~~

(continued)

BASES

LCO (continued)

2. Automatic Actuation Logic and Actuation Relays

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

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

3. Containment Radiation

The LCO specifies ~~four~~ two required channels of radiation monitors to ensure that the radiation monitoring instrumentation necessary to initiate Containment ~~Purge~~ MODE 6 or Ventilation Isolation remains OPERABLE in MODES 1-4. ~~The LCO only requires one monitor to be OPERABLE during CORE ALTERATIONS or during movement of irradiated fuel aasemblies in MODES 1-4. The LCO requires only one monitor to be operable during CORE ALTERATIONS or during movement of irradiated fuel.~~ containment Q 3.3-79

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

4. Containment Isolation - ~~Phase A~~ SI

Refer to LCO 3.3.2, Function ~~3.a~~ 1 AND 3, for all initiating Functions and requirements. Q 3.3-77

(continued)

BASES (continued)

APPLICABILITY

The ~~Manual Initiation,~~ Automatic Actuation Logic and Actuation Relays, Containment Isolation – Phase A, and Containment Radiation Functions are required OPERABLE in MODES 1, 2, 3, and 4, and during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment. Under these conditions, the potential exists for an accident that could release fission product radioactivity into containment. Therefore, the containment ~~purge and exhaust~~ ventilation isolation instrumentation must be OPERABLE in these MODES. DC 3.3-Ed

While in MODES 5 and 6 without fuel handling in progress, the containment ~~purge and exhaust~~ ventilation isolation instrumentation need not be OPERABLE since the potential for radioactive releases is minimized and operator action is sufficient to ensure post accident offsite doses are maintained within the limits of Reference 1. DC 3.3-Ed

ACTIONS

The most common cause of channel inoperability is outright failure or drift of the bistable or process module sufficient to exceed the tolerance allowed by unit specific calibration procedures. Typically, the drift is found to be small and results in a delay of actuation rather than a total loss of function. This determination is generally made during the performance of a ~~COT~~CFT and/or Channel Calibration, when the process instrumentation is set up for adjustment to bring it within specification. Drift can also be observed during a Channel Check or CFT and if observed would prompt action to correct the discrepancy. 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. DC ALL-002

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

A.1

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

(continued)

BASES

ACTIONS

A.1 (continued)

~~failure of a single channel may result in loss of the radiation monitoring Function for certain events. Consequently, the failed channel must be restored to OPERABLE status.~~ The 4 hours allowed to restore the affected channel is justified by the low likelihood of events occurring during this interval, and recognition that ~~one or more of~~ the remaining channel~~s~~ will respond ~~to most events~~.

A Note has been added to state that Condition A is only applicable in MODE 1, 2, 3, or 4.

B.1

DC 3.3 Ed

Condition B applies to all Containment ~~Purge and Exhaust~~ Ventilation Isolation Functions and addresses the train orientation of the Solid State Protection System (SSPS) and the master and slave relays for these Functions. It also addresses the failure of ~~multiple~~both radiation monitoring channels, or the inability to restore a single failed channel to OPERABLE status in the time allowed for Required Action A.1.

If a train is inoperable, ~~multiple~~ both radiation channels are inoperable, or the Required Action and associated Completion Time of Condition A are not met, operation may continue as long as the Required Action for the applicable Conditions of LCO 3.6.3 is met for each valve made inoperable by failure of isolation instrumentation.

A Note is added stating that Condition B is only applicable in MODE 1, 2, 3, or 4.

C.1 and C.2

DC 3.3 Ed

Condition C applies to all Containment ~~Purge and Exhaust~~ Ventilation Isolation Functions and addresses the train orientation of the SSPS and the master and slave relays for these Functions. It also addresses the ~~failure of multiple~~condition of no OPERABLE radiation monitoring channels~~, or the inability to restore a single failed channel to OPERABLE status in the time allowed for Required Action A.1.~~ If a train is inoperable, ~~multiple channels are inoperable,~~ or the ~~Required Action and associated Completion Time of Condition A are not met~~required radiation monitor is inoperable, operation may continue as long as the Required Action to place and maintain containment ~~purge and exhaust~~ ventilation isolation DC 3.3 Ed

(continued)

BASES

ACTIONS

C.1 and C.2 (continued)

valves (RCV-11, 12, FCV 660, 661, 662, 663, 664) in their closed position is met or the applicable Conditions of LCO 3.9.4, "Containment Penetrations," are met for each valve made inoperable by failure of isolation instrumentation. The Completion Time for these Required Actions is Immediately.

A Note states that Condition C is applicable during CORE ALTERATIONS and during movement of irradiated fuel assemblies within containment.

STET ~~other than ESF CVI RESPONSE TIME verification,~~ Remove Strike

SURVEILLANCE REQUIREMENTS

~~Two~~ A ~~Notes~~ Note ~~have~~ has been added to the SR Table ~~The first note clarifies~~ ~~to clarify~~ that Table 3.3.6-1 determines which SRs apply to ~~which~~ Containment ~~Purge and Exhaust~~ ~~Ventilation~~ Isolation Functions. ~~The second note states that the ESFAS CVI RESPONSE TIME verification is specified in SR 3.3.6.8.~~

Q 3.3-55 Remove strikeout DC 3.3-Ed

SR 3.3.6.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the two instrument channels could be an indication of excessive instrument drift in one of the channels or of something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

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

The Frequency is based on operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.6.1 (continued)

channels during normal operational use of the displays associated with the LCO required channels.

SR 3.3.6.2

SR 3.3.6.2 is the performance of an ACTUATION LOGIC TEST. The train being tested is placed in the bypass condition, thus preventing inadvertent actuation. Through the semiautomatic tester, all possible logic combinations, with and without applicable permissives, are tested for each protection function. In addition, the master relay coil is pulse tested for continuity. This verifies that the logic modules are OPERABLE and there is an intact voltage signal path to the master relay coils. This test is performed every 31 days on a STAGGERED TEST BASIS. The Surveillance interval is acceptable based on instrument reliability and industry operating experience.

SR 3.3.6.3

SR 3.3.6.3 is the performance of a MASTER RELAY TEST. The MASTER RELAY TEST is the energizing of the master relay, verifying contact operation and a low voltage continuity check of the slave relay coil. Upon master relay contact operation, a low voltage is injected to the slave relay coil. This voltage is insufficient to pick up the slave relay, but large enough to demonstrate signal path continuity. This test is performed every 31 days on a STAGGERED TEST BASIS. The Surveillance interval is acceptable based on instrument reliability and industry operating experience.

SR 3.3.6.4

A ~~COT~~CFT is performed every 92 days on each required channel to ensure the entire channel will perform the intended Function. The Frequency is based on the staff recommendation for increasing the availability of radiation monitors according to NUREG-1366 (Ref. 2). This test verifies the capability of the instrumentation to provide the containment purge and exhaust system isolation. ~~The~~

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.6.4 (continued)

~~setpoint shall be left consistent with the current unit specific calibration procedure tolerance.~~

SR 3.3.6.5

SR 3.3.6.5 is the performance of a SLAVE RELAY TEST. The SLAVE RELAY TEST is the energizing of the slave relays. Contact operation is verified in one of two ways. Actuation equipment that may be operated in the design mitigation mode is either allowed to function or is placed in a condition where the relay contact operation can be verified without operation of the equipment. Actuation equipment that may not be operated in the design mitigation mode is prevented from operation by the SLAVE RELAY TEST circuit. For this latter case, contact operation is verified by a continuity check of the circuit containing the slave relay. This test is performed every ~~[~~92~~]~~ days. The Frequency is acceptable based on instrument reliability and industry operating experience.

SR 3.3.6.6

SR .8 SI, DC 3.3-Ed

There is no manual actuation of CVI except via phase A or B. This testing is performed as part of 3.3.2.
~~SR 3.3.6.6 is the performance of a TADOT. This test is a check of the Manual Actuation Functions and is performed every [18] months. Each Manual Actuation Function is tested up to, and including, the master relay coils. In some instances, the test includes actuation of the end device (i.e., pump starts, valve cycles, etc.).~~

~~The test also includes trip devices that provide actuation signals directly to the SSPS, bypassing the analog process control equipment. The SR is modified by a Note that excludes verification of setpoints during the TADOT. The Functions tested have no setpoints associated with them.~~

~~The Frequency is based on the known reliability of the Function and the redundancy available, and has been shown to be acceptable through operating experience.~~

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.6.7

24 DC ALL-005

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

The Frequency is based on operating experience and is consistent with the typical industry refueling cycle.

SR 3.3.6.8

Q 3.3-53

This SR assures that the individual channel RESPONSE TIMES are less than or equal to the maximum values assumed in the accident analysis. Response Time testing acceptance criteria are included in ~~the FSAR~~ AN ECG. Individual component response times are not modeled in the analyses. The analyses model the overall or elapsed time, from the point at which the parameter exceeds the Trip Setpoint value at the sensor, to the point at which the equipment in both trains reaches the required functional state (e.g., valves in full closed position). The response time may be measured by a series of overlapping tests such that the entire response time is measured.

24 DC ALL-005

RESPONSE TIME tests are conducted on an ~~18~~ month STAGGERED TEST BASIS. Testing of the final actuation devices, which make up the bulk of the response time, is included in the testing of each channel. The final actuation device in one train is tested with each channel. Therefore, staggered testing results in response time verification of these devices every ~~18~~ months. The ~~18~~ month Frequency is consistent with the typical refueling cycle and is based on unit operating experience, which shows that random failures of instrumentation components causing serious response time degradation, but not channel failure, are infrequent occurrences.

REFERENCES

1. 10 CFR 100.11.

2. NUREG-1366, December 1992.

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: DC 3.3-ED1 (new)APPLICABILITY: DC

REQUEST:

Various changes have been identified that do not impact the technical content of the submittal or other FLOG members. Changes are noted with DC 3.3-ED1 in the margin and noted below:

1) Remove the word "any" on Table 3.3.4-1, Functions 5 and 14 and the associated Bases.

2) Remove the word "emergency" from LCO 3.3.7, Required Action B 1.1.

3) Incorporate NRC editorial comments on the Bases for LCO 3.3.1, Function 6, 7, 12, & 13.

4) Incorporate editorial comments on Bases of LCO 3.3.1, Condition M, and corrects the description of the effect below P-8.

5) Removes unnecessary definition of CHANNEL CALIBRATION.

6) Add introductory statement to Insert for Bases of LCO 3.3.2, Condition J.

7) Incorporate NRC editorial comments on Bases of SR 3.3.2.12 and SR 3.3.2.13.

8) Re-organize the Bases of LCO 3.3.7, Condition B in accordance with NRC comments.

9) Remove Insert discussing RM-45A & RM -45B in Bases for LCO 3.3.8, Surveillance Requirements.

10) Other minor editorial changes, such as typographical, punctuation, spelling, etc. may not be specifically identified by page, but are included in the markup and will be included in the ITS and Bases clean copy.

ATTACHED PAGES:

Encl. 5A	3.3-59, 3.3-70
Encl. 5B	B 3.3-7, B 3.3-14, B 3.3-15, B 3.3-16, B 3.3-17, B 3.3-26, B 3.3-27, B 3.3-36, B 3.3-37, B 3.3-48, B 3.3-60, B 3.3-61, B 3.3-65, B 3.3-69, B 3.3-76, B 3.3-81, B 3.3-88, B 3.3-89, B 3.3-97, B 3.3-102, B 3.3-108, B 3.3-119 (Inserts K & J), B 3.3-128 (Insert), B 3.3-129 (Insert B), B 3.3-150 (Insert A), B 3.3-162, B 3.3-175, B 3.3-177, B 3.3-187

Q 3.3-24

3.3-128

FUNCTIONS

Table 3.3.4-1 (page 1 of ~~2~~1)
Remote Shutdown System ~~Instrumentation and Controls~~

~~NOTE~~

~~Reviewer's Note: This table is for illustration purposes only. It does not attempt to encompass every Function used at every unit, but does contain the types of Functions commonly found.~~ ED

FUNCTION ~~INSTRUMENT OR CONTROL PARAMETER~~	REQUIRED CHANNELS ~~NUMBER OF FUNCTIONS~~
1. ~~Reactivity Control~~	Q 3.3-24 Q 3.3-128
~~a. Source Range Neutron Flux~~	~~[1]~~
~~b.~~ Reactor Trip Breaker Position	1 per trip breaker B
~~c. Manual Reactor Trip~~	~~[2]~~
2. ~~Reactor Coolant System (RCS) Pressure Control~~	
~~a.~~ Pressurizer Pressure ~~or RCS Wide Range Pressure~~	1
~~b. Pressurizer Power Operated Relief Valve (PORV) Control and Block Valve Control~~	~~[1, controls must be for PORV & block valve on same line)~~
3. ~~Decay Heat Removal via Steam Generators (SGs)~~	
~~a.~~ RCS Hot Leg Temperature (loop 1 only)	1 ~~per loop~~ Q 7-01
4. ~~b.~~ RCS Cold Leg Temperature (loop 1 only)	1 ~~per loop~~
5. ~~c.~~ AFW Controls ~~Condensate Storage Tank Level~~	~~[1]~~ 2 of ~~any~~ 3 AFW pumps Q 3.3-128
6. ~~d.~~ SG Pressure	1 per SG DC 3.3-E01
9. ~~f.~~ Condensate Storage Tank Level	1
~~4.~~ ~~RCS Inventory Control~~	
10. ~~a.~~ Pressurizer Level	1
11. ~~b.~~ Charging Pump Controls	~~[1]~~ 2 of 2 pumps
12. ~~c.~~ Charging Flow	1
~~5. Safety Support Systems~~	
13. ~~a.~~ Emergency Diesel Generator Control	3 of 3 diesel generators
14. ~~b.~~ Component Cooling Water Control	~~any~~ 2 of 3 pumps DC 3.3-E01
15. ~~c.~~ Auxiliary Saltwater Control	2 of 2 pumps
7 SG Level	1 per SG
8 AFW Flow	1 per SG Q 7-10

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more Functions with two channels or two trains inoperable.	~~NOTE~~ ~~Place in the toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable.~~	
	B.1.1 Place one ~~GREFS~~CRVS train in ~~emergency~~ ~~[radiation protection]~~ pressurization mode.	PS Immediately DC 3.3-ED1
	AND	
	B.1.2 Enter applicable Conditions and Required Actions for one ~~GREFS~~CRVS train made inoperable by inoperable ~~GREFS~~CRVS actuation instrumentation.	B-PS Immediately
	~~OR~~	PS
	~~B.2 Place both trains in emergency [radiation protection] mode.~~	3.3-51 ~~Immediately~~
C. Required Action and associated Completion Time for Condition A or B not met in MODE 1, 2, 3, or 4.	C.1 Be in MODE 3.	6 hours
	AND	
	C.2 Be in MODE 5.	36 hours

(continued)

BASES

BACKGROUND Reactor Trip Switchgear (continued)

the reactor trip or ESF, these diagrams also describe the various "permissive interlocks" that are associated with unit conditions. Each train has a built in testing device that can automatically test the decision logic matrix Functions ~~and the actuation devices~~ while the unit is at power. When any one train is taken out of service for testing, the other train is capable of providing unit monitoring and protection until the testing has been completed. The testing device is semiautomatic to minimize testing time.

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

The RTS functions to maintain the ~~SLs~~ applicable limits during all AOOs and mitigates the consequences of DBAs in all MODES in which the ~~RTBs are closed~~ Rod Control System is capable of rod withdrawal or one or more rods are not fully inserted. TR 3.3-00

Each of the analyzed accidents and transients can be detected by one or more RTS Functions. The accident analysis described in Reference 3 takes credit for most RTS trip Functions. RTS trip Functions not specifically credited in the accident analysis are qualitatively credited in the safety analysis and the NRC staff approved licensing basis for the unit. These RTS trip Functions may provide protection for conditions that do not require dynamic transient analysis to demonstrate Function performance. They may also serve as backups to RTS trip Functions that were credited in the accident analysis.

The LCO requires all instrumentation performing an RTS Function, listed in Table 3.3.1-1 in the accompanying LCO, to be OPERABLE. Failure of any instrument renders the affected channel(s) inoperable and reduces the reliability of the affected Functions.

The LCO generally requires OPERABILITY of four or three channels in each instrumentation Function, two channels of Manual Reactor Trip in each logic Function, and two trains in each Automatic Trip Logic Function. Generally four OPERABLE instrumentation channels in a two-out-of-four configuration are required when one RTS channel is also used as a control system input. In the case of the DFWCS the MSS feature prevents control/protection interaction even though there are only three inputs and a 2-out-of-3 logic. This configuration accounts for the possibility of the shared channel failing in such a manner that it creates a transient that requires RTS action. In DC 3.3-ED1

MEDIAN SIGNAL SELECT

DIGITAL FEEDWATER CONTROL SYSTEM

(continued)

Remove strikeout

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

5. Source Range Neutron Flux (continued)

TR 3.3-006

the Power Range Neutron Flux—Low ~~Setpoint and Intermediate Range Neutron Flux~~ ~~Trip Functions~~. In MODES 3, 4, and 5, administrative controls also prevent the uncontrolled withdrawal of rods. The NIS source range detectors are located external to the reactor vessel and measure neutrons leaking from the core. The NIS source range detectors do not provide any inputs to control systems. The source range trip is the only RTS automatic protection function required in MODES 2 below P-6, 3, 4, and 5 with the Rod Control System capable of rod withdrawal or ~~all~~ one or more rods not fully inserted. Therefore, the functional capability at the ~~specified~~ Trip Setpoint is assumed to be available. TR 3.3-006

The LCO requires two channels of Source Range Neutron Flux to be OPERABLE. Two OPERABLE channels are sufficient to ensure no single random failure will disable this trip Function. The LCO also requires one channel of the Source Range Neutron Flux to be OPERABLE in MODE 3, 4, or 5 with RTBs open or the control rods incapable of withdrawal. In this case, the source range Function is to provide control room indication ~~and input to the Boron Dilution Protection System (BDPS)~~. The outputs of the Function to RTS logic are not required OPERABLE in MODE 6 or when the RTBs are open or all rods are fully inserted and the Rod Control System is incapable of withdrawal.

The Source Range Neutron Flux Function provides protection for control rod withdrawal from subcritical, boron dilution and control rod ejection events. The Function also provides ~~visual~~ neutron flux indication in the control room.

In MODE 2 when below the P-6 setpoint during a reactor startup, the Source Range Neutron Flux trip must be OPERABLE (1-out-of-2 coincidence). Above the P-6 setpoint, the Intermediate Range Neutron Flux trip and the Power Range Neutron Flux—Low Setpoint trip will provide core protection for reactivity accidents. Above the P-6 setpoint, the NIS source range neutron flux trip may be manually blocked and the high voltage to the detectors may be de-energized. ~~detectors are de-energized and inoperable.~~ Below the P-6 setpoint, the source range neutron flux trip is automatically reinstated and the high voltage to the detectors is automatically energized. TR 3.3-006

In MODE 3, 4, ~~or~~ and 5 with the reactor shut down, but with the Rod Control System capable of rod withdrawal or ~~all~~ one or more rods not fully inserted, the Source Range Neutron Flux trip Function must also be OPERABLE (1-out-of-2 coincidence). ~~If the CRD System is capable of rod withdrawal, the Source Range Neutron Flux trip must be~~ DC 3.3-ED1

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

5. Source Range Neutron Flux (continued)

~~OPERABLE~~ to provide core protection against a rod withdrawal accident. If the ~~CRD~~ Rod Control System is not capable of rod withdrawal, the source range detectors are not required to trip the reactor. However, their monitoring Function must be OPERABLE to monitor core neutron levels and provide indication of reactivity changes that may occur as a result of events like an uncontrolled boron dilution. ~~These inputs are provided to the BDPS.~~ The requirements for the NIS source range detectors in MODE 6 are addressed in LCO 3.9.3, "Nuclear Instrumentation."

6. Overtemperature ΔT

The Overtemperature ΔT trip Function is provided to ensure that the design limit DNBR is met. This trip Function also limits the range over which the Overpower ΔT trip Function must provide protection and it protects against vessel exit bulk boiling and ensures that the exit quality is within the limits defined by the DNBR correlation. The inputs to the Overtemperature ΔT trip include ~~all~~ pressure, coolant temperature, axial power distribution, and reactor power as indicated by loop ΔT assuming full reactor coolant flow. Protection from violating the DNBR limit is assured for those transients that are slow with respect to delays from the core to the measurement system. ~~The Function monitors both variation in power and flow since a decrease in flow has the same effect on ΔT as a power increase.~~ The Overtemperature ΔT trip Function uses each loop's ΔT as a measure of reactor power and is compared with a setpoint that is automatically varied with the following parameters:

- reactor coolant average temperature – the Trip Setpoint is varied to correct for changes in coolant density and specific heat capacity with changes in coolant temperature;

- pressurizer pressure – the Trip Setpoint is varied to correct for changes in system pressure; and

- axial power distribution – f(ΔI), the Trip Setpoint is varied to account for imbalances in the axial power distribution as detected by the

- NIS upper and lower power range detectors. If axial peaks are greater than the design limit, as indicated by the difference between the upper and lower NIS power range detectors, the Trip Setpoint is reduced in accordance with Note 1 of Table 3.3.1-1. DC ALL-002

- Dynamic compensation is included for system piping delays from the core to the temperature measurement system.

Redline ΔT_0, as used in the overtemperature and overpower ΔT trips, represents the 100 percent RTP value of ΔT as measured ~~by the~~ Q 3.3.G-1

(continued) DC 3.3-ED1

BASES

ARE CONDITIONS

~~plant~~ for each loop. For the initial startup of a refueled core, ΔT_0 is initially assumed to be the same as the ~~last~~ measured ΔT value from the previous cycle until ΔT is measured ~~again~~ at full power. Accurate determination of the loop specific ΔT values ~~should be~~ made quarterly when performing the incore/excore recalibration at steady-state conditions (i.e., power distribution not affected by xenon or other transient conditions). The ~~variation in~~ indicated ΔT between loops is due to the ~~variance in both real~~ hot leg temperatures and hot leg temperature measurement biases. The ~~real~~ hot leg temperature variance between loops is primarily caused by asymmetrical flow in the upper plenum, and the difference in hot leg temperature measurement bases. primarily caused by differences in hot leg temperature streaming error between loops. The ~~change in the indicated~~ loop ΔTs with burn up ~~is caused primarily by~~ the change in the hot leg streaming biases as the radial power distribution changes.

ONCE AGAIN

DC ALL-002

Q3.3G-1

DC 3.3-ED1

Redline

DIFFERENCE BETWEEN

VARIATION

CHANGE

WHICH RESULT FROM

The Overtemperature ΔT trip Function is calculated for each loop as described in Note 1 of Table 3.3.1-1. Trip occurs if Overtemperature ΔT is indicated in two loops. ~~At some units,~~ The pressure and temperature signals are used for other control functions~~.~~ ~~For those units,~~, thus the actuation logic must be able to withstand an input failure to the control system, which may then require the protection function actuation, and a single failure in the other channels providing the protection function actuation. Note that this Function also provides a signal to generate a turbine runback prior to reaching the Trip Setpoint. A turbine runback will reduce turbine power and reactor power. A reduction in power will normally alleviate the Overtemperature ΔT condition and may prevent a reactor trip.

The LCO requires all four channels of the Overtemperature ΔT trip Function to be OPERABLE ~~for two and four loop units (the LCO requires all three channels on the Overtemperature ΔT trip Function to be OPERABLE for three loop units)~~. Note that the Overtemperature ΔT Function receives input from channels shared with other RTS Functions. Failures that affect multiple Functions require entry into the Conditions applicable to all affected Functions.

In MODE 1 or 2, the Overtemperature ΔT trip must be OPERABLE to prevent DNB (2-out-of-4 coincidence). In MODE 3, 4, 5, or 6, this trip Function does not have to be OPERABLE because the reactor is not operating and there is insufficient heat production to be concerned about DNB.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

7. Overpower ΔT

The Overpower ΔT trip Function ensures that protection is provided to ensure the integrity of the fuel (i.e., no fuel pellet melting and less than 1% cladding strain) under all possible overpower conditions for Condition I and II events (Ref. 12). This trip Function also limits the required range of the Overtemperature ΔT trip Function and provides a backup to the Power Range Neutron Flux—High Setpoint trip. The Overpower ΔT trip Function ensures that the allowable heat generation rate (kW/ft) of the fuel is not exceeded. It uses the ΔT of each loop as a measure of reactor power with a setpoint that is automatically varied with the following parameters:

DC3.3-ED

The overpower ΔT trip also provides protection to mitigate the consequences of small steamline breaks, as reported in WCAP-9226, Ref. 16, and steamline breaks with coincident control rod withdrawal (Ref. 3).

DC ALL-002

- reactor coolant average temperature—the Trip Setpoint is varied to correct for changes in coolant density and specific heat capacity with changes in coolant temperature; and
- rate of change of reactor coolant average temperature—including dynamic compensation for the delays between the core and the temperature measurement system.

DC ALL-002

ΔT_0, as used in the overtemperature and overpower ΔT trips, ARE represents the 100 percent RTP value of ΔT as measured ~~by the plant~~ for each loop. For the initial startup of a refueled core, ΔT_0 is initially assumed to be the same as the ~~last~~ measured ΔT value from the previous cycle until ΔT is measured ~~again~~ ONCE AGAIN at full power. Accurate determination of the loop specific ΔT values ~~should be~~ made quarterly ~~when~~ CONDITIONS performing the incore/excore recalibration at steady-state conditions (i.e., power distributions not affected by xenon or other transient conditions). The ~~variation in~~ indicated ΔT_0 between loops is due to the ~~variance in both real~~ DIFFERENCE BETWEEN hot leg temperatures and hot leg temperature measurement biases. The ~~real~~ VARIATION hot leg temperature variance between loops is primarily caused by asymmetrical flow in the upper plenum, and the difference in hot leg temperature measurement biases ins primarily caused by differences in hot leg temperature streaming error between loops. The ~~change in the indicated~~ loop ΔTs CHANGE with burn up ~~is caused primarily by~~ WHICH RESULT FROM the change in the hot leg streaming biases as the radial power distribution changes.

Φ3.3G-1

DC 3.3-ED

Red-line this text

The Overpower ΔT trip Function is calculated for each loop as per Note 2 of Table 3.3.1-1. Trip occurs if Overpower ΔT is indicated in two loops. ~~At some units.~~ The temperature signals are used for other control functions. ~~At those units.~~ thus the actuation logic must be able to withstand an input failure to the control system, which may then require the protection function actuation and a single failure in the remaining channels providing the protection function actuation. Note that this Function also provides a signal to

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

12. Undervoltage Reactor Coolant Pumps

ONE RELAY ON EACH RCP FOR TWO RELAYS PER BUS

EACH BUS

The Undervoltage RCPs reactor trip Function ensures that protection is provided against violating the DNBR limit due to a loss of flow in ~~two or more~~all RCS loops. The voltage to ~~each~~~~both RCP buses~~ is monitored by ~~two relays each~~. Above the P-7 setpoint, a loss of voltage detected on ~~two or more~~both RCP buses, i.e. a complete loss of flow event, will initiate a reactor trip. ~~This~~For this event, the under voltage trip Function will generate a reactor trip before the Reactor Coolant Flow-Low (Two Loops) Trip Setpoint is reached. Time delays are incorporated into the Undervoltage RCPs channels to prevent reactor trips due to momentary electrical power transients.

DC3.3-ED1

The LCO requires ~~three~~ two Undervoltage RCPs channels ~~(one per phase)~~ per bus to be OPERABLE ~~(1 per bus both busses)~~.

2 Pumps per bus with one channel per pump

In MODE 1 above the P-7 setpoint, the Undervoltage RCP trip must be OPERABLE. Below the P-7 setpoint, all reactor trips on loss of flow are automatically blocked ~~since no conceivable power distributions could occur that would cause a DNB concern at this low power level~~, since there is insufficient heat production to be concerned about DNB. Above the P-7 setpoint (all) the reactor trip on loss of flow in two ~~or more~~ four RCS loops is automatically enabled. ~~This Function uses the same relays as the ESFAS Function 6.f, "Undervoltage Reactor Coolant Pump (RCP)" start of the auxiliary feedwater (AFW) pumps.~~

DC ALL-002

Add strikeout

13. Underfrequency Reactor Coolant Pumps

The Underfrequency RCPs reactor trip Function ensures that protection is provided against violating the DNBR limit due to a loss of flow in two or more RCS loops from a major network frequency disturbance. An underfrequency condition will slow down the pumps, thereby reducing their coastdown time following a pump trip. ~~The proper~~ An adequate coastdown time is required so that reactor heat can be removed immediately after reactor trip. The frequency of each RCP bus is monitored. Above the P-7 setpoint, a loss of frequency detected ~~on two or more~~ by two relays on one RCP buse~~s~~ will initiate a reactor trip. This trip Function will generate a reactor trip before the Reactor Coolant Flow-Low ~~(Two Loops)~~ Trip Setpoint is reached. Time delays are incorporated into the Underfrequency RCPs channels to prevent reactor trips due to momentary electrical power transients.

(continued)

Remove strike out

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

13. Underfrequency Reactor Coolant Pumps (continued)

The LCO requires ~~three~~ two Underfrequency RCPs channels per bus to be OPERABLE ~~(1 per bus both busses)~~. DC ALL-002

In MODE 1 above the P-7 setpoint, the Underfrequency RCPs trip must be OPERABLE. Below the P-7 setpoint, all reactor trips on loss of flow are automatically blocked ~~since no conceivable power distributions could occur that would cause a DNB concern at this low power level~~ since there is insufficient heat production to be concerned about DNB. Above the P-7 setpoint, the reactor trip on loss of flow in two or more RCS loops is automatically enabled.

14. Steam Generator Water Level – Low Low

Q 3.3-46

a. The SG Water Level – Low Low trip Function ensures that protection is provided against a loss of heat sink ~~and actuates the AFW System prior to uncovering the SG tubes~~ in the event of a loss of feedwater flow to one or more SGs. The SGs are the heat sink for the reactor. In order to act as a heat sink, the SGs must contain a minimum amount of water. A narrow range low low level in any SG is indicative of a loss of heat sink for the reactor. The level transmitters provide input to the SG Level Control System. Therefore, the actuation logic must be able to withstand an input failure to the control system, which may then require the protection function actuation, and a single failure in the other channels providing the protection function actuation. This Function also performs the ESFAS function of starting the AFW pumps on low low SG level.

DC 3.3-ED1

The LCO requires ~~four~~ three channels of SG Water Level – Low Low per SG ~~(1 per SG in one SG)~~ and four channels of RCS ΔT (1/loop) to be OPERABLE. The installation of the median signal selector (MSS) and four channels of RCS ΔT (1/loop) effectively eliminates the possibility that a single random failure could cause a control system action that results in a condition requiring protection action, and also prevent proper operation of a protection system channel designed to protect against the condition. Thus, the MSS prevents interaction between the feedwater control and reactor protection systems in accordance with the requirements of IEEE 279-1971, "Criteria for Protection Systems for Nuclear Power Generating Stations." Removal of this interaction eliminates the need for the low feedwater flow reactor trip. The MSS will functionally separate steam generator narrow range level protection channels (low-low steam generator water level trip) to provide compliance with IEEE 279-1971 and satisfy the original design basis. ~~for four loop units in which these channels are shared between protection and control. In two, three, and four loop units where three SG Water Levels are dedicated to the RTS, only three channels per SG are required to be OPERABLE.~~ This trip is actuated on two out of three low-low water level signals occurring in any steam generator. If a low-low water level condition is detected in one steam generator, signals shall be generated to trip the reactor and start the motor

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

c. Power Range Neutron Flux, P-8 (continued)

4) Q 3.3-44

power, the reactor trip on low flow in any loop is automatically blocked.

The LCO requires four channels of Power Range Neutron Flux, P-8 interlock to be OPERABLE in MODE 1 (2-out-of-4 coincidence). DC ALL-002

In MODE 1, a loss of flow in one RCS loop could result in DNB conditions, so the Power Range Neutron Flux, P-8 interlock must be OPERABLE. In MODE 2, 3, 4, 5, or 6, this Function does not have to be OPERABLE because the core is not producing sufficient power to be concerned about DNB conditions.

d. Power Range Neutron Flux, P-9

The Power Range Neutron Flux, P-9 interlock is actuated at ~~approximately~~ less than or equal to 50% power as determined by two-out-of-four NIS power range detectors. The LCO requirement for this Function ensures that the Turbine Trip—Low ~~Fluid~~ Auto Stop Oil Pressure and Turbine Trip—Turbine Stop Valve Closure reactor trips are enabled above the P-9 setpoint. Above the P-9 setpoint, a turbine trip ~~will~~ may challenge the pressurizer PORVs due to the mismatch between reator power and ~~cause a load rejection beyond the capacity~~ capacities of the Steam Dump and Reactor Control Systems. A reactor trip is automatically initiated on a turbine trip when it is above the P-9 setpoint, to minimize the transient on the reactor. Q 3.3-44

remove strike out

The LCO requires ~~four~~ ~~three~~ channels of Power Range Neutron Flux, P-9 interlock to be OPERABLE in MODE 1 (2-out-of-~~3~~ 4 coincidence).

~~In MODE 1, a turbine trip could cause a load rejection beyond the capacity of the Steam Dump System, so the Power Range Neutron Flux interlock must be OPERABLE.~~ In MODE 2, 3, 4, 5, or 6, this Function does not have to be OPERABLE because the reactor is not at a power level sufficient to have a significant load rejection ~~beyond the capacity~~ ~~capacities of the Steam Dump and Reactor Control Systems~~. DC 3.3-ED

STET

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

e. Power Range Neutron Flux, P-10

The Power Range Neutron Flux, P-10 interlock is actuated at ~~approximately~~ 10% power, as determined by two-out-of-four NIS power range detectors. If power level falls below 10% RTP on 3 of 4 channels, the nuclear instrument trips will be automatically unblocked. The LCO requirement for the P-10 interlock ensures that the following Functions are performed:

- on increasing power, the P-10 interlock allows the operator to manually block the Intermediate Range Neutron Flux reactor trip. Note that blocking the reactor trip also blocks the signal to prevent automatic and manual rod withdrawal;
- on increasing power, the P-10 interlock allows the operator to manually block the Power Range Neutron Flux—Low reactor trip; DC 3.3Ed
- on increasing power, the P-10 interlock automatically provides a back up signal to block the Source Range Neutron Flux ~~reactor trip, and also to de-energize the NIS source range~~ detectors high voltage and allows manual block of the IR rod stop; Remove strike out DC AU-002
- the P-10 interlock provides one of the two inputs to the P-7 interlock; ~~and~~ Add strike out
- on decreasing power, the P-10 interlock automatically enables the Power Range Neutron Flux—Low reactor trip and the Intermediate Range Neutron Flux reactor trip (and rod stop)~~.~~ ; and
- on decreasing power, the P-10 interlock automatically defeats the block of the source range neutron flux trip and with P-6 energizes the source range high voltage.

DC 3.3-ED1

The LCO requires ~~four~~ three STET channels of Power Range Neutron Flux, P-10 interlock to be OPERABLE in MODE 1 or 2 (2-out-of-~~3~~ 4). Q 3.3-44

OPERABILITY in MODE 1 ensures the Function is available to perform its decreasing power Functions in the event of a reactor shutdown. This Function must be OPERABLE in MODE 2 to ensure that core protection is provided during a

(continued)

BASES

ACTIONS

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

sufficient time to perform the calculations and determine that the SDM requirements are met. The SDM must also be verified once per 12 hours thereafter to ensure that the core reactivity has not changed. Required Action L.1 precludes any positive reactivity additions; therefore, core reactivity should not be increasing, and a 12 hour Frequency is adequate. The Completion Times of within 1 hour and once per 12 hours are based on operating experience in performing the Required Actions and the knowledge that unit conditions will change slowly.

M.1 and M.2

Condition M applies to the following reactor trip Functions:

- Pressurizer Pressure - Low;
- Pressurizer Water Level - High;
- Reactor Coolant Flow - Low; ~~(Two Loops)~~ Q3.3.6-1
- RCP Breaker Position ~~(Two Loops)~~;
- Undervoltage RCPs; and
- Underfrequency RCPs.

insert CP 3.3-01

With one channel inoperable, setpoints the inoperable channel must be placed in the tripped condition within 6 hours. ~~Placing the~~ channel in the tripped condition results in a partial trip condition requiring only one additional channel to initiate a reactor trip above the P-7 AND ~~setpoint (above P-8 for the Reactor Coolant Flow-Low reactor trip function) - and below the P-8 setpoint.~~ These Functions do not have to be OPERABLE below the P-7 setpoint because there are no loss of flow trips below the P-7 setpoint. The 6 hours allowed to place the channel in the tripped condition is justified in Reference 7. An additional 6 hours is allowed to reduce THERMAL POWER to below P-7 if the inoperable channel cannot be restored to OPERABLE status or placed in trip within the specified Completion Time. The Reactor Coolant Flow - Low reactor trip function ~~does not have to be OPERABLE~~ below the P-8 setpoint; however, the Required Action must take the plant below the P-7 setpoint, if an inoperable channel is not tripped within 6 hours, due to the shared components between this function and the Reactor Coolant Flow - Low trip function. DC 3.3-ED1

Allowance of this time interval takes into consideration the redundant capability provided by the remaining redundant

Goes From 1 of 4 logic to 2 of 4 logic

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.11 (continued)

INSERT WC 3.3-072

plateau ~~or preamp discriminator~~ curves, evaluating those curves, and comparing the curves to the manufacturer's data. ~~For the intermediate range and power range channels, a test shall be performed that shows allowed variances of detector voltage do not effect detector operation. This Surveillance SR is also modified by Note 2 3 stating that this surveillance is not required to be performed until reactor power exceeds P-6 for the NIS power range detectors for entry into MODE 2 or 1, and is not required for the NIS intermediate range detectors for entry into MODE 2, because the unit must be in at least MODE 2 to perform the test for the intermediate range detectors and MODE 1 for the power range detectors.~~ ~~The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed on the [18] month Frequency.~~ The source range plateau curves are obtained under the conditions that apply during a plant outage.

DC 3.3-005

Remove Strike Out

24 DC ALL-005

The 18 month Frequency is based on past operating experience, which has shown these components usually pass the Surveillance when performed on the 18 month Frequency. The conditions for obtaining the source range plateau curves and the power and intermediate range detector voltages are described above. The other remaining portions of the CHANNEL CALIBRATIONS may be performed either during a plant outage or during plant operation.

SR 3.3.1.12

24 DC ALL-005

SR 3.3.1.12 is the performance of a CHANNEL CALIBRATION of the seismic trip, ~~as described in SR 3.3.1.10,~~ every [18] months. ~~This SR is modified by a Note stating that this test shall include verification of the RCS resistance temperature detector (RTD) bypass loop flow rate.~~

~~CHANNEL CALIBRATION is a complete check of the instrument loop including the sensor. The test verifies that the channel responds to a measured parameter within the necessary range and accuracy.~~

6 DC 3.3-EA1

~~This test will verify the rate lag compensation for flow from the core to the RTDs.~~

24 DC ALL-005

The Frequency is justified by the assumption of an 18 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.13

SR 3.3.1.13 is the performance of a COT of RTS interlocks every ~~[18]~~ months.
(24)
(DC ALL-005)

The Frequency is based on the known reliability of the interlocks and the multichannel redundancy available, and has been shown to be acceptable through operating experience.

SR 3.3.1.14

(24) (DC ALL-001)

SR 3.3.1.14 is the performance of a TADOT ~~of~~ the Manual Reactor Trip, RCP Breaker Position, Seismic Trip ~~and~~ the SI Input from ESFAS. This TADOT is performed every ~~[18]~~ months. The test shall independently verify the OPERABILITY of the undervoltage and shunt trip mechanisms for the Manual Reactor Trip Function for the Reactor Trip Breakers and Reactor Trip Bypass Breakers. The Reactor Trip Bypass Breaker test shall include testing of the automatic undervoltage trip.

The Frequency is based on the known reliability of the Functions and the multichannel redundancy available, and has been shown to be acceptable through operating experience.

The SR is modified by a Note that excludes verification of setpoints from the TADOT. The Functions affected have no setpoints associated with them, except for the Seismic Trip that is calibrated by SR 3.3.1.12 at the same 24 month frequency.
(DC 3.3-005)

SR 3.3.1.15

SR 3.3.1.15 is the performance of a TADOT of Turbine Trip Functions. This TADOT ~~is as~~ described ~~in SR 3.3.1.4~~, except that ~~this test~~ is performed prior to ~~reactor startup~~. ~~A Note states that this Surveillance is not required if it has been performed within the previous 31 days.~~ Verification of the Trip Setpoint does not have to be performed for this Surveillance. Performance of this test will ensure that the turbine trip Function is OPERABLE prior to exceeding the P-9 interlock. ~~taking the reactor critical. This test cannot be performed with the reactor at power and must therefore be performed prior to reactor startup.~~

exceeding the P-9 Interlock whenever the unit has been in Mode 3. This

(TR 3.3-007)
(Q 3.3-55)

And the individual functions requiring RESPONSE TIME verification

SR 3.3.1.16

SR 3.3.1.16 verifies that the individual channel/train actuation response times are less than or equal to the maximum values assumed in the accident analysis. Response time testing acceptance criteria are included in ~~Technical Requirements Manual, Section 15 (Ref. 8)~~ ~~the FSAR (Ref. 1)~~ an (ECG) Equipment Control Guideline. Individual component response times are not modeled in the analyses.

(Q 3.3-65)
(DC 3.3-ED1)

(continued)

(B)

B 3.3 INSTRUMENTATION

B 3.3.2 Engineered Safety Feature Actuation System (ESFAS) Instrumentation

BASES

BACKGROUND

The ESFAS initiates necessary safety systems, based on the values of selected unit parameters, to protect against violating core design limits and the Reactor Coolant System (RCS) pressure boundary, and to mitigate accidents.

The ESFAS instrumentation is segmented into three distinct but interconnected modules as identified below:

- Field transmitters or process sensors and instrumentation: provide a measurable electronic signal based on the physical characteristics of the parameter being measured;
- Signal processing equipment including ~~analog~~ digital protection system, field contacts, and protection channel sets: provide signal conditioning, bistable setpoint comparison, process algorithm actuation, compatible electrical signal output to protection system devices, and control board/control room/ miscellaneous indications; and
- Solid State Protection System (SSPS) including input, logic, and output bays: initiates the proper unit shutdown or engineered safety feature (ESF) actuation in accordance with the defined logic and based on the bistable outputs from the signal process control and protection system.

The residual heat removal pump trip or refueling water storage tank level-low signal is not processed by the SSPS. The associated relays are located in the residual heat removal pumps control system.

DC ALL-002

DC 3.3-ED1

Field Transmitters or Sensors

To meet the design demands for redundancy and reliability, more than one, and often as many as four, field transmitters or sensors are used to measure unit parameters. In many cases, field transmitters or sensors that input to the ESFAS are shared with the Reactor Trip System (RTS). In some cases, the same channels also provide control system inputs. To account for calibration tolerances and instrument drift, which are assumed to occur between calibrations, statistical allowances are provided in the Trip Setpoint and Allowable

(continued)

BASES

BACKGROUND

Solid State Protection System (continued)

transients. If a required logic matrix combination is completed, the system will send actuation signals via master and slave relays to those components whose aggregate Function best serves to alleviate the condition and restore the unit to a safe condition. Examples are given in the Applicable Safety Analyses, LCO, and Applicability sections of this Bases.

Each SSPS train has a built in testing device that can automatically test the decision logic matrix functions and the actuation devices while the unit is at power. When any one train is taken out of service for testing, the other train is capable of providing unit monitoring and protection until the testing has been completed. The testing device is semiautomatic to minimize testing time.

The actuation of ESF components is accomplished through master and slave relays. The SSPS energizes the master relays appropriate for the condition of the unit. Each master relay then energizes one or more slave relays, which then cause actuation of the end devices. The master and slave relays are routinely tested to ensure operation. The test of the master relays energizes the relay, which then operates the contacts and applies a low voltage to the associated slave relays. The low voltage is not sufficient to actuate the slave relays but only demonstrates signal path continuity. The SLAVE RELAY TEST actuates the devices if their operation will not interfere with continued unit operation. For the latter case, actual component operation is prevented by the SLAVE RELAY TEST circuit, and slave relay contact operation is verified by a continuity check of the circuit containing the slave relay. ~~For slay relays in the ESF actuation system circuit that are Potter & Brumfield type MAR relays,~~ The SLAVE RELAY TEST ~~is performed on a refueling frequency~~. The test frequency is based on relay reliability assessments presented in WCAP-13878, "Reliability Assessment of Potter and Brumfield MDR Series Relays," WCAP-13900, "Extension of Slave Relay Surveillance Test Intervals," and WCAP-14117, "Reliability Assessment of Potter and Brumfield MDR Series Relay." These reliability assessments are relay specific and apply only to Potter and Brumfield MDR series relays which are the only relays used in the ESF actuation system. Note that for normally energized applications, the relays may have to be replaced periodically in accordance with the guidance given in WCAP-13878 for MDR relays.

INTERVAL IS 24 MONTHS

DC 3.3-ED

e

DC 3.3-Ed

~~Reviewer's Note: No one unit ESFAS incorporates all of the Functions listed in Table 3.3.2-1. In some cases (e.g., Containment Pressure - High 3, Function 2.c), the table reflects several different implementations of the same Function. Typically, only one of these implementations are used at any specific unit.~~

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

d. Safety Injection — Pressurizer Pressure — Low (continued)

The transmitters are located inside containment, with the taps in the vapor space region of the pressurizer, and thus possibly experiencing adverse environmental conditions (LOCA, SLB inside containment, rod ejection). Therefore, the Trip Setpoint reflects the inclusion of both steady state and adverse environmental instrument uncertainties.

INTERLOCK

INTERLOCK

AND BELOW P-11, UNLESS THE SAFETY INJECTION - PRESSURIZER PRESSURE - LOW FUNCTION IS BLOCKED

Q 3.3-63

This Function must be OPERABLE in MODES 1, 2, and 3 (above P-11) to mitigate the consequences of an HELB inside containment. This signal may be manually blocked by the operator below the P-11 setpoint. Automatic SI actuation below this pressure setpoint is then performed by the Containment Pressure — High ~~1~~ signal ~~unless blocked~~.

Remove strikeout

This Function is ~~not~~ e required to be OPERABLE in MODE 3 ~~above the~~ ~~P-11 setpoint, and~~ below the P-11 ~~setpoint~~. ~~Other ESF functions are used to detect accident conditions and actuate the ESF systems in this MODE.~~ In MODES 4, 5, and 6, this Function is not needed for accident detection and mitigation.

e

Q 3.3-63

Interlock

DC 3.3-ED1

e. Safety Injection — Steam Line Pressure

(1) Steam Line Pressure — Low

Steam Line Pressure — Low provides protection against the following accidents:

- SLB;
- Feed line break; and
- Inadvertent opening of an SG relief or an SG safety valve.

Steam Line Pressure — Low provides ~~no~~ input to the DFWCS ~~any control~~ functions. The MSS function prevents the excursion of one of the inputs from causing a process disturbance that would require protective action from the remaining cahnnels on the affected steam line. Thus, three OPERABLE channels on each steam line are sufficient to satisfy the protective

(continued)

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

2. Containment Spray

Containment Spray coincident with an SI signal provides three primary functions:

1. Lowers containment pressure and temperature after an HELB in containment;
2. Reduces the amount of radioactive iodine in the containment atmosphere; and
3. Adjusts the pH of the water in the containment recirculation sump after a large break LOCA.

These functions are necessary to:

- Ensure the pressure boundary integrity of the containment structure;
- Limit the release of radioactive iodine to the environment in the event of a failure of the containment structure; and
- Minimize corrosion of the components and systems inside containment following a LOCA.

The containment spray actuation signal coincident with SI starts the containment spray pumps and aligns the discharge of the pumps to the containment spray nozzle headers in the upper levels of containment. Water is initially drawn from the RWST by the containment spray pumps and mixed with a sodium hydroxide solution from the spray additive tank. When the RWST reaches the low low level setpoint, the spray pumps ~~suctions~~ are manually tripped. ~~and~~ Spray flow can then be shifted to the ~~containment sump~~ RHR system if continued containment spray is required. Containment spray is actuated ~~manually~~ by ~~Containment Pressure—High 3 or~~ Containment Pressure—High High coincident with an SI signal.

a. Containment Spray—Manual Initiation

The operator can manually initiate containment spray ~~at any time~~ from the control room if an SI signal is present by simultaneously turning ~~two~~ both Containment Isolation Phase B (containment spray) ~~actuation~~ Actuate Trains A & B switches ~~in the same train~~. Because an inadvertent actuation of containment spray could have such serious consequences, two switches must be turned

DC 3.3-E[illegible]

(continued)

BASES

remove strikeout DC ALL-002

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

(1) ~~Phase B Isolation - Manual Initiation~~

(2) Phase B Isolation - Automatic Actuation Logic and Actuation Relays (continued)

isolation. There also is adequate time for the operator to evaluate unit conditions and manually actuate individual isolation valves in response to abnormal or accident conditions.

(3) Phase B Isolation - Containment Pressure

The basis for containment pressure MODE applicability is as discussed for ESFAS Function 2.c above.

4. Steam Line Isolation

Isolation of the main steam lines provides protection in the event of an SLB inside or outside containment. Rapid isolation of the steam lines will limit the steam break accident to the blowdown from one SG, at most. For an SLB upstream of the main steam isolation valves (MSIVs), inside or outside of containment, closure of the MSIVs limits the accident to the blowdown from only the affected SG. For an SLB downstream of the MSIVs, closure of the MSIVs terminates the accident as soon as the steam lines depressurize. ~~For units that do not have steam line check valves, Steam Line Isolation also mitigates the effects of a feed line break and ensures a source of steam for the turbine driven AFW pump during a feed line break.~~

a. Steam Line Isolation - Manual Initiation

DC 3.3-ED1

Manual initiation of Steam Line Isolation can be accomplished from the control room via an individual switch ~~on~~ FOR each valve. ~~There are two switches in the control room and either switch can initiate action to immediately close all MSIVs.~~ The LCO requires ~~two~~ one channel~~s~~ per valve to be OPERABLE.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

b. Steam Line Isolation – Automatic Actuation Logic and Actuation Relays

Automatic actuation logic and actuation relays consist of the same features and operate in the same manner as described for ESFAS Function 1.b.

Manual and automatic initiation of steam line isolation must be OPERABLE in MODES 1, 2, and 3 when there is sufficient energy in the RCS and SGs to have an SLB or other accident. This could result in the release of significant quantities of energy and cause a cooldown of the primary system. The Steam Line Isolation Function is required in MODES 2 and 3 unless all MSIVs are closed and ~~[de-activated]~~ actions are taken to ensure the valves cannot be inadvertently opened. In MODES 4, 5, and 6, there is insufficient energy in the RCS and SGs to experience an SLB or other accident releasing significant quantities of energy.

DC ALL-002

c. Steam Line Isolation – Containment Pressure – ~~High 2~~ High

This Function actuates closure of the MSIVs in the event of a LOCA or an SLB inside containment ~~to maintain at least one unfaulted SG as a heat sink for the reactor, and~~ to limit the mass and energy release to containment ~~to a single SG~~ FROM. The transmitters (d/p cells) are located outside containment with the sensing line (high pressure side of the transmitter) located inside containment. Containment Pressure – High ~~2~~ High provides no input to any control functions. Thus, three OPERABLE channels are sufficient to satisfy protective requirements with two-out-of-three logic. However, for enhanced reliability, this Function was designed with four channels and a two-out-of-four logic. The transmitters and electronics are located outside of containment. Thus, they will not experience any adverse environmental conditions, and the Trip Setpoint reflects only steady state instrument uncertainties.

DC 3.3-E1

Containment Pressure – High ~~2~~ High must be OPERABLE in MODES 1, 2, and 3, when there is sufficient energy in the primary and secondary side to pressurize the containment following a pipe

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

b. Turbine Trip and Feedwater Isolation – Steam Generator Water Level – High High (P-14) (continued)

For

instruments provide input to the SG Water Level Control System. Therefore, the actuation logic must be able to withstand both an input failure to the control system (which may then require the protection function actuation) and a single failure in the other channels providing the protection function actuation. Thus, ~~four~~ three OPERABLE channels (narrow range instrument span each generator) are required to satisfy the requirements with a two-out-of-~~four~~ three logic ~~and. For units that have dedicated protection and control channels, only three protection channels are necessary to satisfy the protective requirements. For other units that have only three channels,~~ a median signal selector is provided to prevent control and protection function interactions ~~or justification is provided in NUREG-1218 (Ref. 7)~~.

DC 3.3-ED1

The transmitters (d/p cells) are located inside containment. However, the events that this Function protects against cannot cause a severe environment in containment. Therefore, the Trip Setpoint reflects only steady state instrument uncertainties.

c. Turbine Trip and Feedwater Isolation – Safety Injection

Turbine Trip and Feedwater Isolation is also initiated by all Functions that initiate SI. The Feedwater Isolation Function requirements for these Functions are the same as the requirements for their SI function. Therefore, the requirements are not repeated in Table 3.3.2-1. Instead Function 1, SI, is referenced for all initiating functions and requirements.

Turbine Trip and Feedwater Isolation Functions must be OPERABLE in MODES 1 and 2 ~~[and 3]~~ except when all MFIVs, MFRVs, ~~[and associated bypass valves]~~ are closed and ~~[de-activated]~~ ~~[or isolated by a closed manual valve]~~ when the MFW System is in operation and the turbine generator may be in operation. In MODES ~~[3,]~~ 4, 5, and 6, the MFW System and the turbine

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

e. ~~Auxiliary Feedwater—Loss of Offsite Power (continued)~~

~~reactor decay heat and sensible heat removal following the reactor trip.~~

and Q 2-08

Functions 6.a ~~through 6.e~~ 6.b, 6.d, ~~and 6.g~~ must be OPERABLE in MODES 1, 2, and 3 to ensure that the SGs remain the heat sink for the reactor except the RCS ΔT ~~time delays~~ associated with Function 6.d, are only required to be operable in MODES 1 and 2. Below Mode 2, for the trip time delay, the maximum time delay is permitted; therefore, no OPERABILITY requirement is imposed on vessel ΔT channels in MODE 3. SG Water Level—Low Low in any operating SG will cause the motor driven AFW pumps to start. The system is aligned so that upon a start of the pump, water immediately begins to flow to the SGs. SG Water Level—Low Low in any two operating SGs will cause the turbine driven pumps to start. These Functions do not have to be OPERABLE in MODES 5 and 6 because there is not enough heat being generated in the reactor to require the SGs as a heat sink. In MODE 4, AFW actuation does not need to be OPERABLE because either AFW or residual heat removal (RHR) will already be in operation to remove decay heat or sufficient time is available to manually place either system in operation.

equivalent power inputs

Q 3.3-46

~~f~~ g. Auxiliary Feedwater—Undervoltage Reactor Coolant Pump

INSERT LCO 6.g Q 2-08

A loss of power on the buses that provide power to the RCPs provides indication of a pending loss of RCP forced flow in the RCS. The Undervoltage RCP Function senses the voltage ~~downstream~~ upstream of each RCP breaker. A loss of power ~~, or an open RCP breaker,~~ on two ~~or more~~ RCPs ~~buses,~~ will start the turbine driven AFW pump to ensure that at least one SG contains enough water to serve as the heat sink for reactor decay heat and sensible heat removal following the reactor trip.

DC 3.3-ED1

~~g~~ h. NOT USED
~~Auxiliary Feedwater—Trip of All Main Feedwater Pumps~~

~~A Trip of all MFW pumps is an indication of a loss of MFW and the subsequent need for some method of decay heat and sensible heat removal to bring the reactor back to no load temperature and pressure. A turbine~~

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

a. Engineered Safety Feature Actuation System Interlocks – Reactor Trip, P-4 (continued)

- Trip the main turbine;
- Isolate MFW with coincident low T_{avg} ≤ 554°F;
- ~~Prevent~~ Allows manual block of the automatic reactuation of SI ~~after a manual reset of SI~~;
- Transfer the steam dump from the load rejection controller to the ~~unit~~ plant trip controller; and
- Prevent opening of the MFW ~~isolation~~ reg Regulating valves or bypass valves if they were closed on SI or high SG Water Level ~~— High High~~. DC 3.3-ED1

Each of the above Functions is interlocked with P-4 to avert or reduce the continued cooldown of the RCS following a reactor trip. An excessive cooldown of the RCS following a reactor trip could cause an insertion of positive reactivity with a subsequent increase in ~~generated~~ core power. To avoid such a situation, the noted Functions have been interlocked with P-4 as part of the design of the unit control and protection system.

None of the noted Functions serves a mitigation function in the unit licensing basis safety analyses. Only the turbine trip Function is explicitly assumed since it is an immediate consequence of the reactor trip Function. Neither turbine trip, nor any of the other four Functions associated with the reactor trip signal, is required to show that the unit licensing basis safety analysis acceptance criteria are met ~~not exceeded~~.

The RTB position switches that provide input to the P-4 interlock only function to energize or de-energize or open or close contacts. Therefore, this Function has no adjustable trip setpoint with which to associate a Trip Setpoint and Allowable Value.

(continued)

BASES

ACTIONS

I.1 and I.2 (continued)

partial trip condition where one additional tripped channel will result in actuation. The 6 hour Completion Time is justified in Ref. 8. Failure to restore the inoperable channel it OPERABLE status or place it in the tripped condition withing 6 hours requires the Unit to be placed in MODE 2 with in the following 6 hours. The allowed Completion time of 6 hours is reasonable, based on operating experience, to reach MODE 2 from full power conditions in an orderly manner without challenging unit systems. In MODE 2, this Function is no longer required OPERABLE.

The Required Actions are modified by a Note that allows the inoperable channel to be bypassed for up to 4 hours for surveillance testing of other channels. The 6 hours allowed to place the inoperable channel in the tripped condition, and the 4 hours allowed for a second channel to be in the bypassed condition for testing, are justified in Reference 8.

J.1 and J.2 INSERT ACTION J BASES Q 3.3-127

~~NOT USED~~
~~Condition J applies to the AFW pump start on trip of all MFW pumps.~~

~~This action addresses the train orientation of the SSPS for the auto start function of the AFW System on loss of all MFW pumps. The OPERABILITY of the AFW System must be assured by allowing automatic start of the AFW System pumps. If a channel is inoperable, 48 hours are allowed to return it to an OPERABLE status. If the function cannot be returned to an OPERABLE status, 6 hours are allowed to place the unit in MODE 3. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging unit systems. In MODE 3, the unit does not have any analyzed transients or conditions that require the explicit use of the protection function noted above. The allowance of 48 hours to return the train to an OPERABLE status is justified in Reference 8.~~

K.1.1, K.1.2

~~K.1~~, K.2.1 and K.2.2

INSERT K

Condition K applies to:

- ~~RWST Level - Low Low Coincident with Safety Injection, and~~
- ~~RWST Level - Low Low Coincident with Safety Injection and Coincident with Containment Sump Level - High.~~

(continued)

Insert for Q 3.3-127

Enclosure 5B page B 3.3-119
Insert ACTION J Bases

If one channel is inoperable, 6 hours are allowed to restore one channel to OPERABLE status or to place it in the tripped condition. If placed in the tripped condition, the Function is then in a partial trip condition where one-out-of-two logic will result in actuation. The 6-hour Completion Time is justified in Reference 8. Failure to restore the inoperable channel to OPERABLE status or place it in the tripped condition within 6 hours requires the unit to be placed in MODE 3 within 12 hours. The allowed Completion Time of 12 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging unit systems. In MODE 3, this Function is no longer required OPERABLE.

The Required Actions are modified by a Note that allows the inoperable channel to be bypassed for up to 4 hours for surveillance testing of other channels. The 6 hours allowed to place the inoperable channel in the tripped condition, and the 4 hours allowed for a second channel to be in the bypassed condition for testing, are justified in Reference 8.

DC 3.3-ED1

Condition J applies to the turbine trip and feedwater isolation actuation signal resulting from steam generator Level - High High (P-14).

(B)

INSERT K

K.1.1, K.1.2

~~K.1,~~ K.2.1 and K.2.2

the Residual Heat Removal Pump Trip on

STET (cut-out)

DC 3.3-ED1

Condition K applies to RWST Level - Low. ~~which trips both RHR pumps.~~ Restoring the channel to OPERABLE status or placing the inoperable channel in the ~~bypass~~ condition within 6 hours is sufficient to ensure that the Function remains OPERABLE, ~~and~~ minimizes the time that the Function may be in a partial trip condition (assuming the inoperable channel has failed low). ~~Placing the out-of-service channel in bypass will generate a high level signal on that channel, which will ensure that under no circumstances can a failure of an additional channel low prevent the RHR pumps from starting as the result of an SI signal.~~ The 6 hour Completion Time is justified in Reference 8. If the channel cannot be placed in the ~~bypass~~ condition within 6 hours and returned to an OPERABLE status within ~~72~~ hours, the unit must ~~immediately enter LCO 3.0.3.~~ ~~The 72 hour Allowed Outage Time (AOT) is the same AOT that is allowed for one inoperable RHR pump. This comparison is reasonable because the possible consequences of losing a second level channel can, in the worst case, be no more severe than the loss of one RHR pump, and the probability of losing the level channel is even lower than that of losing an RHR pump.~~ The allowed Completion Times for shutdown are reasonable based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. In MODE 5, the unit does not have any analyzed transients or conditions that require the explicit use of the pump trip function noted above.

DC 3.3-Ed

cut-out

48

be brought to MODE 3 within ~~the following 6~~ hours and MODE 5 within ~~the next 30~~ hours

84

54

DC 3.3-Ed

Q 3.3-29

cut-out removes that channel from the trip logic, similar to a bypass function. This provides a [illegible] out-of-two trip logic.

~~a second~~

BASES

AN ECG

and the individual functions requiring RESPONSE TIME verification

SURVEILLANCE REQUIREMENTS

SR 3.3.2.10 (continued)

accident analysis. Response Time testing acceptance criteria are included in ~~the Technical Requirements Manual. Section 15 (Ref. 9) FSAR and SR 3.3.2.10 is only applicable to those functions with a specified limit.~~ Individual component response times are not modeled in the analyses. The analyses model the overall or total elapsed time, from the point at which the parameter exceeds the Trip Setpoint value at the sensor, to the point at which the equipment in both trains reaches the required functional state (e.g., pumps at rated discharge pressure, valves in full open or closed position).

Q 3.3-55

For channels that include dynamic transfer functions (e.g., lag, lead/lag, rate/lag, etc.), the response time test may be performed with the transfer functions set to one with the resulting measured response time compared to the appropriate FSAR response time. Alternately, the response time test can be performed with the time constants set to their nominal value provided the required response time is analytically calculated assuming the time constants are set at their nominal values. The response time may be measured by a series of overlapping tests such that the entire response time is measured.

INSERT 15A-H1

DC ALL-002

INSERT ADDED DC ALL-002(2)

ESF RESPONSE TIME tests are conducted on an ~~[18]~~ 24 month STAGGERED TEST BASIS. Testing of the final actuation devices, which make up the bulk of the response time, is included in the testing of each channel. The final actuation device in one train is tested with each channel. Therefore, staggered testing results in response time verification of these devices every ~~[18]~~ 24 months. The ~~[18]~~ 24 month Frequency is consistent with the typical refueling cycle and is based on unit operating experience, which shows that random failures of instrumentation components causing serious response time degradation, but not channel failure, are infrequent occurrences.

DC ALL-005

This SR is modified by a Note that clarifies that the turbine driven AFW pump is tested within 24 hours after reaching ~~[1000]~~ 650 psig in the SGs.

SR 3.3.2.11

SR 3.3.2.11 is the performance of a TADOT as described in SR 3.3.2.8, except that it is performed for the P-4 Reactor

Each verification shall include at least one train such that both trains are verified at least once per 48 months.

DC ALL-002

Insert for DC ALL-002
DC 3.3-E01

Enclosure 5B page B 3.3-~~98~~ 128
Insert DC ALL-002 (2)

Response time mat be verified by actual response time tests in any series of sequential, overlapping or total channel measurements, or by the summation of allocated sensor response times with actual response time tests on the remainder of the channel. Allocations for sensor response times may be obtained from: 1) historical records based on acceptable response time tests (hydraulic, noise, or power interrupt tests), 2) inplace, onsite, or offsite (e.g. vendor) test measurements, or 3) utilizing vendor engineering specifications. WCAP-13632-P-A, revision 2, "elimination of Pressure sensor Response time Testing requirements," dated January 1996, provides the basis and the methodology for using allocated sensor response times in the overall verification of the channel response time for specific sensors identified in the WCAP. Response time verification for other sensor types must be demonstrated by test.

The allocations for sensor response times must be verified prior to placing the component in initial operational service and re-verified following maintenance that may adversely affect response time. In general, electrical repair work does not impact response time provided the parts used for repair are of the same type and value. One example where response time could be affected is replacing the sensing assembly of a transmitter.

(B)

DC 3.3-ED1

Insert 8 ~~TSTF 111~~ (Insert pp. B 3.3-128)

Response time may be verified by actual response time tests in any series of sequential, overlapping or total channel measurements, or by the summation of allocated sensor response times with actual response time tests on the remainder of the channel. Allocations for sensor response times may be obtained from: (1) historical records based on acceptable response time tests (hydraulic, noise, or power interrupt tests), (2) implace, onsite, or offsite (e.g. vendor) test measurements, or (3) utilizing vendor engineering specifications. WCAP-13632-P-A, Revision 2, "Elimination of Pressure Sensor Response Time Testing Requirements," dated January 1996, provides the basis and methodology for using allocated sensor response times in the overall verification of the channel response time for specific sensors identified in the WCAP. Response time verification for other sensor types must be demonstrated by test.

The allocations for sensor response times must be verified prior to placing the component in initial operational service and re-verified following maintenance that my adversely affect response time. In general, electrical repair work does not impact response time provided the parts used for repair are of the same type and value. One example where response time could be affected is replacing the sensing assembly of a transmitter.

— Delete extra copy. —

DC 3.3-ED

B

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.2.11 (continued)

DC ALL-001

24

Trip Interlock~~, and the Frequency is once per RTB cycle~~. ~~This~~ The ~~18~~ month Frequency is based on operating experience. ~~demonstrating that undetected failure of the P-4 interlock sometimes occurs when the RTB is cycled.~~

The SR is modified by a Note that excludes verification of setpoints during the TADOT. The Function tested has no associated setpoint.

Insert B

DC ALL-002

REFERENCES

1. FSAR, Chapter 6.
2. FSAR, Chapter 7.
3. FSAR, Chapter 15.
4. IEEE-279-1971.
5. 10 CFR 50.49.

DC ALL-002

5

6. ~~RTS/ESFAS Setpoint Methodology Study~~ WCAP-11082, Rev. 2, "Westinghouse Setpoint Methodology for Protection Systems Diablo Canyon Stations - Eagle 21 Version," May 1993
7. ~~NUREG-1218, April 1988~~ WCAP-13900, "Extension of Slave Relay Surveillance Test Intervals", April 1994
8. WCAP-10271-P-A, Supplement 2, Rev. 1, June 1990.
9. ~~Technical Requirements Manual, Section 16, "Response Times." None.~~ WCAP-13878, "Reliability of Potter & Brumfield MDR Relays", June 1994.

DC 3.3-ED

10. WCAP-14117, "Reliability Assessment of Potter and Brumfield MDR Series Relays."

11. WCAP-13632-P-A, Revision 2, "Elimination of Pressure Sensor Response Time Testing Requirements," January 1996.

12. WCAP-11082, Rev.5, "Westinghouse Setpoint Methodology for Protection Systems, Diablo Canyon Units 1 and 2, 24 Month Fuel Cycle Evaluation," January 1997

DC ALL-002

B

Insert B

SR 3.3.2.12

DC 3.3-ED1

SR 3.3.2.12 is the performance of an ACTUATION LOGIC TEST ~~as described in TS 1.0 "Definitions."~~ This SR is applied to the RHR Pump Trip on RWST Level-Low actuation logic and relays which are not processed through the SSPS. This test is performed every 24 months ~~refueling outage~~. The frequency is adequate based on site and industry operating experience, considering equipment reliability and historical ~~history~~ data.

SR 3.3.2.13

SR 3.3.2.13 is the performance of a TADOT for This test is a check of the Manual Actuation Functions ~~and~~ AFW ~~pump start on trip of all MFW pumps~~. It is performed every 24 ~~[18]~~ months. Each Manual Actuation Function is tested up to, and including, the master relay coils. In some instances, the test includes actuation of the end device (i.e., pump starts, valve cycles, etc.). The Frequency is adequate, based on industry operating experience and is consistent with an interval of every 24 months ~~the typical refueling cycle~~. The SR is modified by a Note that excludes verification of setpoints during the TADOT for manual initiation Functions. The manual initiation Functions have no associated setpoints.

DC 3.3-ED1

B 3.3 INSTRUMENTATION

B 3.3.4 Remote Shutdown System

BASES

BACKGROUND

The Remote Shutdown System provides the control room operator with sufficient instrumentation and controls to place and maintain the unit in a safe shutdown condition from a location other than the control room. This capability is necessary to protect against the possibility that the control room becomes inaccessible. A safe shutdown condition is defined as MODE 3. With the unit in MODE 3, the Auxiliary Feedwater (AFW) System and the steam generator (SG) safety valves ~~or the SG atmospheric dump valves (ADVs)~~ can be used to remove core decay heat and meet all safety requirements. The long term supply of water for the AFW System ~~and the ability to borate the Reactor Coolant System (RCS)~~ allows extended operation in MODE 3 until such time that either control is transferred back to the Control Room or a cooldown is initiated from outside the control room. Q3.3.6-1 remote redline

If the control room becomes inaccessible, the operators can establish control at the remote shutdown panel (hot shutdown panel), and place and maintain the unit in MODE 3. Not all controls and necessary transfer switches are located at the ~~remote~~ hot shutdown panel. Some controls and transfer switches will have to be operated locally at the switchgear, motor control panels, or other local stations. The unit automatically reaches MODE 3 following a unit shutdown and can be maintained safely in MODE 3 for an extended period of time.

following DC ALL-002

The OPERABILITY of the following remote shutdown control and instrumentation functions ensures there is sufficient information available on selected unit parameters to place and maintain the unit in MODE 3 should the control room become inaccessible.

INSERT A DC 3.3-ED1 DC ALL-002

APPLICABLE SAFETY ANALYSES

The Remote Shutdown ~~System is required to~~ ~~Instrumentation Functions and the hot shutdown panel controls~~ provides equipment at appropriate locations outside the control room with a capability to promptly shut down and maintain the unit in a safe condition in MODE 3. 5.0 Q 3.3-94 DC ALL-002

The criteria governing the design and specific system requirements of the Remote Shutdown ~~System~~ ~~Instrumentation Functions and controls~~ are located in 10 CFR 50, Appendix A, GDC 19 (Ref. 1). 5.0 Q 3.3-94

(continued)

INSERT A
(PAGE B 3.3-150)

(E)

Q 3.3-24

	INSTRUMENT/CONTROL FUNCTION	READOUT/CONTROL LOCATION	REQUIRED ~~NUMBER OF~~ CHANNELS	
1.	Reactor Trip Breaker Indication	Reactor Trip Breaker	1/trip breaker	
2.	Pressurizer Pressure	Hot Shutdown Panel	1	
10 ~~3.~~	Pressurizer Level	Hot Shutdown Panel	1	
6 ~~4.~~	Steam Generator Pressure	Hot Shutdown Panel	1/stm. gen.	DC 3.3-ED
7 ~~5.~~	Steam Generator Wide Range Water Level ~~or Auxiliary Feedwater Flow~~	Hot Shutdown Panel	1/stm. gen.	Q 7-10
9 ~~6.~~	Condensate Storage Tank Water Level	Hot Shutdown Panel	1	DC ALL-002
8 ~~7.~~	~~Auxiliary Feedwater Flow~~ (REMOVE STRIKEOUT)	~~Hot Shutdown Panel~~	~~1/stm. gen.~~	Q 7-10
12 ~~7~~ ~~8.~~ (3 & 4)	Charging Flow	Hot Shutdown Panel	1	
~~8~~ ~~9.~~	RCS Loop 1 Temperature Indication	Dedicated Shutdown Panel	Hot and Cold Leg Temperature Indication	
5 ~~9~~ ~~10.~~	Auxiliary Feedwater Flow Control - AFW Pump, and Associated Valves - Transfer Switches	 Hot Shutdown Panel 4kV Switchgear	 ~~any~~ 2 of 3 AFW pumps	DC 3.3-E[illegible]
11 ~~10~~ ~~11.~~	Charging Flow Control - Centrifugal Charging Pump - Transfer Switch	 Hot Shutdown Panel 4kV Switchgear	 2 of 2 pumps	
14 ~~11~~ ~~12.~~	Component Cooling Water Control - Component Cooling Water Pump - Transfer Switch	 Hot Shutdown Panel 4kV Switchgear	 ~~any~~ 2 of 3 CCW pumps	DC 3.3-E[illegible]
15 ~~12~~ ~~13.~~	Auxiliary Saltwater Control - Auxiliary Saltwater Pump - Transfer Switch	 Hot Shutdown Panel 4kV Switchgear	 2 of 2 pumps	
13 ~~13~~ ~~14.~~	Emergency Diesel Generator Control - EDG Start	 EDG Local Control Panel	 3 of 3 EDGs	~~DC All-002~~ DC 3.3-ED1

~~RESTORE ORIGINAL NUMBERING~~

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.5.2

DC All-005

SR 3.3.5.2 is the performance of a TADOT. This test is performed every ~~[31 days]~~ ~~18~~ 24 months. The test checks trip devices that provide actuation signals directly, bypassing the analog process control equipment. For these tests, the relay Trip Setpoints are verified and adjusted as necessary. The Frequency is based on the known reliability of the relays and controls and the multichannel redundancy available, and has been shown to be acceptable through operating experience.

SR 3.3.5.3

SR 3.3.5.3 is the performance of a CHANNEL CALIBRATION.

The setpoints, as well as the response to a loss of voltage and a degraded voltage test, shall include a single point verification that the trip occurs within the required time delay~~, as shown in Reference 1~~.

DC All-005

DC 3.3-ED1

A CHANNEL CALIBRATION is performed every ~~[18]~~ 24 months~~, or approximately at every refueling~~. CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test verifies that the channel responds to a measured parameter within the necessary range and accuracy.

DC All-005

DC 3.3-ED1

The Frequency of ~~[18]~~ 24 months is based on operating experience and consistency with the typical industry refueling cycle and is justified by the assumption of an ~~[18]~~ month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

REFERENCES

1. FSAR, Section [8.3].

2. FSAR, Chapter [15].

3. ~~Unit Specific RTS/ESFAS Setpoint Methodology Study~~WCAP-11082, Rev. 2, "Westinghouse Setpoint Methodology for Protection Systems Diablo Canyon Stations-Eagle 21 Version", May 1993.

BASES

CRVS

Q 3-08

LCO

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

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

Retain Strike out

Remove Strike Out

3. Control Room Radiation

The LCO specifies two required Control Room ~~Atmosphere~~ Normal Intake Radiation Monitors ~~and two required Control Room Air Intake Radiation Monitors at each~~ to ensure that the radiation monitoring instrumentation necessary to initiate the ~~CREFS~~ CRVS pressurization system 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.~~

Remove Strike Out Q 3-08

~~4. Safety Injection~~

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

INSERT B 3.3.7(4)

DC 3.3-ED

APPLICABILITY

The ~~CREFS~~ CRVS Functions must be OPERABLE in MODES 1, 2, 3, 4, ~~[and during CORE ALTERATIONS]~~ during 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, or a fuel handling or core alteration accident to ensure a habitable environment for the control room operators.

Q 3.3-79

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

Q 3.3-79

(continued)

BASES

ACTIONS (continued)

B.1.1 and B.1.2 ~~and B.2~~

DC ALL-002

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

DC 3.3-ED1

~~Alternatively,~~ Both trains ~~may~~ cannot be placed in the ~~emergency [radiation protection]~~ pressurization mode. ~~This ensures the CREFS function is performed even in the presence of a single failure.~~

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

C.1 and C.2

Condition C applies when the Required Action and associated Completion Time for Condition A or B have not been met and the unit is in MODE 1, 2, 3, or 4. The unit must be brought to a MODE in which the LCO requirements are not applicable. To achieve this status, the unit must be brought to MODE 3 within 6 hours and MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

Since the design of the system is such that operation of two pressurization fans would overpressurize the supply ducting to the filters.

DC ALL-002

(continued)

BASES

ACTIONS

~~B.1.1, B.1.2, B.2 (continued)~~

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

C.1

Condition C applies when the Required Action and associated Completion Time for Condition A ~~or B~~ ~~have~~has not been met and irradiated fuel assemblies are being moved in the fuel building. Movement of irradiated fuel assemblies in the fuel building must be suspended immediately to eliminate the potential for events that could require ~~FBACS~~ FBVS actuation.

~~D.1 and D.2~~

~~Condition D applies when the Required Action and associated Completion Time for Condition A or B have not been met and the unit is in MODE 1, 2, 3, or 4. The unit must be brought to a MODE in which the LCO requirements are not applicable. To achieve this status, the unit must be brought to MODE 3 within 6 hours and MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.~~

SURVEILLANCE REQUIREMENTS

A Note has been added to the SR Table to clarify that Table 3.3.8-1 determines which SRs apply to which ~~FBACS~~FHBVS Actuation Functions. DC 3.3-E01

~~Notes have been added that clarify which functions will be associated with which monitors when the new radiation monitors RM-45A and 45B are installed.~~

SR 3.3.8.1

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

(continued)

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: Q 3.4.11-2 **APPLICABILITY:** CA, DC, WC

REQUEST:

Change 4-08 LS 34 and Difference 3.4-35

Comment: WOG-60 has not yet become a TSTF.

FLOG RESPONSE (original): WOG-60 has been approved by the TSTF and is designated as TSTF-288. This traveler has been submitted to the NRC and is under review. The proposed wording in TSTF-288 was modified from WOG-60, Rev. 1, and these modifications have been incorporated into the ITS (editorial SR Bases Note change). The FLOG continues to pursue the changes proposed by this traveler.

FLOG RESPONSE (revised): Wolf Creek, Callaway and Diablo Canyon are withdrawing the changes proposed by the traveler since the NRC will not approve TSTF-288 to support the issuance of amendments for other plants. We disagree with the compromise wording provided by the NRC. We believe that adopting the compromised wording would raise an unresolved implementation issue on when the SRs must be performed in MODE 3. Wolf Creek, Callaway and Diablo Canyon will adopt CTS requirements.

In a related change regarding a similar Note, Callaway and Diablo Canyon have revised the Bases to SR 3.4.16.2 to reflect the correct interpretation of the Note to that SR. WCGS made similar Bases changes in their original conversion submittal.

FLOG RESPONSE (Supplement): This supplement includes a revised Bases page markup providing a discussion of the Note added to SR 3.4.11.2 but not included in follow-up letter, DCL 99-034, dated March 10, 1999. The wording of the Note to SR 3.4.11.2 is revised to more clearly reflect the CTS.

ATTACHED PAGES:

Encl. 5A	3.4-26
Encl. 5B	B 3.4-52

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.11.1	------------------NOTE------------------ ~~1.~~ Not required to be ~~met~~ performed with block valve closed in accordance with the ~~Required Action of Condition A B or E or~~ Required Actions ~~C.3 and F.4~~ of this LCO. ~~2. Only required to be performed in MODES 1 and 2.~~ -- Perform a complete cycle of each block valve.	Q 3.4.11-2 3.4-47 3.4-21 Q3.4.11-4 ~~3.4-35~~ 92 days Q 3.4.11-2 Q 3.4.11-2
SR 3.4.11.2	------------------NOTE------------------ ~~Only~~ Required to be performed ~~in~~ DURING MODES ~~1 and 2~~ 3 OR 4 -- Perform a complete cycle of each PORV.	3.4-56 3.4-35 ~~[18]~~ 24 DC-ALL-005 ~~months~~ B In accordance with the IST Plan WC3.4-007
SR 3.4.11.3	~~Perform a complete cycle of each solenoid air control valve and check valve on the air accumulators in PORV control systems.~~ Demonstrate OPERABILITY of the safety related nitrogen supply for the Class I PORVs.	~~[18] months~~ B PS ~~18~~ 24 months DC-ALL-005 3.4-26
SR 3.4.11.4	NOT USED ~~Verify PORVs and block valves are capable of being powered from emergency power sources.~~	~~[18] months~~ B

3.4.11-4

BASES (continued)

(Ref. 3). If the block valve is closed to isolate a PORV that is capable of being manually cycled, the OPERABILITY of the block valve is of importance, because opening the block valve is necessary to permit the PORV to be used for manual control of reactor pressure. If the block valve is closed to isolate an ~~otherwise~~ inoperable Class I PORV that is incapable of being manually cycled, the maximum Completion Time to restore the Class I PORV and open the block valve is 72 hours, which is well within the allowable limits (25%) to extend the block valve Frequency of 92 days. Furthermore, these test requirements would be completed by the reopening of a recently closed block valve upon restoration of the Class I PORV to OPERABLE status ~~(i.e., completion of the Required Actions fulfills the SR).~~ If the block valve for a non-Class 1 PORV has been closed by Required Action C.3 or F.4, it can remain closed without further requirements for restoration. The non-Class 1 PORV is not required for accident mitigation and the closed block valve provides protection against a spurious opening of the PORV.

3.4.11-2

~~This SR is modified by two notes,~~

STET

~~The~~ Note ~~1~~ modifies this SR by stating that it is not required to be performed ~~met~~ with the block valve closed, in accordance with the Required Action of ~~Condition A, B and E or Required Actions C.3 and F.4~~ ~~this LCO.~~

(remove strikeout

~~Note 2 modifies this SR to allow entry into and operation in MODE 3 prior to performing the SR. This allows the test to be performed in any MODE below MODE 2.~~

~~Insert A~~

Insert C

3.4.11-2

SR 3.4.11.2

3.4.11-4

SR 3.4.11.2 requires a complete cycle of each PORV. Operating a PORV through one complete cycle ensures that the PORV can be manually actuated for mitigation of an SGTR. ~~The Frequency of 18 months is based on a typical refueling cycle and industry accepted practice~~.

WC 3.4-007

~~The Note modifies this SR to allow entry into and operation in MODE 3 prior to performing the SR. This allows the surveillance to be performed in any MODE below MODE 2.~~

3 or 4

STET

3.4.11-2

~~Insert B~~

STET

SR 3.4.11.3

remove redline

3.4.GEN-1

Verifying OPERABILITY of the safety related nitrogen supply for the Class I PORVs may be accomplished by:

a. Isolating and venting the normal air supply, and

b. Verifying that any leakage of the Class I backup nitrogen system is within its limits, and

c. Operating the Class I PORVs through one complete cycle of full travel.

(Continued)

Operating experience has shown that these valves usually pass the surveillance when performed at the required Inservice Testing Program frequency. The frequency is acceptable from a reliability standpoint.

WC 3.4-007

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: DC 3.4-004 (new) **APPLICABILITY:** DC

REQUEST:

DCPP LA 129/127 was approved February 19, 1999. This Amendment is applicable only during DCPP Units 1 and 2, Cycles 10 and 11. This revision provides the CTS mark-ups showing this new material being relocated to the Steam Generator Tube Surveillance Program (ITS 5.5.9 and 5.6.10).

ATTACHED PAGES:

Encl. 2 3/4 4-11, 3/4 4-14, 3/4 4-15

~~Insert A~~

~~Note 2 modify this SR to allow entry into operation in Mode 3 prior to performing the SR. This allows the test to be performed in MODE 3 under operating temperature and pressure conditions, prior to entering MODE 1 or 2. In accordance with Reference 4, administrative controls require this test be performed in MODE 3 or 4 to adequately simulate operating temperature and pressure effects on PORV operation.~~

Q 3.4.11-2

~~Insert B~~

~~The Note modifies this SR to allow entry into and operation in MODE 3 prior to performing the SR. This allows the test to be performed in MODE 3 under operating temperature and pressure conditions, prior to entering MODE 1 or 2. In accordance with Reference 4, administrative controls require this test be performed in MODE 3 or 4 to adequately simulate operating temperature and pressure effects on PORV operation.~~

STET

Q 3.4.11-2

~~3/4 4.5 STEAM GENERATORS~~ 05-01-A

~~LIMITING CONDITION FOR OPERATION~~

~~3.4.5 Each steam generator shall be OPERABLE.~~ 05-02-A

~~APPLICABILITY: MODES 1, 2, 3 and 4. * #~~ DC 3.4-004

~~ACTION:~~

~~With one or more steam generators inoperable, restore the inoperable generator(s) to OPERABLE status prior to increasing T_{avg} above 200°F.~~

~~SURVEILLANCE REQUIREMENTS~~

4.4.5.0 ~~Each~~ Steam generator tube integrity ~~steam generator~~ shall be demonstrated ~~OPERABLE~~ by performance of the following augmented Inservice inspection program. ~~and the requirement of Specification 4.0.5.~~ 05-01-A

~~4.4.5.1 Steam Generator Sample Selection and Inspection - Each~~ Steam generator ~~tube integrity shall be determined OPERABLE during shutdown by selecting and inspecting at least the minimum number of steam generators specified in Table 4.4-1.~~ 05-01-A

05-02-A

~~4.4.5.2 Steam Generator Tube Sample Selection and Inspection - The steam generator tube minimum sample size, inspection result classification, and the corresponding action required shall be as specified in Table 5.5.9-2 4.4-2The Inservice inspection of steam generator tubes shall be performed at the frequencies specified in Specification 5.5.9.c 4.4.5.3 and the inspected tubes shall be verified acceptable per the acceptance criteria of Specification 5.5.9d 4.4.5.4. The tubes selected for each Inservice inspection shall include at least 3% of the total number of tubes in all steam generators; the tubes selected for these inspections shall be selected on a random basis except:~~ 05-01-A

~~a. Where experience in similar plants with similar water chemistry indicates critical areas to be inspected, then at least 50% of the tubes inspected shall be from these critical areas.~~

~~b. The first sample of tubes selected for each Inservice inspection (subsequent to the preservice inspection) of each steam generator shall include:~~

~~1) All nonplugged tubes that previously had detectable wall penetrations (greater than 20%).~~

~~2) Tubes in those areas where experience has indicated potential problems.~~ ~~and~~ DC 3.4-004

~~3) A tube inspection (pursuant to Specification 4.4.5.4a.8) shall be performed on each selected tube. If any selected tube does not permit the passage of the eddy current probe for a tube inspection, this shall be recorded and an adjacent tube shall be selected and subjected to a tube inspection.~~ ; 05-01-A

INSERT 5)

~~4) Indications left in service as a result of application of the tube support plate voltage-based repair criteria shall be inspected by bobbin coil probe during all future refueling outages.~~ DC 3.4-003

~~* Amendment Nos 129 and 127 applicable for Units 1 and 2, Cycles 10 and 11 only~~
~~# In situ testing will be performed in accordance with PG&E Letter DCL 98-148 dated October 22, 1998.~~ 05-01-A

INSERT 5)

05-01-A

~~5) Tubes identified as W* tubes having a previously identified indication within the W* length shall be inspected using a rotating pancake coil (RPC) probe for the full length of the W* region during all future refueling outages.~~

DC 3.4-004

~~4.4.5.4 Acceptance Criteria~~

~~a. As used in this Specification:~~

~~1) Imperfection means an exception to the dimensions, finish or contour of a tube from that required by fabrication drawings or specifications. Eddy-current testing indications below 20% of the nominal tube wall thickness, if detectable, may be considered as imperfections;~~

~~2) Degradation means a service-induced cracking, wastage, wear or general corrosion occurring on either inside or outside of a tube;~~

~~3) Degraded Tube means a tube containing imperfections greater than or equal to 20% of the nominal wall thickness caused by degradation;~~

~~4) % Degradation means the percentage of the tube wall thickness affected or removed by degradation;~~

~~5) Defect means an imperfection of such severity that it exceeds the plugging limit. A tube containing a defect is defective;~~

~~6) Plugging Limit means the imperfection depth at or beyond which the tube shall be removed from service and is equal to 40% of the nominal tube wall thickness;~~

~~7) Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of a Double Design Earthquake, a loss-of-coolant accident, or a steam line or feedwater line break as specified in 4.4.5.3c., above;~~

8) ~~Tube Inspection means an inspection of the steam generator tube from the point of entry~~ tube end ~~(hot leg side) completely around the U-bend to the top support of the cold leg; and~~ 05-03-A

~~9) Preservice Inspection means an inspection of the full length of each tube in each steam generator performed by eddy current techniques prior to service to establish a baseline condition of the tubing. This inspection shall be performed after the field hydrostatic test and prior to initial POWER OPERATION using the equipment and techniques expected to be used during subsequent Inservice inspections.~~

INSERT A & B

~~b. The steam generator~~ tube integrity ~~shall be determined OPERABLE after completing the corresponding actions (plug all tubes exceeding the plugging limit and all tubes containing through-wall cracks) required by Table 4.4-2.~~ 05-01-A 05-02-A

a) ~~This definition does not apply to tube support plate intersections for which the voltage-based repair criteria are being applied. Refer to 4.4.5.4a.10) for the repair limit applicable to these intersections.~~ 05-01-A DC 3.4-003

~~b) This definition does not apply to the portion of the tube within the tubesheet below the W* length. Acceptable tube wall degradation within the W* length shall be defined as in Specification 4.4.5.4a.11).~~ 05-01-A DC 3.4-004

INSERT B

DC 3.4-003

05-01-A

~~If an unscheduled mid-cycle inspection is performed, the following mid-cycl repair limits apply instead of the limits identified in 4.4.5.4a.10)a, 4.4.5.4a.10)b, and 4.4.5.4a.10)c. The mid-cycle repair limits are determined from the following equations:~~

$$\cancel{V_{MURL} = \frac{V_{SL}}{1.0 + NDE + Gr\frac{(CL - \Delta t)}{CL}}}$$

$$\cancel{V_{MLRL} = V_{MURL} - (V_{URL} - V_{LRL})\frac{(CL - \Delta t)}{CL}}$$

~~where:~~

~~V_{URL} = upper voltage repair limit~~

~~V_{LRL} = lower voltage repair limit~~

~~V_{MURL} = mid-cycle upper voltage repair limit based on time into cycle~~

~~V_{MLRL} = mid-cycle lower voltage repair limit based on V_{MURL} and time into cycle~~

~~Δt = length of time since last scheduled inspection during which V_{URL} and V_{LRL} were implemented~~

~~CL = cycle length (the time between two scheduled steam generator inspections)~~

~~VSL = structural limit voltage~~

~~Gr = average growth rate per cycle length~~

~~NDE = 95% cumulative probability allowance for nondestructive examination uncertainty (i.e., a value of 20% has been approved by the NRC)~~

~~Implementation of these mid-cycle repair limits should follow the same approach as in TS 4.4.5.4a.10)a, 4.4.5.4a.10)b, and 4.4.5.4a.10)c.~~

~~NOTE 1: The lower voltage repair limit is 2.0 volts for 7/8 inch diameter tubing at DCPP Units 1 and 2.~~

~~NOTE 2: The upper voltage repair limit is calculated~~ according to the ~~methodology in Generic Letter 95-05 as supplemented.~~

INSERT 11)

INSERT 11) (1 OF 2)

DC 3.4-004
05-01-A

~~11) W* Plugging Limit is used for disposition of an alloy 600 steam generator tube for continued service that is experiencing predominately axially oriented inside diameter stress corrosion cracking confined within the tubesheet, below the bottom of the WEXTEX transition (BWT). As used in this specification:~~

~~a. Bottom of WEXTEX Transition (BWT) is the highest point of contact between the tube and tubesheet at, or below the top-of-tubesheet as determined by eddy current testing.~~

~~b. W* Length is the distance to the tubesheet below the BWT that precludes tube pull out in the event of a complete circumferential separation of the tube below the W* length. The W* length is conservatively set at: 1) an undegraded hot leg tube length of 5.2 inches for Zone A tubes and 7.0 inches for Zone B tubes, and 2) an undegraded cold leg tube length of 5.5 inches for Zone A tubes and 7.5 inches for Zone B tubes. Information provided in WCAP-14797, Revision 1, defines the boundaries of Zone A and Zone B.~~

~~c. Flexible W* Length is the W* length adjusted for any cracks found within the W* region. The Flexible W* Length is the total RPC inspected length as measured downward from the BWT, and includes NDE uncertainties and crack lengths within W* as adjusted for growth.~~

~~d. W* Tube is a tube with equal to or greater than 40% degradation within or below the W* length that is left in service, and degraded within the limits specified in Specification 4.4.5.4a.11)e.~~

~~e. Within the tubesheet, the plugging (repair) limit is based on maintaining steam generator serviceability as described below:~~

~~1. For tubes to which the W* criteria are applied, the length of non-degraded tube below BWT shall be greater than or equal to the W* length plus NDE uncertainties and crack growth for the operating cycle.~~

~~2. Axial cracks in tubes returned to service using W* shall have the upper crack tip below the BWT by at least the NDE measurement uncertainty, and below the TTS by at least the NDE measurement uncertainty and crack growth allowance, such that at the end of the subsequent operating cycle the entire crack remains below the tubesheet secondary face.~~

~~3. Resolvable, single axial indications (multiple indications must return to the null point between individual cracks) within the flexible W* length can be left in service. Alternate RPC coils or an ultrasonic test (UT) inspection can be used to demonstrate return to null point between multiple axial indications or the absence of circumferential involvement between axial indications.~~

INSERT 11) (2 of 2)

DC 3.4-004

05-01-A

~~4. Tubes with inclined axial indications less than 2.0 inches long (including the crack growth allowance) having inclination angles relative to the tubve axis of <45 degrees minus the NDE uncertainty, ΔNDE_{CA}, on the measurement of the crack angle can be left in service. Tubes with two or more parallel (overlapping elevation), inclined axial cracks shall be plugged or repaired. For application of the 2.0 inch limit, an inclined indication is an axial crack that is visually inclined on the RPC C-scan, such that an angular measurement is required, and the measured angle exceeds the measurement uncertainty of ΔNDE_{CA}.~~

~~5. Circumferential, volumetric, and axial indications with inclination angles greater than (45 degrees – ΔNDE_{CA}) within the flexible W* length shall be plugged or repaired.~~

~~6. Any type of combination of the tube degradation below the W* length is acceptable.~~

~~SURVEILLANCE REQUIREMENTS (continued)~~

~~4.4.5.5 Reports~~

~~a. Within 15 days following the completion of each Inservice inspection of steam generator tubes, the number of tubes plugged in each steam generator shall be reported to the Commission in a Special Report pursuant to Specification 6.9.2.~~

~~b. The complete results of the steam generator tube Inservice inspection shall be submitted to the Commission in a Special Report pursuant to Specification 6.9.2 within 12 months following completion of the inspection. This Special Report shall include:~~

~~1) Number and extent of tubes inspected,~~

~~2) Location and percent of wall thickness penetration for each indication of an imperfection, and~~

~~3) Identification of tubes plugged.~~

~~c. Results of steam generator tube inspections, which fall into Category C-3, shall be reported in a Special Report to the Commission pursuant to Specification 6.9.2 within 30 days and prior to resumption of plant operation. This report shall provide a description of investigations conducted to determine cause of the tube degradation and corrective measures taken to prevent recurrence.~~ DC 3.4-003

05-01-A

~~d. For implementation of the voltage-based repair criteria to tube support plate intersections, notify the NRC prior to returning the steam generators to service should any of the following conditions arise:~~ DC 3.4-004

~~Reduced by estimated leakage by all other alternate repair criteria~~

~~1) If estimated leakage based on the projected end-of-cycle (or if not practical, using the actual measured end-of-cycle) voltage distribution exceeds the leak limit determined from the licensing basis dose calculation for the postulated main steamline break for the next operating cycle.~~

~~2) If circumferential crack-like indications are detected at the tube support plate intersections.~~

~~3) If indications are identified that extend beyond the confines of the tube support plate.~~

~~4) If indications are identified at the tube support plate elevations that are attributable to primary water stress corrosion cracking.~~

~~5) If the calculated conditional burst probability based on the projected end-of-cycle (or if not practical, using the actual measured end-of-cycle) voltage distribution exceeds 1×10^{-2}, notify the NRC and provide an assessment of the safety significance of the occurrence.~~

INSERT e and f.

INSERT e AND f

DC 3.4-004

05-01-A

~~e. The results of the inspection of W* tubes shall be reported to the Commission pursuant to Specification 6.9.2 within 90 days following return to service of the steam generators. This report shall include:~~

~~1) Identification of W* tubes.~~

~~2) W* inspection distance measured with respect to the BWT or the top of the tubesheet, whichever is lower.~~

~~3) Elevation and length of axial indications within the flexible W* distance and the angle of inclination of clearly skewed axial cracks (if applicable).~~

~~4) The total steam line break leakage for the limiting steam generator per WCAP-14797.~~

~~f. The aggregate calculated steam line break leakage from application of all alternate repair criteria shall be reported to the Commission pursuant to Specification 6.9.2 within 90 days following return to service of the steam generators.~~

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: DC 3.4-ED1 (new) **APPLICABILITY:** DC

REQUEST: Various changes have been identified that do not impact the technical content of the submittal or other FLOG members. Changes are noted with DC 3.4-ED1 in the margin and noted below:

1. Remove unnecessary text added but not used from Bases of LCO 3.4.11, Condition D mark-up.

2. Remove the strike-out to restore "and to MODE 4 within 12 hours." To second sentence of LCO 3.4.11 Condition G Bases.

3. Add "6." to end of last sentence of Applicability Bases of LCO 3.4.15.

ATTACHED PAGES:

Encl. 5B B 3.4-50, B 3.4-51, B 3.4-82

BASES (continued)

Restoration of the non-class I PORV block valve to OPERABLE status is not required because the non-Class I PORV is not required to be available although having the valve closed impairs the load rejection design capability. Therefore, once the block vave has been closed per Required Action C.3, Completion Time requirements of Condition D do not apply.

If the block valve can not be placed in the closed position per Required Action C.3, Condition D applies and the unit must be taken to MODE 3 with Tavg less than 500°F until the block valve is restored or closed.

Insert A

MODE 4

Q3.4.11-4

ACTIONS (continued)

Q 3.4.11-3

Q3.4.GEN-1

D.1, D.2 and D.3

STET

DC 3.4-ED1

If the Required Action of Condition A, B, or C is not met, then the plant must be brought to a ~~MODE in which the LCO does not apply~~ condition below where the function of the PORVs to mitigate a SGTR event is needed. To achieve this status, the plant must be brought to at least MODE 3 with Tavg ≤ 500°F within 6 hours ~~and to MODE 4 within 12 hours~~. Additional action is required to be initiated immediately to continue efforts to restore the inoperable valve(s) to OPERABLE status. This action will ensure expedient measures are taken to reestablish OPERABLE PORVs and block valves while maintaining plant conditions above MODE 4 but less than 500°F. 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. In MODES 4, ~~and~~ 5, and 6 with the reactor vessel head closure bolts not fully de-tensioned, maintaining Class I PORV OPERABILITY ~~may be~~ is required by ~~See~~ LCO 3.4.12.

Q 3.4.11-3

E.1, E.2, E.3, E.4 and E.5

Q 3.4.11-3

Q3.4.GEN-1

If more than one Class I PORV is inoperable and not capable of being manually cycled, it is necessary to immediately initiate action to restore the valves ~~either restore at least one valve~~ and to, within the Completion Time of 1 hour, ~~or~~ isolate the flow path by closing and removing the power to the associated block valves. The Completion Time of 1 hour is reasonable, based on the small potential for challenges to the system during this time and provides the operator time to correct the situation. If one Class I PORV is restored and one Class I PORV remains inoperable, then the plant will be in Condition B with the time clock started at the original declaration of having two ~~[or three]~~ Class I PORVs inoperable. If no Class I PORVs are restored within the Completion Time, then the plant must be brought to ~~a MODE in which the LCO does not apply~~ a condition below where the function of the PORVs to mitigate a SGTR event is not needed. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and reduce Tavg to ≤ 500°F ~~to MODE 4~~ within 12 hours.

STET

Q3.4.11-3

Q3.4.GEN-1

Q3.4.11-3

Additional action is required to be initiated immediately to continue efforts to restore the inoperable valve(s) to OPERABLE status. This action will ensure expedient measures are taken to reestablish OPERABLE PORVs and block valves while maintaining plant conditions above MODE 4 but less than 500°F. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly

(Continued)

BASES (continued)

ACTIONS (continued)

manner and without challenging plant systems. In MODES 4, ~~and~~ 5, and 6 with the reactor vessel head closure bolts not fully de-tensioned, maintaining Class I PORV OPERABILITY ~~may be~~ is required by ~~See~~ LCO 3.4.12.

redline Q3.4.GEN-1

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

If more than one PORV block valve is inoperable, it is necessary to either restore the block valves within the Completion Time of 1 hour, or place the associated PORVs in manual control and restore at least one block valve within 2 hours ~~[~~ and restore the remaining block valve within 72 hours ~~]~~. The PORV control switch has three positions: open, close and auto. Placing the PORV in manual control, if required in ACTION F, is accomplished by positioning the switch out of the auto control mode. The Completion Times are reasonable, based on the small potential for challenges to the system during this time and provide the operator time to correct the situation.

If the inoperable block valve is associated with the non-Class 1 PORV, the block valve may be closed and the power removed. The 72 hour Completion Time for closing the block valve is the same used in Required Action F.3. This recognizes that some restoration work may be required since the block valve is inoperable. Restoration of the non-class 1 PORV block valve to OPERABLE status is not required because the non-Class I PORV is not required to be available, although having the valve closed impairs the load rejection design capability. Therefore, once the block valve has been closed per Required Action F.4, Completion Time requirements of Condition G do not apply.

If the block valve can not be placed in the closed position per Required Action F.4, Condition G applies and the unit must be taken to MODE 3 with Tavg less than 500°F until the block valve is restored or closed. Q3.4.11-4

Insert A

G.1, ~~and~~ G.2 and G.3 redline Q3.4.11-3 DC 3.4-ED1 Q3.4.GEN-1

STET STET STET

If the Required Actions of Condition F are not met, then the plant must be brought to a ~~MODE in which the LCO does not apply~~ condition below where the function of the PORVs to mitigate a SGTR event is not needed. To achieve this status, the plant must be brought to at least MODE 3 with Tavg ≤ 500°F within 6 hours ~~and to MODE 4 within 12 hours~~. Additional action is required to be initiated immediately to continue efforts to restore the inoperable valves(s) to OPERABLE status. This action will ensure expedient measures are taken to reestablish OPERABLE PORVs and block valves while maintaining plant conditions above MODE 4 but less than 500°F. 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. In MODES 4, ~~and~~ 5, ~~maintaining PORV OPERABILITY may be required. See LCO 3.4.12.~~ and 6 with the reactor vessel head closure bolts not fully de-tensioned, maintaining Class I PORV OPERABILITY is required by LCO 3.4.12

Q3.4.11-3

Q3.4.11-3

SURVEILLANCE REQUIREMENTS

SR 3.4.11.1

Block valve cycling verifies that the valve(s) can be closed if needed. The basis for the Frequency of 92 days is the ASME ~~Code, Section XI~~ O & M Code, Part 10

(Continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

in the FSAR (Ref. 3). ~~Multiple instrument locations are utilized, if needed, to ensure that the transport delay time of the leakage from its source to an instrument location yields an acceptable overall response time.~~

The safety significance of RCS LEAKAGE varies widely depending on its source, rate, and duration. Therefore, detecting and monitoring RCS LEAKAGE into the containment area is necessary.

Quickly separating the identified LEAKAGE from the unidentified LEAKAGE provides quantitative information to the operators, allowing them to take corrective action should a leak~~age~~ occur that could be detrimental to the safety of the unit and the public.

RCS leakage detection instrumentation satisfies Criterion 1 of ~~the NRC Policy Statement~~. 10 CFR 50.36 (c) (2) (ii).

LCO

One method of protecting against large RCS LEAKAGE derives from the ability of instruments to rapidly detect extremely small leaks. This LCO requires instruments of diverse monitoring principles to be OPERABLE to provide a high degree of confidence that extremely small leaks are detected in time to allow actions to place the plant in a safe condition when RCS LEAKAGE indicates possible RCPB degradation.

The LCO is satisfied when monitors of diverse measurement means are available. Thus, the containment sump monitoring systems, ~~in combination with a gaseous or~~ the particulate radioactivity monitor and either a CFCU condensate collection monitor or a gaseous radioactivity monitor provide~~s~~ an acceptable minimum

APPLICABILITY

Because of elevated RCS temperature and pressure in MODES 1, 2, 3, and 4, RCS leakage detection instrumentation is required to be OPERABLE. In MODE 5 or 6, the temperature is to be ≤ 200°F and pressure is maintained low or at atmospheric pressure. Since the temperatures and pressures are far lower than those for MODES 1, 2, 3, and 4, the likelihood of leakage and crack propagation are much smaller. Therefore, the requirements of this LCO are not applicable in MODES 5 and 6.

DC 3.4-ED1

ACTIONS

ACTIONS are modified by a Note that indicates that the provisions of LCO 3.0.4 are not applicable. As a result, a MODE change is allowed when the required containment sump monitor, the required atmospheric particulate monitor, the required atmospheric gaseous monitor or the required CFCU condensate collection monitor are inoperable. This allowance is provided because other instrumentation is available to monitor RCS LEAKAGE.

(Continued)

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: Q 3.6.3-10 **APPLICABILITY:** DC, WC, CA

REQUEST:

DOC 11-11 A
JFD 3.6-3
CTS 3.6.3
STS LCO 3.6.3
ITS LCO 3.6.3 Note and Associated Bases

ITS LCO 3.6.3 contains a Note not contained in CTS 3.6.3 or STS LCO 3.6.3. This Note states that ITS LCO 3.6.3 is not applicable to the Main Steam Safety Valves (MSSVs), Main Steam Isolation Valves (MSIVs) Main Feedwater Isolation Valves (MFIVs), Main Feedwater Regulation Valves (MFRVs), their associated bypass valves, and Atmospheric Steam Dump, Relief or Dump Valves. The justifications for adding this Note (DOC 11-11 A and JFD 3.6-3) state that it is consistent with current licensing basis, the valves are not considered containment isolation valves, and that they have separate ITS LCOs that provide appropriate required actions in the event these valves are inoperable. Nothing in the CTS states or implies that these valves are exempt from this LCO. Furthermore, the staff considers these valves to be containment isolation valves. In addition, the proposed change was submitted to the staff as a generic change to the STS (TSTF-44) and was rejected. The staff considers this change to be a generic change that is beyond the scope of review for this conversion. See Comment Number 3.6.3-24.

Comment: Delete this generic change.

FLOG RESPONSE (original): Diablo Canyon, Callaway, and Wolf Creek desire to continue to pursue this change. The justification in DOC 11-11-A and JFD 3.6-3 has been modified to state: "A Note is added to the containment isolation specification that the LCO is not applicable to main steam safety valves (MSSVs), main steam isolation valves (MSIVs), main feedwater isolation valves (MFIVs), and [atmospheric dump valves (ADVs)]. The current licensing basis for these valves exempts them from playing a role in establishing or maintaining containment integrity. This is based upon 10 CFR 50.36.c.2 and 3 and 10 CFR 50, Appendix J. There are no surveillances associated with LCO 3.6.1.1 or LCO 3.6.3 which are applicable to these valves.[ ] This Note is consistent with current licensing basis." The application of LCO 3.6.3 to these valves (MSSVs, MFIVs, ADVs (DCPP), ASDVs (CA), ARVs (WC), etc.) would result in two similar LCOs being applicable to the same equipment yet having different ACTION times. The role of ITS LCOs 3.6.1, 3.6.2, and 3.6.3 are to establish containment leak tight integrity through the Containment Leak Rate Program and then maintain it during plant operation. These valves are more complex and have safety functions which require them to be open while containment integrity is established. The isolation function would be required as a result of conditions different from those generally requiring containment isolation. The applicable ITS 3.7 LCOs recognize these

conditions and provide appropriate actions. These LCOs require valve operability and provide ACTIONS similar to containment isolation but more conservative for an inoperable valve. An inoperable MSSV (normal operable condition is closed) under ITS LCO 3.7.1 would require restoration or a power reduction within 4 hours (valve fails to open). An inoperable MSIV under ITS 3.7.2 would require restoration within 8 hours for DCPP and 72 hours for WC and CA or close the valve (in MODE 2) and then proceed to MODE 4. An inoperable MFIV under ITS 3.7.3 would require closure within 72 hours for DCPP and 4 hours for WC and CA and verification every 7 days or the plant would proceed to MODE 4. An inoperable ADV (DCPP), ASDV (CA), or ARV (WC) (normal operable condition is closed) under ITS 3.7.4 would require restoration within 7 days (failure to open). The most conservative applicable operational requirements are found in the associated ITS 3.7 LCO.

DCPP Specific Discussion:

The only CIV requirements that are applicable relate to their design and installation such that they are closed or capable of being closed as required by GDC 57. The ITS LCO 3.6.3 Bases is revised under the discussion concerning the Note to state: "The Containment isolation function of these valves is associated with their design and installation under GDC 57 as a second boundary in a closed system (passive) when the containment environment has potential direct access to the outside environment. The containment isolation valves have no role in establishing or maintaining containment integrity unless the closed system boundary has been breached." The containment isolation function is assured as long as the CIVs are OPERABLE. OPERABILITY is required (both opening and closing) under their respective ITS 3.7 LCOs in Modes 1, 2, and 3. In MODE 4, these valves are normally closed. The STS 3.7 applicable Bases Sections cite low energy levels and the general lack of credible transients that may challenge this boundary which is, at that point, operating well below its design capabilities. While a release of radioactive material to containment is possible in MODE 4, the passive type A leak.tested boundary of the closed system is adequate. MODE 4 releases of radioactive materials are more applicable to maintenance of containment integrity for systems with direct contact with the RCS or containment environment. The added Note provides this clarification to aid Operations personnel in understanding the licensing requirements. This discussion is consistent with the following: (1) SER 0, 10/16/74 (states design is consistent with GDC-57), (2) LA 73/72 (relocates containment isolation valve list outside of the TS), (3) FSAR Table 6.2-39 (Notes that these valves have a safety function to be open in a DBA and that they are exempt from Type C leak Testing), (4) Containment Leak Rate Program: Type A, B, and C testing, and (5) IST Plan. The Main Feedwater Regulation Valves (MFRVs) and associated bypass valves should not be included in the Note added to ITS LCO 3.6.3. They are not under GDC-57 and are not associated with containment isolation.

Enclosed is the following plant-specific documentation to support the above discussion:

FSAR Table 6.2-39
SER 0, 10/16/74
LA 73/72

FLOG RESPONSE (supplement 1): For WCGS and Callaway, further review has determined that the licensing basis for MSIVs, MFIVs, MSSVs, and ARVs/ASDs is provided in the SAR. This note is deleted. Callaway is adding an additional reference to B 3.6.3 LCO to the containment isolation valve table.

For Diablo Canyon, the LCO note in ITS 3.6.3 has been removed; however, the Bases discussion regarding the MSSVs, MSIVs, MFIVs, and ADVs remains. The following discussion is provided to address NRC staff questions during the October 13-14, 1998, meeting relative to containment isolation valves.

The ITS LCO 3.6.3 Bases is revised with a note stating that this LCO does not apply to the MSSVs, MSIVs, MFIVs, and ADVs. These valves currently have an additional but similar LCO providing generally equal or more conservative ACTIONS. This change would leave a single LCO for each group of valves that would assure the required safety functions. Each of the effected valves is a GDC-57 containment isolation valve associated with a closed system in containment. LCO 3.6.3 ACTION C provides the only applicable ACTION other than a unit shut down for failure to meet ACTION C. LCO 3.6.3 provides no applicable surveillances to assure OPERABILITY for any of these valves. The function of these valves is more complex than this since they have safety functions that require them to be open while containment integrity is established. The applicable ITS 3.7 LCOs recognize these conditions and provide appropriate ACTIONs and SURVEILLANCES for the required open functions as well as isolation. The following Table provides a comparison of the applicable ITS 3.7 LCOs to LCO 3.6.3, ACTION C:

LCO	MODES	Normal Position	Safety Function	ACTIONS
LCO 3.6.3, ACTION C	1 - 4	N/A	Provide GDC-57 closure to assure containment integrity following failure of the closed system in containment.	Close within 72 hours. Verify every 31 days
LCO 3.7.1, (MSSVs)	1 - 3	Closed to assure pressure boundary	Open to provide overpressure protection of the secondary side then re-close.	One unable to open upon demand – immediately reduce power
LCO 3.7.2, (MSIVs)	1 - 3	Open	Close to isolate the steam generator during HELB, Feedwater line break or SGTR	Restore or close within 8 hours. Verify every 7 days.
LVO 3.7.3, (MFIVs)	1 - 3	Open	Close to isolate the secondary plant from the steam generator.	Close within 72 hours. Verify every 7 days
LCO 3.7.4, (ADVs)	1 –3, & 4(*)	Closed to assure pressure	Open to provide energy removal when the RHR is not available then re-close.	Restore all valves in 7 days, (assure 2 operable within

		boundary		24 hours, assure 3 are operable within 72 hours).

(*) Required in MODE 4 if steam generators relied on for heat removal.

None of these valves are associated with piping systems providing direct communications between the containment atmosphere or the RCS and the outside atmosphere. There is no credible transient that would challenge the integrity of the closed system within containment or require any of these valves to operate in MODE 4, 5 or 6 other then the ADVs. Steam generator energy levels are low in MODES 4, 5,and 6.

In summary, the action statement provided for these valves outside of ITS 3.6.3 provide assurance that both the containment integrity (closed) function and process (open) functions are maintained.

FLOG RESPONSE (supplement 2): DCPP has removed the discussion concerning the LCOs in ITS 3.7 for the MSSVs, MSIVs, MFIVs, and ADVs from the Bases of LCO 3.6.3.

ATTACHED PAGES:
Encl. 5B B 3.6-15

BASES (Continued)

LCO

Containment isolation valves form a part of the containment boundary. The containment isolation valves' safety function is related to minimizing the loss of reactor coolant inventory and establishing the containment boundary during a DBA. The automatic power operated isolation valves are required to have isolation times within limits and to actuate on an automatic isolation signal. The 48 inch Containment Purge supply and exhaust ~~and 12 inch Hydrogen Purge~~ valves and the Pressure/Vacuum Relief valves must ~~be maintained sealed closed [or~~ have blocks installed to prevent full opening~~]~~. ~~[~~ These blocked ~~purge~~ valves also actuate on an automatic isolation signal. ~~]~~ The valves covered by this LCO are listed along with their associated stroke times in ~~the FSAR Technical Requirements Manual~~ Plant Procedure AD13.DC1 ~~Attachment 7.18~~ (Ref. ~~2~~ 5). DC 36-ED

~~The~~ Normally closed passive containment isolation valves/devices are considered OPERABLE when manual valves are closed, automatic valves are de-activated and secured in their closed position, blind flanges are in place, and closed systems are intact. ~~These passive isolation valves/devices are those listed in Reference 1.~~ 5. remove strike-out Q3.6.3-42

Containment Purge supply and exhaust valves, ~~Hydrogen Purge,~~ and Containment Pressure/Vacuum Relief valves with resilient seals ~~[and secondary containment bypass valves]~~ must meet additional leakage rate surveillance frequency requirements. The other containment isolation valve leakage rates are addressed by LCO 3.6.1, "Containment," ~~as Type C testing~~. Q3.6.3-43

retain strike-out

This LCO provides assurance that the containment isolation valves ~~and the Containment Purge supply and exhaust, [Hydrogen Purge,] and Containment Pressure/Vacuum Relief purge valves~~ will perform their designed safety function to minimize the loss of reactor coolant inventory and establish the containment boundary during accidents. remove strike-out

~~The LCO is modified by a Note stating that~~ ~~The Main Steam Safety Valves, Main Steam Isolation Valves, Feedwater Isolation Valves, and Atmospheric Dump Valves are not addressed in this LCO. These penetration flow paths credit the steam generators and piping inside containment as a containment isolation barrier (i.e., closed system). These valves are addressed by LCO 3.7.1, "Main Steam Safety Valves (MSSVs)", LCO 3.7.2 "Main Steam Isolation Valves (MSIVs)", LCO 3.7.3 "Main Feedwater Isolation Valves (MFIVs) ~~Main Feedwater Regulating Valves (MFRVs) and Associated Bypass Valves~~," and LCO 3.7.4 "Atmospheric Dump Valves (ADVs)," which provide the appropriate Required Actions in the event these valves are inoperable.~~ Insert Q3.6.3-10

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES.

(Continued)

Q 3.6.3-10

~~Encl 3A - page 11, insert for DOC 11-11-A:~~

~~A Note is added to the containment isolation specification that the LCO is not applicable to main steam safety valves (MSSVs), main steam isolation valves (MSIVs), main feedwater isolation valves (MFIVs), and [atmospheric dump valves (ADVs)]. This is based upon 10CFR50.36.c.2 and 3 and 10CFR50, Appendix J. There are no surveillances associated with LCO 3.6.1.1 or LCO 3.6.3 which are applicable to these valves. [ ] This Note is consistent with current licensing basis.~~

~~Encl 5B, page B3.6-15, insert:~~

~~The Containment isolation function of these valves are associated with their design and installation under GDC 57 as a second boundary in a closed system (passive) when the containment environment has potential direct access to the outside environment. They have no role in establishing or maintaining containment integrity unless the closed system boundary has been breached.~~

~~Encl 6A - page 1, insert JFD 3.6-3:~~

~~The current license bases exempts these valves from containment integrity requirements. This is based upon 10CFR50.36.c.2 and 3 and 10CFR50, Appendix J. There are no surveillances associated with LCO 3.6.1.1 or LCO 3.6.3 which are applicable to these valves. [ ]~~

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: Q 3.6.3-39 **APPLICABILITY:** DC

REQUEST:

ITS SR 3.6.3.10 and Associated Bases

DCPP ITS SR 3.6.3.10 verifies that each 12 inch containment vacuum/pressure relief valve is blocked to restrict the valve from opening >50 to ensure that the valves will close within the times assumed in the safety analyses. DCPP ITS B3.6.3 Bases- BACKGROUND states the following for the Containment Purge System: "The 48 inch Containment Purge valves are qualified for automatic closure from their open position under DBA conditions. Therefore, the 48 inch Containment Purge supply and exhaust isolation valves must be blocked to prevent opening more than 80 in MODES 1, 2, 3 and 4 to ensure closure within 2 seconds under DBA conditions (in order to support the required containment ventilation isolation time) and to ensure that the containment boundary is maintained." Based on this statement and a similar statement in ITS B3.6.3 Bases - LCO, the staff requires that a surveillance similar to ITS SR 3.6.3.10 for the 48 inch containment purge valves be included in the ITS to ensure that facility operation will be within safety limits.

Comment: Revise the CTS/ITS markup to include a SR similar to ITS SR 3.6.3.10 for the 48 inch containment purge valves, and provide the appropriate discussions and justifications for this change.

FLOG RESPONSE: The bases for the current license come from SSER 9, para. 6.2.3 (June 1980) which required a 50° block on the 12 inch vacuum/pressure relief valves. No requirement for the 80° block has ever been present in the DCPP license. The 80° limit is an administrative limit resulting from the actual value used in the design calculations and was added to the ITS Bases to better describe the system for operations personnel. It does not represent a licensing basis, and therefore the ITS LCO 3.6.3 Bases, BACKGROUND for the Containment Purge System (48 inch purge valves), has been revised to delete the 80° limit .

FLOG RESPONSE (Supplement): Based upon conversations with the NRC on March 11, 1999, PG&E has placed an insert in the Bases concerning the 80 degree block on the Containment Purge supply and Exhaust valves. This insert reads:

The Containment Purge Supply and Exhaust Isolation valves are supplied with an internal block which prevents opening the valve beyond 80 degrees. Guidance for this block was provided by the manufacture in case it became necessary during the valve's qualification to Branch Technical Position CSB 6-4. Calculations subsequently showed the block to be unnecessary to assure closure time within 2 seconds under DBA conditions (SSER 9, June 1980 and Calculation M-661). The block is also not necessary to assure the valves ability to close due to excessive opening. This design assures that ...

ATTACHED PAGES:

Encl. 5B B 3.6-12

BASES

INSERT

BACKGROUND (continued)

personnel access. The supply and exhaust lines each contain two isolation valves. ~~Because of their large size, t~~ The 48 inch Containment Purge valves ~~in some units~~ are ~~not~~ qualified for automatic closure from their open position under DBA conditions. ~~Therefore,~~ the 48 inch Containment Purge supply and exhaust isolation valves ~~are normally maintained closed must be blocked to prevent opening more than 80°~~ in MODES 1, 2, 3, and 4. to ensure ~~closure within 2 seconds under DBA conditions (in order to support the required containment ventilation isolation time) and to ensure that the~~ containment boundary is maintained. These valves may be opened as necessary to:

STET

03.6.3-39

a. Reduce noble gases within containment prior to and during personnel access, and

b. Mitigate the effects of controller leakage and other sources which may effect the habitability of the containment for personnel entry.

Operation in MODES 1, 2, 3, or 4 with the 48-inch purge valves or the 12-inch vacuum/pressure relief valves open providing a flow path is limited to no more than 200 hours per calendar year.

~~Hydrogen Purge System (12 4 inch purge valves)~~

~~The Hydrogen Purge System is a supplementary system for the internal electric hydrogen recombiners and operated for hydrogen dilution or external hydrogen recombiners in for the containment following a LOCA. Because the 12 4 inch Containment Hydrogen Purge supply and exhaust valves are remote manually operated not qualified for automatic closure from their open position under DBA conditions, they are normally maintained closed with power removed in MODES 1, 2, 3, and 4 to ensure the containment boundary is maintained.~~

~~Minipurge System~~ Containment Pressure/Vacuum Relief (~~18~~ 12 inch ~~purge discharge~~ isolation valves)

The ~~Minipurge System~~ Containment Pressure/Vacuum Relief valves are operated as necessary to:

a. Reduce the concentration of noble gases within containment prior to and during personnel access, and

~~b.~~ equalize containment internal and external pressures.

Since the ~~18~~ 12 inch Containment Pressure/Vacuum Relief valves ~~used in the Minipurge System~~ are designed to meet the requirements for automatic containment isolation ~~valves~~ within 5 seconds if mechanical blocks are installed to prevent opening more then 50°, these valves may be opened as needed in MODES 1, 2, 3, and 4.

(Continued)

Insert for Q 3.6.3-39

Insert for B 3.6-12

The Containment Purge Supply and Exhaust Isolation valves are supplied with an internal block which prevents opening the valve beyond 80 degrees. This block was provided by the manufacture to allow limiting the valve's opening. Calculations performed during qualification to Branch Technical Position CSB 6-4 showed the block to be unnecessary to assure closure time within 2 seconds under DBA conditions (SSER 9, June 1980 and Calculation M-661). Adjustments of this block to values greater than or less than 80 degrees will effect the valve's ability to close. This design assures that ...

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: Q 3.6.6-19 **APPLICABILITY:** DC

REQUEST:

STS B3.6.6A Bases - LCO
ITS B3.6.6 Bases - LCO

STS B3.6.6A Bases - LCO describes what constitutes an OPERABLE Containment Spray System. The description includes the automatic transferring of the pump suction from the RWST to the containment sump. At DCPP this transferring of the pump suction is done manually, which is acceptable. However, ITS B3.6.6 Bases - LCO deletes all mention of this capability. The staff requires that this be retained in ITS B3.6.6 Bases - LCO because the ability or capability to transfer the pump suction constitutes part of the description of system OPERABILITY.

Comment: Retain the STS wording modified by DCPP plant specific design features.

FLOG RESPONSE: The requested change for DCPP would be technically incorrect. The DCPP design provides for the spray rings being aligned to an available RHR pump. The decision to do so is one made by the Technical Support Center. Issues associated with this transfer are the subject of LAR 98-03 (3/18/98). This LAR also submitted wording changes to the ITS LCO 3.6.6 Bases (Background and Applicable Safety Analysis Section) providing DCPP plant specific wording associated with this transfer. The following wording is currently under staff review as part of LAR 98-03:

Background: Containment Spray is not required to be actuated during recirculation phase of a LOCA, but may be actuated at the discretion of the Technical Support Center. During the recirculation phase of a LOCA, the Containment Spray System must be capable of transferring the spray function to an RHR System taking suction from the containment sump. OPERABILITY of valves 9003A and B, and the capability to close valves 8809A and B to divert water from the RCS to the spray headers, will ensure that this capability exists.

Applicable Safety Analysis: Analyses and evaluation show that containment spray is not required during the recirculation phase of a LOCA (Ref. 7). If only one RHR pump is available during the recirculation phase of a LOCA, it may not be possible to obtain significant containment spray without closing valves 8809A or B. If recirculation spray is used with only one train of RHR in operation, ECCS flow to the reactor will be reduced, but analysis has shown that the flow to the reactor in this situation is still in excess of that needed to supply the required core cooling.

FLOG RESPONSE (Revised): LAR 98-03 will not be approved prior to the approval of the NUREG-1431 conversion. DCPP has revised the Bases to reflect the current Technical Specification position. The following insert has been added to the Bases text:

> "Upon actuation of the RWST Low alarm, the suction flow path of the RHR system must be capable of being transferred to the containment sump. Containment Spray could then be supplied as required by an RHR pump taking suction from the containment sump."

ATTACHED PAGES:

Encl. 5B B 3.6-39

Containment spray could then be supplied as required by an RHR pump taking suction from the containment sump.

BASES (Continued)

LCO

Q3.6.6-19 system

During a DBA LOCA, a minimum of ~~one containment cooling train~~ two CFCUs and one containment spray train are required to maintain the containment peak pressure and temperature below the design limits (Refs. ~~7~~ 4). Additionally, one containment spray train is also required to remove iodine from the containment atmosphere and maintain concentrations below those assumed in the safety analysis. To ensure that ~~this~~ these requirements are met, two containment spray trains and ~~two containment cooling~~ the CFCU ~~trains~~ consisting of four CFCUs or three CFCUs each supplied by a different vital bus must be OPERABLE. Therefore, in the event of an accident, at least one train ~~in each system~~ of containment spray and ~~one train of CFCUs (~~two CFCUs~~)~~ operate, assuming the worst case single active failure occurs. Each Containment Spray ~~System~~ train typically includes a spray pump, spray headers, nozzles, valves, piping, instruments, and controls to ensure an OPERABLE flow path capable of taking suction from the RWST upon an ESF actuation signal ~~and automatically transferring.~~ ~~Upon actuation of the RWST low-low alarm, the suction flowpath must be capable of being manually transferred to the containment sump.~~ STET Q3.6.0-2 Q3.6.6-8

Low suction Q3.6.6-19 Q3.6.0-2

Each ~~Containment Cooling System~~ CFCU ~~typically~~ includes ~~demisters,~~ cooling coils, dampers, fans, instruments, and controls to ensure an OPERABLE flow path.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment and an increase in containment pressure and temperature requiring the operation of the containment spray trains and ~~containment cooling trains~~ CFCUs.

In MODES 5 and 6, the probability and consequences of these events are reduced due to the pressure and temperature limitations of these MODES. Thus, the Containment Spray System ~~and the Containment Cooling System are~~ is not required to be OPERABLE in MODES 5 and 6.

remove strike-out

ACTIONS

Q3.6.6-20

A.1

With one containment spray train inoperable, the inoperable containment spray train must be restored to OPERABLE status within 72 hours. In this Condition, the remaining OPERABLE spray and cooling trains are ~~is~~ adequate to perform the iodine removal and containment cooling functions. The 72 hour Completion Time takes into account the redundant heat removal capability afforded by the Containment Spray System, reasonable time for repairs, and low probability of a DBA occurring during this period.

(Continued)

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: DC 3.7-011 (new) **APPLICABILITY:** DC

REQUEST: Revised the Bases of LCO 3.7.10, 3.7.12, and 3.7.13 to characterize the Bases for the use of a 24 months frequency as derived from LA 119/117 rather than the identified standard or NUREG-0800.

ATTACHED PAGES:

Encl. 5B B 3.7-57, B 3.7-58, B 3.7-67, B 3.7-68, B 3.7-74, B 3.7-75

BASES

SURVEILLANCE REQUIREMENTS

Once actuated due to a fuel handling accident the CRVS must be protected against a single failure. This protection, although not required for immediate accident response, is assured by requiring that a backup power supply be provided as described above in Applicability. This back up is assured via the performance of ~~non-TS~~ surveillances that verify the ability to transfer power supplies. DC 3.7-ED

The 31 day procedural verification of the separate vital power supplies for the redundant fans ~~and the one hour operation of each supply, booster and pressurization supply fan (unless already operating)~~ assures system reliability, ~~and two train redundancy.~~ Q 3.7.10-3

SR 3.7.10.1

Standby systems, by initiating, from the control room, flow through the HEPA filter and charcoal adsorber using either redundant set of booster and pressurization supply fans, should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not too severe, testing each train once every month provides an adequate check of this system. Monthly heater operations dry 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 ~~and operating automatically (filter temperature control). Systems without heaters need only be operated for ≥ 15 minutes to demonstrate the function of the system.]~~ The 31 day Frequency is based on the reliability of the equipment and the two train redundancy availability. Q 3.7.10-8 DC 3.7-ED

Insert SR 3.7.10.2

SR 3.7.10.~~2~~ 3

Q 3.7.10-3

This SR verifies that the required ~~CREFVS~~ CRVS testing is performed in accordance with the [Ventilation Filter Testing Program (VFTP)]. The ~~CREFVS~~ CRVS filter tests are in accordance with ~~Regulatory Guide 1.52~~ ANSI 510-1980 (Ref. 3). The [VFTP] includes testing the performance of the HEPA filter, charcoal adsorber efficiency, minimum flow rate, and the physical properties of the activated charcoal. Specific test Frequencies and additional information are discussed in detail in the [VFTP].

N DC 3.7-ED

SR 3.7.10.~~3~~ 4

Q 3.7.10-3

This SR verifies that each ~~CREFVS~~ CRVS train automatically starts and operates in the pressurization mode on an actual or simulated actuation signal generated from a Phase "A" Isolation. The Frequency of ~~[18]~~ 24 months is ~~specified in Regulatory Guide 1.52~~ ~~ANSI 510-1980~~ ~~(Ref. 3)~~ based upon the maintenance and operating history (REF. 6). DC 3.7-011

DC 3.7-ED N DC-ALL-001

(continued)

BASES

SR 3.7.10.~~4~~ 5 (Q3.7.10-3)

This SR verifies the integrity of the control room enclosure, and the assumed inleakage rates of the potentially contaminated air. The control room positive pressure, with respect to potentially contaminated adjacent areas, is periodically tested to verify proper functioning of the CREFVS. During the pressurization ~~emergency~~ mode of operation, the CREFVS is designed to pressurize the control room ≥ ~~[~~0.125~~]~~ inches water gauge positive pressure with respect to the outside atmosphere ~~and adjacent areas~~ in order to prevent unfiltered inleakage. The CREFVS is designed to maintain this positive pressure with one train ~~at a makeup flow rate of [3000] cfm~~. The Frequency of ~~[18]~~ 24 months on a STAGGERED TEST BASIS is ~~consistent with the guidance provided in NUREG-0800 (Ref. 4)~~ BASED upon the maintenance and operating history (Ref. 6). (DC 3.7-ED) (DC 3.7-011) (DC-ALL-001)

REFERENCES

1. FSAR, Section 9.4.1 ~~[6.4]~~.
2. FSAR, Chapter 15.
3. ~~Regulatory Guide 1.52, Rev. 2~~ ANSI 510-1980. (N) (DC 3.7-ED)
4. NUREG-0800, Section 6.4, Rev. 2, July 1981.
5. DCM S-23F

(DC 3.7-011)

6. LA 119/117, Revision to technical specifications to support extended fuel cycles to 24 months, April 14, 1997

BASES

Q3.7.12.2-3

supplies for the exhaust fans (via a non-TS surveillance) assures system redundancy. ~~Systems without heaters need only be operated for ≥ 15 minutes to demonstrate the function of the system.]~~ The 31 day Frequency is based on the known reliability of equipment and the two train redundancy available.

SR 3.7.12.2

This SR verifies that the required ~~ECCS PREACS~~ ABVS testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The ~~ECCS PREACS~~ ABVS filter tests are in accordance with References 3 and 4. The VFTP includes testing HEPA filter performance, charcoal adsorbers 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 3.7.12.3

(REF. 3 AND 4)

This SR verifies that each ~~ECCS PREACS~~ ABVS train starts and operates on an actual or simulated actuation signal and that the system aligns to exhaust through the common HEPA filter and charcoal adsorber. The ~~18~~ 24 month Frequency is ~~consistent with that specified in References 3 and 4~~ BASED UPON THE MAINTENANCE AND OPERATING HISTORY (REF. 8).

DC-ALL-001 DC 3.7-011

SR 3.7.12.4 Not Used.

~~This SR verifies the integrity of the ECCS pump room/enclosure. The ability of the ECCS pump room to maintain a negative pressure, with respect to potentially uncontaminated adjacent areas, is periodically tested to verify proper functioning of the ECCS PREACS. During the [post accident] mode of operation, the ECCS PREACS is designed to maintain a slight negative pressure in the ECCS pump room, with respect to adjacent areas, to prevent unfiltered LEAKAGE. The ECCS PREACS is designed to maintain a ≤ [0.125] inches water gauge relative to atmospheric pressure at a flow rate of [3000] cfm from the ECCS pump room. The Frequency of [18] months is consistent with the guidance provided in NUREG-0800, Section 6.5.1 (Ref. 6).~~

~~This test is conducted with the tests for filter penetration; thus, an [18] month Frequency on a STAGGERED TEST BASIS is consistent with that specified in Reference 4.~~

SR 3.7.12.5 Not Used.

~~Operating the ECCS PREACS bypass damper is necessary to ensure that the system functions properly. The OPERABILITY of the ECCS PREACS bypass damper is verified if it can be specified in Reference 4.~~

BASES

SURVEILLANCE REQUIREMENT (continued)

SR 3.7.12.6

This SR verifies the leak tightness of dampers that isolate flow to the normally operating filter train. This SR assures that the flow from the auxiliary building passes through the HEPA filter and charcoal ~~absorber~~ adsorber unit when the ABVS Buildings and Safeguards or Safeguards Only modes have been actuated coincident with an SI. The ~~18~~ 24 month Frequency is ~~consistent with the requirements of Reference 4~~.

DC 3.7-ED

DC-ALL-001

DC 3.7-011

REFERENCES

1. FSAR, Section ~~[6.5.1]~~ 9.4.2.
2. ~~FSAR, Section [9.4.5].~~
3. ~~3~~ 2. FSAR, Section ~~[15.6.]~~15.5.
4. ~~4~~ 3. ~~Regulatory Guide 1.52 (Rev. 2).~~ ASTM D 3803-1989
5. 4. ANSI N510-1980
6. 5. 10 CFR 100.11.
7. 6. NUREG-0800, Section 6.5.1, Rev. 2, July 1981.
8. 7. DCM S-23B, "Main Auxiliary Building Heating and Ventilation System"

DC 3.7-011

8. LA 119/117, Revision to technical specifications to support extended fuel cycles to 24 months, April 14, 1997.

BASES

SR 3.7.13.3

DC 3.7-ED

This SR verifies that each ~~FBACS~~ FHBVS train starts and operates on an actual or simulated actuation signal and directs its exhaust flow through the HEPA Filters and charcoal ~~absorber~~ adsorber banks. The ~~18~~ 24 month Frequency is consistent with Reference 6.

DC-ALL-001

SR 3.7.13.4

This SR verifies the integrity of the fuel handling building enclosure. The ability of the fuel handling building to maintain negative pressure with respect to potentially uncontaminated adjacent areas is periodically tested to verify proper function of the ~~FBACS~~ FHBVS. During the ~~[~~post accident~~]~~ mode of operation, the ~~FBACS~~ FHBVS is designed to maintain a slight negative pressure in the fuel handling building, to prevent unfiltered LEAKAGE. The ~~FBACS~~ FHBVS is designed to maintain ~~a~~ the building pressure ≤ -0.125 inches water gauge with respect to atmospheric pressure ~~at a flow rate of [20,000]cfm to the fuel building~~. ~~The Frequency of 18 months is consistent with the guidance provided in NUREG-0800, Section 6.5.1 (Ref. 7).~~ 24

DC-ALL-001

An ~~18~~ 24 month Frequency (on a STAGGERED TEST BASIS) is ~~consistent with Reference 6~~ BASED UPON THE MAINTENANCE AND OPERATING HISTORY (REF. 9)

SR 3.7.13.5 ~~Not Used~~

DC 3.7-011

Q3.7.13.1-8

~~Operating the FBACS filter bypass damper is necessary to ensure that the system functions properly. The OPERABILITY of the FBACS filter bypass damper is verified if it can be closed. An [18] month Frequency is consistent with Reference 6.~~

Operation of damper M-29 is necessary to ensure that the system functions properly. The OPERABILITY of damper M-29 is verified if it can be closed. An 24 month Frequency is consistent with Reference 6.

(continued)

BASES

REFERENCES

~~1. FSAR, Section [6.5.1].~~

~~2~~ 1. FSAR, Section [9.4.~~5~~ 4].

~~3~~ 2. FSAR, Section ~~[15.7.4]~~ 15.5.

~~4~~ 3. Regulatory Guide 1.25.

~~5~~ 4. 10 CFR 100.

~~6~~ 5. ~~Regulatory Guide 1.52 (Rev. 2).~~ ASTM D 3802-1989

6. ANSI N510-1980.

7. NUREG-0800, Section 6.5.1, Rev. 2, July 1981.

8. DCM S-23D, "Fuel Handling Building HVAC System"

DC 3.7-011

9. LA 119/117, Revision to technical specifications to support extended fuel cycles to 24 months, April 14, 1997.

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: DC 3.7-ED1 (new) **APPLICABILITY:** DC

REQUEST: Various changes have been identified that do not impact the technical content of the submittal or other FLOG members. Changes are noted with DC 3.7-ED1 in the margin and noted below:

1. Revise LCO 3.7.3 which reads "...four MFRV bypass valve is..." to read "...four MFRV bypass valves are..."

2. Revise SR 3.7.3.3 to use "actuates" rather than "actuate."

ATTACHED PAGES:

Encl. 5A 3.7-7, 3.7-9

3.7 PLANT SYSTEMS

3.7.3 Main Feedwater Isolation Valves (MFIVs), ~~and~~ Main Feedwater ~~Regulation~~ Regulating Valves (MFRVs) and ~~Associated~~ MFRV Bypass Valves B

Φ3.7.3-1

LCO 3.7.3 Four MFIVs, four MFRVs, and ~~associated~~ four MFRV bypass valves shall be OPERABLE. B

APPLICABILITY: MODES 1, 2, and 3 except when MFIV, MFRV, or ~~associated~~ four MFRV bypass ~~valve is~~ valves are closed and de-activated or isolated by a closed manual valve. B

DC 3.7-EA1

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more MFIVs inoperable.	A.1 Close or isolate MFIV. AND A.2 Verify MFIV is closed or isolated.	72 hours B Once per 7 days
B. One or more MFRVs inoperable.	B.1 Close or isolate MFRV. AND B.2 Verify MFRV is closed or isolated.	72 hours B Once per 7 days
C. One or more ~~[MFRV or preheater]~~ bypass valve(s) inoperable.	C.1 Close or isolate bypass valve. AND C.2 Verify bypass valve is closed or isolated.	72 hours ~~B-PS~~ B Once per 7 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Verify the closure time of each MFIV is ≤ 60 seconds~~. MFRV [, and associated bypass valve] is ≤ [7] seconds on an actual or simulated actuation signal~~.	3.7-3 In accordance with the ~~[~~Inservice Testing Program ~~or [18] months]~~ B-PS 3.7-56 Q3.7.3-1
SR 3.7.3.2	Verify the closure time of each MFRV and ~~associated~~ MFRV bypass valve is ≤ 7 seconds.	At each COLD SHUTDOWN, but not more frequently than once per 92 days. 3.7-3
SR 3.7.3.3	Verify each MFIV, MFRV, and MFRV bypass valve actuate~~d~~s to the isolation position on an actual or simulated actuation signal.	~~18~~ 24 months 3.7-56 DC3.7-6D

DC-ALL-002

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: 3.8.1-33 **APPLICABILITY:** DC

REQUEST:

CP(3.8.1-20)	Bases for ITS SR 3.8.1.8, STS Bases page 3.8-40
DC	Bases for STS SR 3.8.1.8
WC(3.8.1-17)	Bases for ITS SR 3.8.1.9, STS Bases page 3.8-42
	Bases for STS SR 3.8.1.9
	Bases for ITS SR 3.8.1.10, STS Bases page 3.8-45
	Bases for STS SR 3.8.1.10
	Bases for ITS SR 3.8.1.11, STS Bases page 3.8-49
	Bases for STS SR 3.8.1.11
	Bases for ITS SR 3.8.1.12, STS Bases page 3.8-51
	Bases for STS SR 3.8.1.12
	Bases for ITS SR 3.8.1.13, STS Bases page 3.8-52
	Bases for STS SR 3.8.1.13
	Bases for ITS SR 3.8.1.14, STS Bases page 3.8-55
	Bases for STS SR 3.8.1.14
	Bases for ITS SR 3.8.1.16, STS Bases page 3.8-57
	Bases for STS SR 3.8.1.16
	Bases for ITS SR 3.8.1.17, STS Bases page 3.8-59
	Bases for STS SR 3.8.1.17
	Bases for ITS SR 3.8.1.18, STS Bases page 3.8-60
	Bases for STS SR 3.8.1.18
	Bases for ITS SR 3.8.1.19, STS Bases page 3.8-63
	Bases for STS SR 3.8.1.19

The Bases for ITS SRs 3.8.1.8, 3.8.1.9, 3.8.1.10, 3.8.1.11, 3.8.1.12, 3.8.1.13, 3.8.1.14, 3.8.1.16, 3.8.1.17, 3.8.1.18, and 3.8.1.19 state, "This Note does not prohibit the application of LCO 3.0.5." This is a proposed difference relative to the Bases for STS SRs 3.8.1.8, 3.8.1.9, 3.8.1.10, 3.8.1.11, 3.8.1.12, 3.8.1.13, 3.8.1.14, 3.8.1.16, 3.8.1.17, 3.8.1.18, and 3.8.1.19.

Comment: The Notes for ITS SRs 3.8.1.8, 3.8.1.9, 3.8.1.10, 3.8.1.11, 3.8.1.12, 3.8.1.13, 3.8.1.14, 3.8.1.16, 3.8.1.17, 3.8.1.18, and 3.8.1.19 do not provide any exceptions. The proposed differences appear to be in conflict with the Notes. No justification has been provided to support the proposed differences. Revise the submittal to provide the appropriate justification, or conform to the STS.

FLOG RESPONSE: This response differs from the other FLOG responses for comment number Q3.8.1-33DC, 3.8.1-20CP, and 3.9.1-17WC . This response is plant specific for DCPP.

Recent conversations with the NRC indicate that TSTF-283 will not be approved in time to support the FLOG ITS conversion schedule. The ITS would therefore be required to be revised to reflect a defined version of the CTS use of the undefined wording "during shutdown." The NRC Staff expressed the belief that the current CTS words indicated that none of the SRs

covered by this phrase maybe performed on a unit at power. DCPP does not however, agree that the CTS prohibits performance of all of the effected SRs in MODES 1 and 2. DCPP does agree that 10CFR50.59 could restrict many of the effected SRs.

However, in order to facilitate the ITS conversion the following actions will be under taken. The proposed ITS Bases will be revised to remove the statement, "This Note does not prohibit the application of LCO 3.0.5."

The following changes are being made in conjunction with the removal of the LCO 3.0.5 statement.

1. DCPP will modify the Bases to state that the Note associated with SR 3.8.1.8 does not apply to the manual bus transfers, rather it applies only to automatic action which result in automatic load shedding and automatic reloading during the transfer process.

2. The Note limiting the MODES in which the SR may be performed would be removed from SR 3.8.1.10. The removal would be based upon the fact that the DCPP design allows this SR to be safely performed in all MODES. This SR verifies the ability of the DG to reject a load equal to its continuous rating without tripping or exceeding the allowed voltage rise.

   The STS contains a reviewer's Note, which allows removal of the MODE restriction Note for this SR based upon three criteria:

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

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

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

   Criteria a) and b) for SR performance in MODE 1 or 2 address the safety effects of the initial conditions of this SR where the DG must be paralleled with a bus which is attached to offsite power and then load the DG to it continuous load rating. This same capability is already required to be verified functional per SR 3.8.1.3 by loading the DG for a time period equal to or greater then 60 minutes (no CTS or STS MODE restrictions apply) every 31 days. The performance of SR 3.8.1.10 in MODE 1 or 2 will, therefore, not render any safety system or component inoperable nor will it cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems.

   Criteria c) for SR performance in MODE 1 or 2 addresses the effects of the load rejection test. This test is intended to demonstrate that the DG governor and DG voltage regulator are functioning properly by opening the output breaker on the DG being tested and verifying that the it does not trip and verifying that the DG output voltage does not exceed the allowable value. The only potential risk associated with this test is to the DG (already inoperable) being tested. The bus from which the DG is removed is fully OPERABLE and

supplied by the normal offsite power source (500 kV Auxiliary Power). The normal offsite power source is also supported by the fully OPERABLE "immediately available offsite power source" (230 kV Startup Power). The loads remain attached to the normal offsite power source throughout the test and are, therefore, subject to no apparent transient. The normal offsite power source is fully capable of handling the load rejection transient. Since the DG output breaker is open, the test poses no risk to the vital bus.

3. The Note limiting the MODES in which the SR may be performed would be removed from SR 3.8.1.14. The removal would be based upon the fact that the DCPP design allows these SR to be safely performed in all MODES. This SR verifies the capability of the DG to remain stable while accepting 110% of continuous rated load for 2 hour and then while accepting 100% of continuous rated load for the next 22 hours.

   The considerations for performing this test in MODE 1 or 2 must include the effect of the test's initial conditions on the vital bus and any connected safety loads. Considerations must also include the potential effects of the test and of any potential failures of the test on the vital bus or any connected safety loads.

   This endurance test SR is the last major test of the DG prior to declaring it OPERABLE. The ability of the DG to be paralleled to the bus and accept 100% of continuous rated load for a time period of equal to or greater then 1-hour would be already demonstrated per completion of SR 3.8.1.3 (with no MODE restriction in either the CTS or the STS). SR 3.8.1.3 does not limit the time period that the DG maybe paralleled to the bus; it only provides a minimum time period. SR 3.8.1.14 differs only in the required duration and the 2-hour peak loading to 110% of continuous rated load (this value is also the 2-hour in 24-hour load rating of the DG). The potential for failure of this SR exists principally in the DG which is under test. The bus and associated loads remain connected to the offsite power source throughout the test. The DG is also provided with an output breaker to protect the bus from any potential DG failure. The risk of catastrophic failure of the DG in such a manner as to jeopardize the safety of the bus (protected by a breaker) or safety systems attached to the bus is not credible.

New JFD 3.8-53 has been created to document the difference from the STS resulting from the removal of the MODE restriction Note from ITS SR 3.8.1.10 and ITS SR 3.8.1.14.

FLOG RESPONSE (revised): Based upon conversation with the NRC Staff on February 26, 1999, the proposed ITS Bases has been revised to remove the statement: "This Note does not prohibit the application of LCO 3.0.5." SRs 3.8.1.8, 3.8.1.10, and 3.8.1.14 are revised to remove "during shutdown" from the manual bus transfer, the full load rejection, and the 24-hour load run surveillances. These changes are described in Enclosure 3A & 3B by DOC 01-76-LS-29 (new) and are considered to be "out-of-scope." Associated NSHC LS-29 has been added to Enclosure 4.

The ITS markup of SR 3.8.1.8 Note is revised to specify that this Surveillance shall not be performed for automatic transfers in Modes 1 or 2. The ITS markup of SR 3.8.1.10 and SR 3.8.1.14 are revised to remove the MODE restriction Note.

New JFD 3.8-53 (new) is provided in Enclosure 6A and 6B to document the difference from the STS resulting from the limitation of the Note's applicability to automatic bus transfers in ITS SR 3.8.1.8 and the removal of the MODE restriction Note from ITS SR 3.8.1.10 and ITS SR 3.8.1.14.

FLOG RESPONSE (Supplement): The CP response to Q 3.8.1-20 CP deleted DOC 01-55-M and replaced it with DOC 01-74-M. A typo was corrected in NSHC LS-29

ATTACHED PAGES:

Encl. 2	3/4 8-4, 3/4 8-4a, 3/4 8-5, 3/4 8-6
Encl. 3A	9, 11
Encl. 3B	9, 11
Encl. 4	(new) LS-29

SURVEILLANCE REQUIREMENTS (Continued) 01-53-M

3) Verifying the generator *** is synchronized, loaded ~~to greater than or equal to 2484 kW in less than or equal to 60 seconds,~~ and operates for greater than or equal to 60 minutes at a load ≥ 2370 kW and ≤ 2610 kW*. 01-17-LS10 01-18-LS11 01-19-LS12

~~4) Verifying the diesel generator is aligned to provide standby power to the associated emergency busses, and~~

~~5) Verifying the diesel engine protective relay trip cutout switch is returned to the cutout position following each diesel generator test.~~ 01-20-LG

(new) Verifying lube oil inventory is at least 650 gallons; 01-48-M

(new) Verifying each diesel generator has at least one starting air receiver with a pressure at least 180 psig; and 01-48-M

(new) Verifying each DG turbocharger air assist air receiver pressure is at least 180 psig. 01-64-M

b. At least once per ~~18 months~~ REFUELING INTERVAL ~~during shutdown~~, by: Q 3.8.1-33 DG-ALL-005 01-76-LS-29

1) ~~Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service;~~ Q 3.8.1-33 01-20-LG 01-74-M ~~01-55-M~~

2) Verifying # that the load sequence timers are OPERABLE with each load sequence timer within ~~the~~ its limits DURING SHUTDOWN ~~specified in Table 4.8-2~~; Q3.8.1-23 01-20-LG 01-72-LG 01-76-LS-29

3) ~~Verifying the generator capability to reject a load of greater than or equal to 508 kW while maintaining voltage at 4160 ± 240/-375 volts and frequency at 60 ± 3 Hz;~~ Verifying each DG rejects a load** greater than or equal to its single largest post-accident load, and: 01-26-M Q 3.8.1-33 01-23-LG 01-76-LS-[illegible]

a. Following load rejection, the frequency is ≤ 63 Hz;

b. Within 2.4 seconds following load rejection, the voltage is ≥ 3785 V and ≤ 4400 V; and 01-24-LS13

c. Within 2.4 seconds following load rejection, the frequency is ≥ 58.8 Hz and ≤ 61.2 Hz. 01-25-M DC 3.8-ED

4) Verifying the generator capability to reject a load of greater than or equal to ~~2370~~ 2340 kW and ≤ ~~2610~~ 2600 kW while operating at a power factor of ≤ 0.87 ~~2484 kW~~ without tripping. The generator voltage shall not exceed 6200 ~~4680~~ volts during and following the load rejection; 01-18-LS11 01-26-M 01-27-LS9

5) Verify by Simulating or on an actual signal # a loss of offsite power by itself, and: 01-11-TR1

a) Verifying de-energization of the emergency busses and load shedding from the emergency busses, and Q 3.8.1-33 ~~01-55-M~~ 01-74-M

b) Verifying the diesel starts from standby conditions on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the required auto-connected loads through sequencing timers and operates for greater than or equal to 5 minutes while its generator is loaded with the permanent and auto-connected loads. After energization of these loads, the steady state voltage and frequency of the emergency busses shall be maintained at 4160 + 240/-375 volts and 60 ± 1.2 Hz during this test. 01-15-A

* Momentary transients outside the load range do not invalidate this test. 01-19-LS12

** If performed with the DG synchronized with offsite power, this Surveillance shall be performed at a power factor of ≤ 0.9. 01-26-M

*** This surveillance shall be conducted on only one DG at a time. Q3.8.1-33 01-53-M

\# This surveillance shall not be performed in MODE 1, 2, 3, or 4. 01-74-M ~~01-55-M~~

Q3.8.1-14

and immediately following, without shutdown, a successful performance of surveillance 4.8.1.1.2.a.2)

 Q 3.8.1-33

6) Verifying that on a Safety Injection actual or test signal without loss of offsite power, the diesel generator starts from standby conditions on the auto-start signal and operates on standby for greater than or equal to 5 minutes. The generator voltage and frequency shall be 4160 + 240/-375 volts and 60 ± 1.2 Hz within 13 seconds after the auto-start signal; the steady state generator voltage and fre-quency shall be maintained within these limits during this test; DURING SHUTDOWN — 01-11-TR1, 01-15-A, 01-76-LS-29

7) Verify by Simulating# or by an acutual ~~a~~ loss of offsite power in conjunction with a Safety Injection actual or test signal, and: Q3.8.1-33 — 01-76-LS-29, 01-74-M, ~~01-55-M~~, 01-11-TR1

a) Verifying de-energization of the emergency busses and load shedding from the emergency busses;

b) Verifying the diesel starts from standby conditions on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected emergency (accident) loads through sequencing timers and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After energization of these loads, the steady state voltage and frequency of the emergency busses shall be maintained at 4160 + 240/-375 volts and 60 ± 1.2 Hz during this test; and — 01-15-A

~~c)~~ Verifying that all automatic diesel generator trips, except engine overspeed, low lube oil pressure and generator differential, are bypassed when the diesel engine trip cutout switch is in the cutout position and the diesel is aligned for automatic operation. — 01-29-A, 01-26-M

8) Verifying the diesel generator operates at a power factor ≤ 0.87** for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to greater than or equal to ~~2750 kW~~ ~~2625~~ 2600 kW and ≤ ~~2890~~ 2860 kW* and during the remaining 22 hours of this test, the diesel generator shall be loaded to greater than or equal to ~~2484~~ ~~2370~~ 2340 kW and ≤ ~~2610~~ 2600 kW* kW. ~~The generator voltage and frequency shall be 4160 + 240/-375 volts and 60 ± 1.2 Hz within 13 seconds after the start signal. For Units 1 and 2 Cycle 7: Within 5 minutes after completing this 24 hour test, perform Specification 4.8.1.1.2b.5)b);*~~ — 01-18-LS11, 01-19-LS12, 01-30-LG, 01-31-A, DC 3.8-ED

9) ~~Verifying that the auto-connected loads to each diesel generator do not exceed the maximum rating of 2750 kW;~~ Q 3.8.1-33 — 01-20-LG

10) Verifying# the diesel generator's capability to: DURING SHUTDOWN — 01-76-LS-29, 01-74-M, ~~01-55-M~~

~~* For Units 1 and 2 Cycle 7: If Specification 4.8.1.1.2b.5)b) is not satisfactorily completed, it is not necessary to repeat the preceding 24-hour test. Instead the diesel generator may be operated at 2484 kW for 1 hour or until operating temperature has stabilized.~~ — 01-31-A

* Momentary transients outside the load range do not invalidate this test. — 01-19-LS12

** Momentary transients outside the power factor range do not invalidate this test. — 01-26-M

\# This surveillance shall not be performed in MODE 1, 2, 3, or 4 — 01-74-M, ~~01-55-M~~

Q 3.8.1-33

a) Synchronize its isolated bus with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power.

b) Transfer its loads to the offsite power source. and 01-76-LS-29

c) Be restored to its ready to load ~~standby~~ status. 01-14-M Q3.8.1-33

11) Verifying that DURING SHUTDOWN with the diesel generator operating in a test mode, connected to its bus, a simulated or actual Safety Injection signal opens the auxiliary transformer breaker and automatically sequences the emergency loads onto the diesel generator; and 01-74-M ~~01-55-M~~ 01-11-TR1

~~12) Verifying that the shutdown relay lockout feature prevents diesel generator starting only when required:~~

~~a) Generator differential current high, or~~ 01-20-LG

~~b) Engine lube oil pressure low, or~~

~~c) Emergency stop button actuated, or~~

~~d) Overspeed trip actuated.~~ 01-66-TR3

c. At least once per 10 years ~~or after any modifications which could affect diesel generator interdependence~~ by starting all diesel generators simultaneously from standby conditions, ~~during shutdown~~, and verifying that all diesel generators accelerate to at least 900 rpm in less than or equal to 10 seconds and achieve voltage ≥ 3785 V and ≤ 4400 V, and frequency ≥ 58.8 Hz and ≤ 61.2 Hz within 13 seconds. 01-15-A 01-35-M 01-07-LS3

d. At least once per 31 days ~~and after each operation of the diesel where the period of operation was greater than or equal to 1 hour~~ by checking for and removing accumulated water from the day tank. 01-33-LS15

e. ~~For Units 1 and 2, Cycle 8 and after:~~ DC-ALL-005 01-31-A

At least once per REFUELING INTERVAL ~~18 months~~ by verifying the diesel generator starts and accelerates to at least 900 rpm in less than or equal to 10 seconds. The generator voltage and frequency shall be 4160 +240/-375 volts and 60 ± 1.2 Hz within 13 seconds after the start signal. This test shall be performed within 5 minutes of shutting down the diesel generator after the diesel generator has operated for at least 2 hours at a load of greater than or equal to ~~2484~~ ~~2370~~ 2340 kW and ≤ ~~2610~~ 2600 kW*. 01-19-LS12 01-18-LS11 DC3.8-ED

4.8.1.1.3 The Diesel Fuel Oil Storage and Transfer System shall be demonstrated OPERABLE:

a. At least once per 31 days by:

1) Verifying the fuel level in the fuel storage tank, and 01-01-A

2) Verifying that each fuel transfer pump starts and transfers fuel from the storage system to each engine-mounted tank via installed lines.

CHANGE NUMBER	NSHC	DESCRIPTION
		The new requirements for lube oil inventory (ITS Condition B. and ITS SR 3.8.3.2) verify sufficient lube oil is available to support DG operation. The lube oil storage volume requirement is based upon a percentage of the consumption rate of DFO and the storage assignment is therefore based upon the DBA calculation for diesel fuel oil usage. The new requirements for air start receiver pressures (ITS Condition E. and ITS SR 3.8.3.4) verify sufficient capacity of the air start receivers. These changes are consistent with NUREG-1431. Q3.8.3-01
01-49	LS16	Insert NUREG-1431 LCO 3.8.3, "Diesel Fuel Oil, Lube Oil, and Starting Air," includes Conditions and Required ACTIONS that allow reduced DFO inventory for up to 48 hours before requiring that the associated DG be declared inoperable. A new Condition would address stored DFO with total particulates out of limit and allow 7 days for restoration. A new Condition would address new fuel oil with properties not within limits and allow 30 days for restoration. The additional allowed outage time (AOT) for DFO is acceptable based on the remaining capacity of the DFO system and the low probability of an event occurring during the time that the DFO requirements were not met. This change is consistent with NUREG-1431.
01-50	LS17	CTS 3.8.1.1 ACTION shutdown requirement would be replaced with a requirement to enter the required feature's ACTION statement. The ACTION currently requires that with one DG inoperable, all required safety equipment that depends on the remaining OPERABLE DG(s) be verified OPERABLE. If these requirements are not met, a unit shutdown is required. Rather than requiring a unit shutdown, the proposed change would require declaring inoperable the required safety equipment powered from an inoperable DG. This would result in entering the required feature's TS ACTION statement. These ACTIONS would assure that specific measures, appropriate for a loss of safety function associated with inoperable redundant features, would be taken. From a safety standpoint it is preferable to avoid an unnecessary plant shutdowns. This change is consistent with NUREG-1431 and is acceptable because it would continue to assure the OPERABILITY of required features without requiring an unnecessary plant shutdown.
01-51	LS18	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).
01-52	M	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).
01-53	M	A Note would be added to the SR for monthly DG load test to allow testing on only one DG at a time. Consistent with current practice, this prevents having two DG synchronized and loaded on offsite power at one time. This reduces the risk of "common cause" failure. This change is consistent with NUREG-1431. Insert Q3.8.1-14
01-54	LS19	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B). Q 3.8.1-33
01-55	~~M~~	~~A Note would be added prohibiting several SRs from being performed in MODES 1 through 4. This change is consistent with NUREG-1431.~~ Not Used
-56	M	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).

DESCRIPTION OF CHANGES TO TS SECTION 3/4.8

CHANGE NUMBER	NSHC	DESCRIPTION
01-65	A	Not applicable to DCPP. See Conversion Comparison Table (Enclosure 3B).
01-66	TR3	This SR currently requires that at least once per 10 years or after any modifications which could affect emergency diesel generator (EDG) interdependence, during shutdown, and verify that both EDGs accelerate to [at least 514 RPM] in less than or equal to [12 seconds]. It is being proposed that this SR be revised to eliminate the requirement to perform the test after any modifications which could affect EDG interdependence. This SR can be considered to be the "redundant unit test" in accordance with RG 1.9, "Selection and Diesel Generator Set Capacity for Standby Power Supplies," Rev. 3. This test demonstrates that by starting and running both redundant units simultaneously, potential "common cause failure" that may be undetected in single EDG unit tests do not occur. The proposed change to this SR will make it consistent with the ITS SR 3.8.1.20. The elimination of the requirement to perform this SR after any modification which could affect EDG interdependence is justified based upon the ability of the modification process to detect concerns related to the interdependence of the EDGs.
02-01	LG	The list of batteries and chargers in the CTS DC Sources - Operating LCO and ACTION requirement would be moved to the Bases. This deletes descriptive information from the TS, consistent with NUREG-1431.
02-02	A	The phrase, "that could degrade battery performance," would be added to clarify the purpose of the battery inspection SR consistent with TSTF-38. This change does not add or remove any technical requirements and is administrative in nature.
02-03	M	DC-ALL-005 The requirement to remove visible terminal corrosion would be added to the SR verifying on an ~~18~~ [24] -month frequency that cell-to-cell and terminal connections are clean, tight, and coated with anticorrosion material. These elements of a visual inspection are consistent with IEEE-450, 1995. This change is consistent with NUREG-1431.
02-04	M	A Note would be added to SRs that these SRs are not to be performed in MODEs 1, 2, 3, or 4. Since these surveillances discharge the battery such that it would not have capacity left to perform its required function, this SR must be performed when the battery is not required to support an operable vital bus. The addition of this Note is consistent with NUREG-1431.
02-05	M	The SR would be changed to allow performing a modified performance discharge test instead of the performance discharge test. The modified performance test is a more severe test and envelopes the battery service discharge test. The results of the modified performance test provides assurance of the battery capability as well as battery capacity. This change is consistent IEEE-450, 1995 and with NUREG-1431.
02-06	~~LS22~~	~~Consistent with industry Traveler TSTF-115, this change would allow the extension of the surveillance frequency verification for battery terminal voltage while on float charge, and for Category A battery cell parameters from 7 days to 31 days in accordance with the recommended frequency of at "least monthly" identified in IEEE 450-1995, Section 4.3.1.~~ Not Used Q3.8.4-05 Q 3.8.6-01

01-67-A
01-68-M
01-69-M
01-70-M
Insert for 3A
01-71-A Insert Q3.8.1-04
01-72-LG Insert Q3.8.1-23DC
01-73-LS27 - Insert for 3A
01-74-M INSERT Q3.8.1-22

CP 3.8-007
01-75-M Not applicable to DCPP. See Conversion Comparison Table (Encl. 3B).
01-76-LS-29 - INSERT FOR 3A Q3.8.1-33

Insert for Q 3.8.1-33 (Q 3.8.1-20 CP)

Encl. 3A 11
Insert for DOC 01-74-M

A DCPP specific note will be added prohibiting several SRs from being performed in Modes 1 - 4. This change is constant with the STS but reduces operational flexibility and is more restrictive.

TECHNICAL SPECIFICATION CHANGE		APPLICABILITY			
	DESCRIPTION	Diablo Canyon	Comanche Peak	Wolf Creek	Callaway
01-51 LS18	The frequency for testing the DFO transfer pumps would be extended from 31 to 92 days.	No, CTS of 31 days is retained.	Yes	Yes	No, CTS frequency is retained.
01-52 M	SR would require the DFO transfer pumps to be started automatically.	No, DFO pumps started manually.	Yes	No, not a CTS requirement.	No, not a CTS requirement.
01-53 M	A Note would be added to the SR for monthly DG start and load test to allow testing on only one DG at a time. Insert	Yes Q3.8.1-14	Yes	Yes	Yes
01-54 LS19	DG partial load rejection SR frequency lower limit of 53.25 Hz would be deleted.	No, frequency limit not CTS.	Yes	No, test deleted by Amendment 101.	No, not in CTS.
01-55 ~~M~~	~~A note would be added prohibiting several SRs from being performed in MODEs 1 - 4.~~ Not used	~~Yes~~ N/A Q 3.8.1-33	~~Yes~~ N/A Q 3.8.1-20 CP	~~Yes~~ N/A	~~Yes~~ N/A Q 3.8.1-17 WC
01-56 M	The required warmup period prior to hot restart DG SR would be changed from 1 hour to 2 hours.	No, CTS is 2 hour warmup period.	Yes	No, already in CTS.	No, already revised per Amendment 112.
01-57 A	The reference to depressurizing and venting the RCS is removed from this TS. The requirements for providing RCS capacity at low temperatures is covered in the RCS TS Low Temperature Overpressure Protection. Removal of this reference eliminates duplication and is consistent with NUREG-1431.	No, not in CTS.	Yes	No, not in CTS.	No, not in CTS.
01-58 LG	The requirement to verify that the DFO transfer pump transfers fuel from each storage tank to the day tank of each DG via the installed cross-connected lines would be moved to licensee-controlled documents.	No, not CTS requirement.	No, no cross-connected lines.	Yes, moved to the USAR.	Yes, moved to the FSAR.

01-74-M - SEE INSERT ~~Q 3.8.1-30 CP~~
01-75-M - SEE INSERT CP 3.8-007
01-76-LS-29 - SEE INSERT Q 3.8.1-33

01-73-LS27
01-67, 01- 01-69, 01-70 → see Insert 3B
01-71-A - see insert for Q3.8.1-04 / 01-72-LG see insert for Q3.8.1-23

Q 3.8.1-33

TECHNICAL SPECIFICATION CHANGE		APPLICABILITY			
	DESCRIPTION	Diablo Canyon	Comanche Peak	Wolf Creek	Callaway
1-66 TR3	It is being proposed that this SR be revised to eliminate the requirement to perform the test after any modifications which could affect EDG interdependence.	Yes	Yes	Yes	Yes
02-01 LG	The list of batteries and chargers would be moved to the Bases.	Yes	Yes	Yes	Yes
02-02 A	The phrase, "that could degrade battery performance," would be added to clarify the purpose of the battery inspection SR (TSTF-38).	Yes	Yes	Yes	Yes
02-03 M	The requirement to remove visible terminal corrosion would be added to the SR verifying on an 18-month frequency that cell-to-cell and terminal connections are clean, tight, and coated with anticorrosion material. 24	Yes DC-ALL-005	Yes	Yes	Yes
02-04 M	A Note would be added to several SRs that this surveillance is not to be performed in MODEs 1, 2, 3, or 4.	Yes	Yes	Yes	Yes
02-05 M	The SR would be changed to allow performing a modified performance discharge test instead of the performance discharge test. The results of the modified performance test could be used in lieu of performing the battery service test, SR 3.8.4.7.	Yes	Yes	Yes	Yes
02-06 ~~LS22~~	~~Consistent with industry Traveler TSTF-115, this change would allow the extention of the surveillance frequency verification for battery terminal voltage while on float charge, and for Category A battery cell parameters from 7 days to 31 days in accordance with the recomended frequency of at "least monthly" identified in IEEE 450-1995, Section 4.3.1~~ Not Used.	~~Yes~~ NA	~~Yes~~ NA	~~Yes~~ NA	~~Yes~~ NA Q3.8.4-05 Q3.8.6-01

Insert for Q 3.8.1-33 (Q 3.8.1-20 CP)

Encl. 3B 11
Insert for DOC 01-74-M

A DCPP specific note will be added prohibiting several SRs from being performed in Modes 1 - 4.

Applicability:

DC	YES
CP	NO
WC	NO
CA	NO

Insert for Q 3.8.1-33

Enclosure 4

IV. SPECIFIC NO SIGNIFICANT HAZARDS CONSIDERATIONS

NSHC LS-29
10 CFR 50.92 EVALUATION
FOR
TECHNICAL CHANGES THAT IMPOSE LESS RESTRICTIVE
REQUIREMENTS WITHIN THE TECHNICAL SPECIFICATIONS

The CTS wording "during shutdown" is removed from the frequency of Surveillance 4.8.1.1.1.b.1 for manual bus transfers, Surveillance 4.8.1.1.2.b.4 for emergency diesel generator (DG) full load rejection testing, and Surveillance 4.8.1.1.2.b.8 for the DG 24 hour load run testing. The removal is consistent with the NUREG-1431 Reviewer's Bases Note, which allows removal of the MODE restriction Note for these SRs based upon three criteria:

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

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

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

These changes will make the TS language consistent with the normal method of operation of the plant and facilitate post maintenance testing of a DG during power operation without requiring a unit shutdown.

1. SR 3.8.1.8 Note is modified to read: "This Surveillance shall not be performed for automatic transfers in MODE 1 or 2." The Bases is revised to state that the Note associated with SR 3.8.1.8 applies only to automatic action which result in a unit trip and reactor trip during the transfer process and that it does not apply to the manual bus transfers. Plant experience supports this conclusion in that the manual transfer is a required step in any normal plant startup or shut down (placing the 500 kV delayed access offsite circuit in service or taking it out of service).

2. The Note limiting the MODES in which SR 3.8.1.10 may be performed would be removed. The removal would be based upon the fact that the DCPP design allows this SR to be safely performed in all MODES. The load rejection does not create a perturbation on the ESF bus which is greater then accepted variations (result is a small drop in bus voltage).

   Criteria a) and b) for SR performance in MODE 1 or 2 address the safety effects of the initial conditions of this SR where the DG must be paralleled with a bus which is attached to offsite power and then load the DG to it continuous load rating. This same capability is already required to be verified functional per SR 3.8.1.3 by loading the DG

for a time period equal to or greater then 60 minutes (no CTS or STS MODE restrictions apply) every 31 days.

Criteria c) for SR performance in MODE 1 or 2 addresses the effects of the load rejection test. This test is intended to demonstrate that the DG governor and DG voltage regulator are functioning properly by opening the output breaker on the DG being tested and verifying that the it does not trip and verifying that the DG output voltage does not exceed the allowable value. The only potential risk associated with this test is to the DG (already inoperable) being tested. The bus from which the DG is removed is fully OPERABLE and supplied by the normal offsite power source (500 kV Auxiliary Power). The normal offsite power source is also supported by the fully OPERABLE "immediately available offsite power source" (230 kV Startup Power). The loads remain attached to the normal offsite power source throughout the test and are, therefore, subject to no apparent transient. The normal offsite power source is fully capable of handling the load rejection transient. Plant experience shows that the load rejection does not create a perturbation on the ESF bus which is greater then accepted variations (result is a small drop in bus voltage).

3. The Note limiting the MODES in which SR 3.8.1.14 may be performed would be removed. The removal would be based upon the fact that the DCPP design allows these SR to be safely performed in all MODES.

   The considerations for performing this test in MODE 1 or 2 must include the effect of the test's initial conditions on the vital bus and any connected safety loads. Considerations must also include the potential effects of the test and of any potential failures of the test on the vital bus or any connected safety loads.

   This endurance test SR is the last major test of the DG prior to declaring it OPERABLE. The ability of the DG to be paralleled to the bus and accept 100% of continuous rated load for a time period of equal to or greater then 1-hour would be already demonstrated per completion of SR 3.8.1.3 (with no MODE restriction in either the CTS or the STS). SR 3.8.1.3 does not limit the time period that the DG maybe paralleled to the bus; it only provides a minimum time period. SR 3.8.1.14 differs only in the required duration and the 2-hour peak loading to 110% of continuous rated load (this value is also the 2-hour in 24-hour load rating of the DG). The bus and associated loads remain connected to the offsite power source throughout the test. The DG is also provided with an output breaker to protect the bus from any potential DG failure. The risk of catastrophic failure of the DG in such a manner as to jeopardize the safety of the bus (protected by a breaker) or safety systems attached to the bus is not credible. The plant design for switching and control logic is such that it can safely maintain the ESF buses energized if an accident or loss-of-offsite power were to occur during a 24-hour load run with the plant in Mode 1 power generation (an exception maybe long term degraded grid voltage which is not recognized could result in tripping the EDG under test prior to reaching the second level undervoltage protection setpoint).

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 concerning SR 3.8.1.8 manual bus transfers is consistent with normal plant operation and design. Therefore, it will not effect the probability or consequences of an accident.

   The proposed change regarding the DG load rejection surveillance does not create a different plant configuration. The load rejection does not create a perturbation on the ESF bus which is greater then normally accepted variations. Consequently, it will not effect any safety system that could be the initiator of an accident or that is used to mitigate an accident. Therefore, the probability, or consequences of an accident will not be effected.

   The proposed change concerning the DG 24-hour load endurance test does not create a different plant configuration. Evaluation of the extended duration of the test shows that the plant design for switching and control logic can safely maintain the ESF buses energized if an accident or loss-of-offsite power were to occur. Therefore, the probability, or consequences of an accident will not be effected.

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

   The proposed change does not require physical alteration to any plant system or change the method by which any safety related system performs its function. No new plant operating configuration will result. Thus, the proposed change does not create the possibility of a new or different kind of accident from those previously evaluated.

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

The proposed change is consistent with the plant design and operation. No safety system is or could be rendered ~~OPERABILITY~~ inoperable. The margin of safety established by the testing remains unchanged. Thus there is no reduction in the margin of safety from that previously established.

NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

Based on the above evaluation, it is concluded that the activities associated with NSHC "LS-29" 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.

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: DC 3.8-ED1 (new) **APPLICABILITY:** DC

REQUEST:

Various changes have been identified that do not impact the technical content of the submittal or other FLOG members. Changes are noted with DC 3.8-ED1 in the margin and noted below:

1. Note * was deleted in the conversation by DOC 01-05-LS-6, but markup of page 3/4 8-2 does not show the removal.
2. The extra words "Not Used" should be removed from page B 3.8-10 and B 3.8-11.
3. The first sentence of the third paragraph on page B 3.8-13 should read A.2 rather than A.3.
4. Several locations in the Bases for the SRs of LCO 3.8.1 are revised to state that "The 24 month frequency is consistent the intent of Regulatory Guide 1.108 (Ref. 9)."
5. Change the Q 3.8.1-23 insert verb from "is" to "are."
6. The last sentence of LCO 3.8.2 Bases for Applicability should end with "LCO 3.8.1." rather then "LCO 3.8.."
7. Remove the word "train" form the end of the last sentence of page B 3.8-77.
8. Remove the term "the NRC Policy Statement" from last paragraph of Applicable Safety Analysis of page B 3.8-81.
9. Revise the first sentence on page B 3.8-110 read "... consistent with the intent of Regulatory Guide ...."
10. Add a statement introducing the presence of Table B 3.8.9-1 to Bases page B 3.8-165.
11. Other minor editorial changes, such as typographical, punctuation, spelling, etc. may not be specifically identified by page, but are included in the markup and will be included in the ITS and Bases clean copy

ATTACHED PAGES:

Encl. 2	3/4 8-2
Encl. 5B	B 3.8-10, B 3.8-11, B 3.8-13, B 3.8-42, B 3.8-45, B 3.8-48, B 3.8-55, B 3.8-57, B 3.8-59, B 3.8-60, B 3.8-75, B 3.8-77, B 3.8-78, B 3.8-81, B 3.8-104, B 3.8-110, B 3.8-165

ACTION (Continued)

b. With a diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the A.C. offsite sources by performing Specification 4.8.1.1.1a within 1 hour and at least once per 8 hours thereafter; and declare required feature supported by the inoperable diesel generator inoperable when its required redundant feature is inoperable within 4 hours from discovery of diesel generator inoperability concurrent with inoperability of redundant required feature; and determine the OPERABLE diesel generators are not inoperable due to a common cause failure or ~~and if the diesel generator became inoperable due to any cause other than preventive maintenance or testing~~, demonstrate the OPERABILITY of the remaining OPERABLE diesel generators by performing Specification 4.8.1.1.2a.2) within 24 hours~~*~~, restore the diesel generator to OPERABLE status within 7 days and within 10 days from discovery of failure to meet the LCO or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

01-06-LS7
01-50-LS17
01-05-LS6
01-32-M
DC 3.8-ED1
01-05-LS6

c. With one offsite circuit and one diesel generator of the above required A.C. electrical power sources inoperable, in addition to the requirements of ACTIONS a. and b. above, ~~demonstrate the OPERABILITY of the remaining A.C. sources by performing Specification 4.8.1.1.1a. within 1 hour and at least once per 8 hours there after; and if the diesel generator became inoperable due to any cause other than preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generators by performing Specification 4.8.1.1.2a.2) within 8 hours;~~ restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore the other A.C. power source (offsite circuit or diesel generator) to OPERABLE status in accordance with ACTION a. or b., as appropriate with the time requirement of that ACTION statement based on the time of initial loss of the remaining inoperable A.C. power source. A successful test of diesel OPERABILITY per Specification 4.8.1.1.2a.2) performed under this ACTION statement for OPERABLE diesels or a restored to OPERABLE diesel satisfies the diesel generator test requirement of ACTION a. or b.

01-08-LS8

d. With one diesel generator inoperable in addition to ACTION b~~. or c.~~ above verify that: 01-08-LS8

1. All required systems, subsystems, trains, components and devices that depend on the remaining OPERABLE diesel generators as a source of emergency power are also OPERABLE, and

2. When in MODE 1, 2, or 3 that at least two auxiliary feedwater pumps are OPERABLE.

If these conditions are not satisfied within ~~2~~ 4 hours be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. 01-06-LS7

~~*This test is required to be completed regardless of when the inoperable diesel generator is restored to operability~~.

01-05-LS6
DC 3.8-ED1

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.1 AC Sources - Operating

BASES

~~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~~

~~Not used.~~ DC 3.8-ED1

~~Required Action A.2, 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 included.~~

(Continued)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.1 AC Sources - Operating

BASES

ACTIONS

A.2 (continued)

~~Not used.~~

DC 3.8-ED1

~~The Completion Time for Required Action A.2 is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." In this Required Action, the Completion Time only begins on discovery that both:~~

~~a. The train has no offsite power supplying it loads; and~~

~~b. A required feature on the other train is inoperable.~~

~~If at any time during the existence of Condition A (one offsite circuit inoperable) a redundant required feature subsequently becomes inoperable, this Completion Time begins to be tracked.~~

~~Discovering no offsite power to one train of the onsite Class 1E Electrical Power Distribution System coincident with one or more inoperable required support or supported features, or both, that are associated with the other train that has offsite power, results in starting the Completion Times for the Required Action. Twenty-four hours is acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.~~

~~The remaining OPERABLE offsite circuit and DGs are adequate to supply electrical power to Train A and Train B of the onsite Class 1E Distribution System. The 24 hour Completion Time takes into account the component OPERABILITY of the redundant counterpart to the inoperable required feature. Additionally, the 24 hour Completion Time takes into account the capacity and capability of the remaining AC~~

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.1 AC Sources - Operating

BASES

ACTIONS

A.2 (continued)

potential for a loss of offsite power is increased, with attendant potential for a challenge to the unit safety systems. In this Condition, however, the remaining OPERABLE offsite circuit and DGs are adequate to supply electrical power to the onsite Class 1E Distribution System.

The 72 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

DC 3.8-ED1

The second Completion Time for Required Action A.~~3~~ 2 establishes a limit on the maximum time allowed for any combination of required AC power sources to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition A is entered while, for instance, a DG is inoperable and that DG is subsequently returned OPERABLE, the LCO may already have been not met for up to ~~72 hours~~ 7 days. This could lead to a total of ~~144 hours~~ 10 days, since initial failure to meet the LCO, to restore the offsite circuit. At this time, a DG could again become inoperable, the circuit restored OPERABLE, and an additional ~~72 hours~~ 7 days (for a total of ~~9~~ 17 days) allowed prior to complete restoration of the LCO. The ~~6~~ 10 day Completion Time provides a limit on the time allowed in a specified condition after discovery of failure to meet the LCO. This limit is considered reasonable for situations in which Conditions A and B are entered concurrently. The "AND" connector between 72 hour and ~~6~~ 10 day Completion Times means that both Completion Times apply simultaneously, and the more restrictive Completion Time must be met.

~~As in Required Action A.2, t~~The Completion Time allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." This will result in establishing the

(Continued)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.1 AC Sources - Operating

BASES

and SR 3.8.1.9.c are steady state voltage and frequency values to which the system must recover following load rejection. The ~~[18 month]~~ 24 DC-ALL-005 Frequency is consistent with the ~~recommendation~~ INTENT of Regulatory Guide 1.108 (Ref. 9). DC 3.8-ED1

This SR is modified by two Notes. The reason for Note 1 is that during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. ~~Credit may be taken for unplanned events that satisfy this SR. This Note does not prohibit the application of LCO 3.0.6.~~ Q3.8.1-33

In order to ensure that the DG is tested under load

(Continued)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.1 AC Sources - Operating

BASES

In order to ensure that the DG is tested under load conditions that are as close to design basis conditions as possible, testing must be performed using a power factor ≤ ~~[0.9]~~ 0.87 lagging. This power factor is chosen to be representative of the actual design basis ~~inductive~~ loading that the DG would experience. DC-3.8-E01

DC-AU-005

The ~~[~~18 24 month~~]~~ Frequency is consistent with the ~~recommendation~~ intent of Regulatory Guide 1.108 (Ref. 9) and is intended to be consistent with expected fuel cycle lengths.

~~This SR has been modified by a Note. The reason for the Note is that during operation with the reactor critical, performance of this SR could cause perturbation to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. Credit may be taken for unplanned events that satisfy this SR. This Note does not prohibit the application of LCO 3.0.5.~~ Q3.8.1-33

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

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

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

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

(Continued)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.1 AC Sources - Operating

BASES

~~or residual heat removal (RHR) systems performing a decay heat removal function are not desired to be realigned to the ECCS mode of operation.~~ In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the DG systems to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

intent DC-ALL-005

The Frequency of ~~[18~~ 24 months~~]~~ is consistent with the ~~recommendations~~ intent of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(1), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. DC3.8-ED1

This SR is modified by two Notes. The reason for Note 1 is to minimize wear and tear on the DGS during testing. For the purpose of this testing, the DGS must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained

(Continued)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.1 AC Sources - Operating

BASES

DC 3.8-ED1

SURVEILLANCE REQUIREMENTS

SR 3.8.1.14 (continued)

DC-ALL-005

INTENT

The ~~[18~~ 24 ~~month]~~ Frequency is consistent with the ~~recommendations~~ intent of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(3), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This Surveillance is modified by ~~two~~ a ~~Notes~~ Note. The ~~Note 1~~ Note states that momentary transients due to changing bus loads do not invalidate this test. Similarly, momentary power factor transients above the power factor limit will not invalidate the test. ~~The reason for Note 2 is that during operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. Credit may be taken for unplanned events that satisfy this SR. This Note does not prohibit the application of LCO 3.0.5.~~

Q3.8.1-33

SR 3.8.1.15

This Surveillance demonstrates that the diesel engine can restart from a hot condition, such as subsequent to shutdown from normal Surveillances, and achieve stability by reaching the required voltage and frequency within ~~[10]~~ 13 seconds. The ~~[10]~~ 13 second time is derived from the requirements of the accident analysis to respond to a design basis ~~large break LOCA~~ accident. The ~~[18~~ 24 ~~month]~~ Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(5).

DC-ALL-005

This SR is modified by two Notes. Note 1 ensures that the test is performed with the diesel sufficiently hot. The load band is provided to avoid routine overloading of the DG. Routine overloads may result in more frequent teardown inspections in accordance with vendor

The acceptance criteria represents the recovery of the DG and the power distribution system following a start and load transient. This assures the ability of the system to undergo further transients. Actual steady state operation is expected to achieve a level of stability closer to the nominal 60 Hz value.

DC 3.8-ED

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.1 AC Sources - Operating

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.1.16

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

The Frequency of ~~[18]~~ 24 months~~]~~ is consistent with the intent ~~recommendations~~ of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(6), and takes into consideration unit conditions required to perform the Surveillance. DC-ALL-005 DC 3.8-E01

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. ~~Credit may be taken for unplanned events that satisfy this SR~~ ~~This Note does not prohibit the application of LCO 3.0.5.~~ Q3.8.1-33

SR 3.8.1.17

Demonstration of the test mode override ensures that the DG availability under accident conditions will not be compromised as the result of testing. A Safety Injection signal, received while the DG is operating in a test mode, results in the auxiliary breaker opening and the emergency loads automatically sequencing onto the DG. ~~and the DG will automatically reset to ready to load operation if a LOCA actuation signal is received during operation in the test~~

(Continued)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.1 AC Sources - Operating

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.1.17 (continued)

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

DC-ALL-005

The ~~[18~~ 24 ~~month]~~ Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(8), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. ~~Credit may be taken for unplanned events that satisfy this SR~~ ~~This Note does not prohibit the application of LCO 3.0.5~~

Q3.8.1-33

SR 3.8.1.18

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

With an ESF timer found to be outside the range of acceptable settings, the corresponding DG shall be declared inoperable in MODES 1, 2, 3, and 4, and the corresponding CONDITION followed. With an Auto Transfer timer found to be outside

ARE Q3.8.1-23

The timing limits for the load sequence timers ~~is~~ are found in table B3.8.1-1 (ESF Timers) and table B3.8.1-2 (Autotransfer Timers).

DC 3.8-ED1

add 2 page insert

(Continued)

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.1 AC Sources - Operating

Q3.8.1-35

BASES

This action is necessary only for that time required to open the breaker on the affected load.

the range of acceptable settings, the corresponding DG shall be declared inoperable for all MODES.

intent DC 3.8-ED1

The Frequency of ~~[18~~ 24 ~~months]~~ is consistent with the ~~recommendations~~ intent of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(2), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. ~~Credit may be taken for unplanned events that satisfy this SR~~ ~~This Note does not prohibit the application of LCO 3.0.5.~~

Q3.8.1-33

(Continued)

BASES

The AC power requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.

1 DC 3.8-EA1 Q3.8.2-02

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 irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated 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~~ the required ~~ESF train~~ Class 1E bus(es). ~~Although two trains are required by LCO 3.8.10, the one train with~~ If two Class 1E AC electrical power distribution subsystems are required by LCO 3.8.10, and one Class 1E AC electrical power distribution subsystem has offsite power available, the remaining Class 1E AC electrical power distribution subsystem may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS and fuel movement. By ~~the allowance of~~ allowing 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.

ACTIONS (continued)

A.2.1, A.2.2, A.2.3, A.2.4, B.1, B.2, B.3, and B.4

With the offsite circuit not available to all required AC electrical power distribution subsystems ~~trains~~, the option would still exist

BASES

de-energized AC electrical power distribution subsystem train. DC 3.8-ED1

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.2.1

SR 3.8.2.1 ~~requires~~ lists the SRs from LCO 3.8.1 that are ~~necessary~~ applicable for ensuring the OPERABILITY of the AC sources in other than MODES 1, 2, 3, and 4. SR 3.8.1.8 is not required to be met since only one offsite circuit is required to be OPERABLE. SR 3.8.1.17 is not required to be met because the required OPERABLE DG~~(s)~~ is not required to undergo periods of being synchronized to the offsite circuit. SR 3.8.1.20 is excepted because starting independence is not required with the DG~~(s)~~ that is not required to be operable. SR 3.8.1.12, SR 3.8.1.13, SR 3.8.1.18 (for ESF timers), and SR 3.8.1.19 are excepted because SI response functions are not required to be ~~operable~~ OPERABLE. DC 3.8-ED1

This SR is modified by a Note listing applicable SRs from LCO 3.8.1 that are not required to be performed. The reason for the Note is to preclude requiring the OPERABLE DG~~(s)~~ from being paralleled with the offsite power network or otherwise rendered inoperable during performance of an SR~~s, and to~~. The note would also preclude deenergizing a required 4160 V ESF bus or disconnecting a required offsite circuit ~~during~~ for performance of an SR~~s~~. With limited AC sources available, a single event could compromise both the required circuit and the DG. The note does not except the requirement for the DG, 4160 V ESF bus, or offsite circuit to be capable of performing the particular function, just that the capability of need not be demonstrated while that source of power is being relied on to support meeting the LCO. ~~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

Each DG has ~~an~~ two redundant 100% capacity air start systems and a turbocharger air assist system with adequate capacity for ~~five~~ three successive start attempts each on the DG without recharging the air start receiver~~(s)~~ or the turbocharger air assist air receiver.

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, and turbocharger air assist subsystems support the operation of the standby AC power sources, they satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii) ~~the NRC Policy Statement~~.

DC 3.8-EA1

LCO

Stored diesel fuel oil is required to have sufficient supply for 7 days of ~~full load~~ minimum ESF systems operation. The required combined stored diesel fuel oil is a contained quantity with different storage requirements for unit operation in MODE 1, 2, 3, and 4 and for MODE 5 and 6. With both units operating in MODE 1, 2, 3, and 4, the required level is ≥ 65,000 gallons. With one unit operating in MODE 1, 2, 3, or 4, and the other unit in MODE 5 or 6, the required fuel oil level is 33,000 gallons plus 26,000 gallons, for a total of 59,000 gallons combined storage. With both units in MODE 5 or 6, the required fuel oil level is 52,000 gallons. The required combined stored fuel oil

(Continued)

BASES

B.1

The design of the 125 VDC electrical power distribution system is such that a battery can have associated with it a full capacity charger powered from its associated 480 VAC vital bus or an alternate full capacity charger powered from another 480 VAC vital bus. However operation in the latter condition or, with two chargers powered by the same ~~vital~~ bus is limited to 14 days.

DC 3.8-EA 1

BC.1 and BC.2 vitaL

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

DC-ALL-005

INTENT

The Surveillance Frequency of ~~[18~~ 24 months~~]~~ is consistent with the ~~recommendations~~ of Regulatory Guide 1.32 (Ref. 10) and Regulatory Guide 1.129 (Ref. 11), which state that the battery service test should be performed during refueling operations or at some other outage, with intervals between tests, not to exceed ~~[18~~ 24 months~~]~~.

(Continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.9.1

This Surveillance verifies that the ~~[required]~~ Class 1E AC, DC, and 120 VAC vital bus electrical power distribution systems are functioning properly, with the correct circuit breaker alignment. The correct breaker alignment ensures the appropriate separation and independence of the electrical divisions is maintained, and the appropriate voltage is available to each required bus. The verification of proper voltage availability on the buses ensures that the required voltage is readily available for motive as well as control functions for critical system loads connected to these buses. The 7 day Frequency takes into account the redundant capability of the AC, DC, and 120 VAC vital bus electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions.

REFERENCES

1. FSAR, Chapter 6.
2. FSAR, Chapter 15.
3. Regulatory Guide 1.93, December 1974.

DC 3.8-E01

TABLE B 3.8.9-1

THE TABLE ON THE NEXT PAGE DEFINES THE GENERAL FEATURES OF THE AC AND DC ELECTRICAL POWER DISTRIBUTION SYSTEMS.

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: DC 3.9-001(new) **APPLICABILITY:** DC

REQUEST:

The NSHC text for CN 12-10-LS-9 is not correct for this change. This change provides the correct addition.

ATTACHED PAGES:

Encl. 4 30, 31

Replace with INSERT PAGES.

DC 3.9-001

IV. SPECIFIC NO SIGNIFICANT HAZARDS CONSIDERATIONS

NSHC LS9
10CFR 50.92 EVALUATION
FOR
TECHNICAL CHANGES THAT IMPOSE LESS RESTRICTIVE
REQUIREMENTS WITHIN THE TECHNICAL SPECIFICATIONS

The Applicability is revised to not require the boron concentration to be greater than 2000 ppm unless fuel in the pool has been moved and a position verification has not been performed. The boron concentration is required to prevent inadvertent criticality due to a mis-positioned high enrichment fuel assembly. If a pool verification has confirmed that the fuel bundles are in the correct positions, no inadvertent criticality can occur due to the design of the racks. The ITS further require suspension of fuel movement and either restoration of the pool boron concentration or the verification of storage of the high enrichment fuel in the proper pool location.

NO SIGNIFICANT HAZARDS

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 10CFR 50.92© 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 changes do not alter the plant configuration, operation or function of any safety system. Consequently the changes do not significantly increase the probability of an accident as defined in the FSAR. Maintenance of the fuel pool boron concentration is an accident prevention feature, i.e., criticality, and is only required to be maintained if there is a potential for a mispositioned high enrichment fuel assembly. If the fuel positions have been verified the storage racks are designed to prevent criticality.

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

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

   The proposed changes do not require physical alteration to any plant system or change the method by which any safety-related system performs its function.

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

Replace with insert pages

DC 3.9-001

IV. SPECIFIC NO SIGNIFICANT HAZARDS CONSIDERATIONS

NSHC LS9
(Continued)

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

The proposed changes do not alter any basic regulatory requirements or change any accident analysis assumptions, initial conditions or results. Consequently, the proposed changes do not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

Based upon the preceding information, it has been determined that the proposed changes associated with NSHC "LS9" do not involve a significant increase in the probability or consequences of an accident previously evaluated, create the possibility of a new or different kind of accident from any accident previously evaluated, or involve a significant reduction in margin of safety. Therefore, it is concluded that the proposed change satisfy the no significant hazards consideration standards of 10CFR 50.92© and, accordingly, a no significant hazards consideration finding is justified.

IV. SPECIFIC NO SIGNIFICANT HAZARDS CONSIDERATIONS

NSHC LS-9
10 CFR 50.92 EVALUATION
FOR
TECHNICAL CHANGES THAT IMPOSE LESS RESTRICTIVE
REQUIREMENTS WITHIN THE TECHNICAL SPECIFICATIONS

To assure charcoal adsorber OPERABILITY, the SR requires that a laboratory analysis be performed and the results obtained within 31 days of removing the charcoal sample. The sample must be sent to an offsite laboratory for this analysis. It is proposed that the time requirement of "within 31 days after removal" for completion of laboratory analyses be deleted. This requirement is intended to avoid extended plant operation with degraded charcoal filters. This requirement is not contained in the ITS nor is it contained in the Regulatory Guide 1.52 or the applicable ANSI standards. There is no safety significant basis for maintaining this time limit as a Technical Specification requirement. Laboratory analyses are performed under contract with a laboratory on a prompt basis, and it is not necessary to prescribe a time limit within Technical Specifications for completing the analysis. Failure to complete an analysis within 31 days has insignificant safety consequences because the results would be available within approximately the same time period and it is very unlikely that the charcoal would be degraded to the extent that there would be a complete loss of a safety function.

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 10CFR 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 does not result in any hardware changes or changes to operating methodologies. This revision does not affect an accident initiator of any analyzed accident. The revision recognizes that the frequency of this surveillance will not affect the probability of any accident.

IV. SPECIFIC NO SIGNIFICANT HAZARDS CONSIDERATIONS

NSHC LS-9
(continued)

In addition, the results of charcoal filter testing would be available on approximately the same schedule as before. Thus, the proposed change would not have a significant effect on the availability of the filters to perform as assumed following an accident.

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

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

   The proposed change does not require physical alteration to any plant system or change the method by which any safety-related system performs its function.

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

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

   The proposed change would continued to assure that the charcoal filters perform as required although the time period for obtaining test results would be removed from Technical Specifications. However, the results would be available on approximately the same schedule as before. Consequently, it does not have significant effect on a margin of safety.

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

NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

Based on the above evaluation, it is concluded that the activities associated with NSHC "LS-9" 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.

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: DC ALL-001 **APPLICABILITY:** DC

REQUEST:

LAs 119/117 and 118/116 were issued 7/13/97 and addressed CTS surveillance interval increases due to 24-month fuel cycles. These changes on pages affected by NRC comment numbers are indicated with "DC-ALL-001." These changes were previously submitted to the NRC in an errata to LAR 97-09 via DCL-98-003 (dated January 8, 1998).

REQUEST (Supplement): SR 3.9.4.2 should be shown as having a 24 month frequency consistent with the CTS (CTS SR 4.9.4.b which has a frequency per SR 4.6.3.2.c which was changed to each refueling interval per LA 119/117).

ATTACHED PAGES:

Encl. 2	3/4 9-4
Encl. 5A	3.9-6
Encl. 5B	B 3.9-10, B 3.9-11

REFUELING OPERATIONS

3/4.9.4 CONTAINMENT PENETRATIONS

LIMITING CONDITION FOR OPERATION

3.9.4 The containment penetrations shall be in the following status:

a. The equipment ~~door~~ hatch closed and held in place by a minimum of four bolts, ED

b. A minimum of one door in each airlock is closed, and

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be either: * Q 3.9-7 ~~04-10-LS20~~

1) Closed by an automatic isolation valve, blind flange, or manual valve, or equivalent, or 04-09-LS14

2) Be capable of being closed by an OPERABLE ~~automatic~~ containment ventilation isolation valve. 04-01-LG

APPLICABILITY: During CORE ALTERATIONS ~~,~~ or movement of irradiated fuel within containment~~, movement of the reactor vessel head over fuel, or movement of the upper internals over fuel~~. 04-08-LG

ACTION: With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS, movement of irradiated fuel in containment~~, movement of the reactor vessel head over fuel, or movement of the upper internals over fuel~~. 04-08-LG

SURVEILLANCE REQUIREMENTS

4.9.4 Each of the above required containment penetrations (*) shall be determined to be ~~either in its closed/isolated condition or capable of being closed by an OPERABLE automatic containment ventilation isolation valve within 100 hours prior to the start of and at least~~ in the required status once per 7 days ~~during CORE ALTERATIONS, movement of irradiated fuel in containment, movement of the reactor vessel head over fuel, or movement of the upper internals over fuel by:~~ 04-10-LS20 04-02-LS4

~~a. Verifying the penetrations are in their closed/isolated condition, or~~

(new) Verify each required containment purge and exhaust isolation valve actuates to the isolation position by 04-03-LS5

EACH REFUELING INTERVAL DC-All-001

~~b.~~ ~~T~~testing the containment ventilation isolation valves per Specification 4.6.3.2~~e~~. at least once ~~per 18 months~~ by use of an actual or simulated signal. 04-04-TR1

* Except for penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls. ~~04-10-LS20~~

Q 3.9-7

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.4.1	Verify each required containment penetration is in the required status ~~except for containment penetrations that are open under administrative controls.~~	7 days ~~3.9-11~~ Q 3.9-7
SR 3.9.4.2	Verify each required containment purge and exhaust ventilation isolation valves actuates to the isolation position on an actual or simulated actuation signal.	~~18~~ 24 months B-PS DC-ALL-001

BASES

ACTIONS

A.1 and A.2

If the containment equipment hatch, air locks, or any containment penetration that provides direct access from the containment atmosphere to the outside atmosphere is not in the required status, including the Containment Purge and Exhaust Isolation System not capable of automatic actuation when the purge and exhaust valves are open, the unit must be placed in a condition where the isolation function is not needed. This is accomplished by immediately suspending CORE ALTERATIONS and movement of irradiated fuel assemblies within containment. Performance of these actions shall not preclude completion of movement of a component to a safe position.

SURVEILLANCE REQUIREMENTS

SR 3.9.4.1

This Surveillance demonstrates by inspection or administrative means that each of the containment penetrations required to be in its closed position is in that position. The Surveillance on the open purge and exhaust valves will demonstrate that the valves are not blocked from closing. Also the Surveillance will demonstrate that each valve operator has motive power, which will ensure that each valve is capable of being closed by an OPERABLE automatic containment purge and exhaust isolation signal. ~~The SR specifies that containment penetrations that are open under administrative controls are not required to meet the SR during the time the penetrations are open.~~

Q3.9-7

The Surveillance is performed every 7 days during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment. The Surveillance interval is selected to be commensurate with the normal duration of time to complete fuel handling operations. A surveillance before the start of refueling operations will provide two or three surveillance verifications during the applicable period for this LCO. As such, this Surveillance ensures that a postulated fuel handling accident that releases fission product radioactivity within the containment will not result in a release of fission product radioactivity to the environment.

SR 3.9.4.2

This Surveillance demonstrates that each containment purge and exhaust valve actuates to its isolation position on manual initiation or on an actual or simulated high radiation signal. The 18 month Frequency maintains consistency with other similar ESFAS instrumentation and valve testing requirements. In LCO 3.3.6, the Containment Purge and Exhaust Isolation instrumentation requires a CHANNEL CHECK every 12 hours and a COT every 92 days to ensure the channel OPERABILITY during refueling operations. Every 18 months a CHANNEL CALIBRATION is

24

DC All-001

(Continued)

ES

24 Delete DC-ALL-001

SURVEILLANCE REQUIREMENTS (continued)

performed. The system actuation response time is demonstrated every 18 months, during refueling, on a STAGGERED TEST BASIS. SR 3.6.3.5 demonstrates that the isolation time of each valve is ~~(continued)~~ in Q 3.9.G-1 accordance with the In service Testing Program requirements. These Surveillances performed during MODE 6 will ensure that the valves are capable of closing after a postulated fuel handling accident to limit a release of fission product radioactivity from the containment.

REFERENCES

1. ~~GPU Nuclear Safety Evaluation SE 0002000 001, Rev. 0, May 20, 1988.~~
Design Criteria Memorandum T-16, Containment Functions.

2. FSAR, Section ~~[15.4.5]~~.

3. NUREG-0800, Section 15.7.4, Rev. 1, July 1981.

ADDITIONAL INFORMATION COVER SHEET

ADDITIONAL INFORMATION NO: DC 5.0-005 (new) **APPLICABILITY:** DC

REQUEST:

DCPP LA 129/127 was approved February 19, 1999. This Amendment is Applicable only during DCPP Units 1 and 2, Cycles 10 and 11. This revision provides the ITS mark-ups to reflect the changes to the Steam Generator Tube Surveillance Program (ITS 5.5.9 and 5.6.10) resulting from LA 129/127.

ATTACHED PAGES:

Encl. 5A 5.0-17, 5.0-20, 5.0-39

5.5 Programs and Manuals (continued)

and inspecting at least the minimum number of SGs specified in Table 5.5.9-1.

b. SG Tube Sample Selection and Inspection - The SG tube minimum sample size, inspection result classification, and the corresponding action required shall be as specified in Table 5.5.9-2. The inservice inspection of SG tubes shall be performed at the frequencies specified in Specification 5.5.9.c and the inspected tubes shall be verified acceptable per the acceptance criteria of Specification 5.5.9.d. The tubes selected for each inservice inspection shall include at least 3% of the total number of tubes in all SGs; the tubes selected for these inspections shall be selected on a random basis except:

1. Where experience in similar plants with similar water chemistry indicates critical areas to be inspected, then at least 50% of the tubes inspected shall be from these critical areas;

2. The first sample of tubes selected for each inservice inspection (subsequent to the preservice inspection) of each SG shall include:

a) All nonplugged tubes that previously had detectable wall penetrations (greater than 20%).

b) Tubes in those areas where experience has indicated potential problems, ~~and~~ DC 5.0-005

c) A tube inspection (pursuant to Specification 5.5.9.d.1.h) shall be performed on each selected tube. If any selected tube does not permit the passage of the eddy current probe for a tube inspection, this shall be recorded and an adjacent tube shall be selected and subjected to a tube inspection~~.~~ ; DC5.0-003

Insert DC5.0-005 5.5-18

3. The tubes selected as the second and third samples (if required by Table 5.5.9-2) during each inservice inspection may be subjected to a partial tube inspection provided:

a) The tubes selected for these samples include the tubes from those areas of the tube sheet array where tubes with imperfections were previously found, and

(Continued)

Enclosure 5A of ITS 5.0, Page 5.0-17, Item b.2

INSERT for ITS 5.5.9.b.2:

5.5.9 b.2.d) Indications left in service as a result of application of the tube support plate voltage-based repair criteria shall be inspected by bobbin coil probe during all future refueling outages.

5.5.9 b.2.e) Tubes identified as W* tubes having a previously identified indication within the W* length shall be inspected using a rotating pancake coil (RPC) probe for the full length of the W* region during all future refueling outages. * **

DC 5.0-005

* APPLICABLE FOR UNITS 1 AND 2, CYCLES 10 AND 11 ONLY.

DC 5.0-005

** IN-SITU testing will BE PERFORMED IN ACCORDANCE with PG&E LETTER DCL 98-148 DATED OCTOBER 22, 1998

DC 5.0-005

5.5 Programs and Manuals (continued)

e) Defect means an imperfection of such severity that it exceeds the plugging limit. A tube containing a defect is defective.

f) Plugging Limit means the imperfection depth at or beyond which the tube shall be removed from service and is equal to 40% of the nominal tube wall thickness.

g) Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of a Double Design Earthquake, a loss-of-coolant accident, or a steam line or feedwater line break as specified in 5.5.9.c.3, above.

h) Tube Inspection means an inspection of the SG tube from the tube end (hot leg side) completely around the U-bend to the top support of the cold leg; ~~and~~ DC 5.0-005

i) Preservice Inspection means an inspection of the full length of each tube in each SG performed by eddy current techniques prior to service to establish a baseline condition of the tubing. This inspection shall be performed after the field hydrostatic test and prior to initial Power Operation using the equipment and techniques expected to be used during subsequent inservice inspections. ; DC 5.0-003

Insert DC 5.0-005 5.5-18

2. The SG tube integrity shall be determined after completing the corresponding actions (plug all tubes exceeding the plugging limit and all tubes containing through-wall cracks) required by Table 5.5.9-2.

e. Reports

The contents and frequency of reports concerning the SG tube surveillance program shall be in accordance with Specification 5.6.10.

1) DC 5.0-005 5.5-18

This definition does not apply to tube support plate intersections for which the voltage-based repair criteria are being applied. Refer to 5.5.9.d.1.j for the repair limit applicable to these intersections.

DC 5.0-003

5.5.9.d.1.k

2) This definition does not apply to the portion of the tube within the tubesheet below the W* length. Acceptable tube wall degradation within the W* length shall be defined as in ~~Specification 4.4.5.4a.11~~. *

* Applicable for units 1 and 2, cycles 10 and 11 only.

(Continued) DC 5.0-005

where :

VURL = upper voltage repair limit

VLRL = lower voltage repair limit

VMURL = mid-cycle upper voltage repair limit based on time into cycle

VMLRL = mid-cycle lower voltage repair limit based on VMURL and time into cycle

Δt = length of time since last scheduled inspection during which VURL and VLRL were implemented

CL = cycle length (the time between two scheduled steam generator inspections)

VSL = structural limit voltage

Gr = average growth rate per cycle length

NDE = 95% cumulative probability allowance for nondestructive examination uncertainty (i.e.,, a value of 20% has been approved by the NRC)

Implementation of these mid-cycle repair limits should follow the same approach as in TS 5.5.9.d.1.j (i), 5.5.9.d.1.j (ii), and 5.5.9.d.1.j (iii).

NOTE 1 : The lower voltage repair limit is 2.0 volts for 7/8 inch diameter tubing at DCPP Units 1 and 2.

NOTE 2 : The upper voltage repair limit is calculated according to the methodology in Generic Letter 95-05 as supplemented.

INSERT A : ITS 5.5.9.d.1.k

DC 5.0 - 005

INSERT A FOR ITS 5.5.9.d.1 (1 OF 2) DC 5.0-005

5.5.9.d.1.k(*) W* Plugging Limit is used for disposition of an alloy 600 steam generator tube for continued service that is experiencing predominately axially oriented inside diameter stress corrosion cracking confined within the tubesheet, below the bottom of the WEXTEX transition (BWT). As used in this specification:

(I) Bottom of WEXTEX Transition (BWT) is the highest point of contact between the tube and tubesheet at, or below the top-of-tubesheet as determined by eddy current testing.

(II) W* Length is the distance to the tubesheet below the BWT that precludes tube pull out in the event of a complete circumferential separation of the tube below the W* length. The W* length is conservatively set at: 1) an undegraded hot leg tube length of 5.2 inches for Zone A tubes and 7.0 inches for Zone B tubes, and 2) an undegraded cold leg tube length of 5.5 inches for Zone A tubes and 7.5 inches for Zone B tubes. Information provided in WCAP-14797, Revision 1, defines the boundaries of Zone A and Zone B.

(III) Flexible W* Length is the W* length adjusted for any cracks found within the W* region. The Flexible W* Length is the total RPC-inspected length as measured downward from the BWT, and includes NDE uncertainties and crack lengths within W* as adjusted for growth.

(IV) W* Tube is a tube with equal to or greater than 40% degradation within or below the W* length that is left in service, and degraded within the limits specified in Specification 4.4.5.4a.11)e.

(V) Within the tubesheet, the plugging (repair) limit is based on maintaining steam generator serviceability as described below:

1) For tubes to which the W* criteria are applied, the length of non-degraded tube below BWT shall be greater than or equal to the W* length plus NDE uncertainties and crack growth for the operating cycle.

2) Axial cracks in tubes returned to service using W* shall have the upper crack tip below the BWT by at least the NDE measurement uncertainty, and below the TTS by at least the NDE measurement uncertainty and crack growth allowance, such that at the end of the subsequent operating cycle the entire crack remains below the tubesheet secondary face.

3) Resolvable, single axial indications (multiple indications must return to the null point between individual cracks) within the flexible W* length can be left in service. Alternate RPC coils or an ultrasonic test (UT) inspection can be used to demonstrate return to null point between multiple axial indications or the absence of circumferential involvement between axial indications.

* APPLICABLE FOR UNITS 1 AND 2, CYCLES 10 AND 11.

INSERT A FOR ITS 5.5.9.d.1 (2 OF 2)

DC 5.0-005

4) Tubes with inclined axial indications less than 2.0 inches long (including the crack growth allowance) having inclination angles relative to the tubve axis of <45 degrees minus the NDE uncertainty, ΔNDE_{CA}, on the measurement of the crack angle can be left in service. Tubes with two or more parallel (overlapping elevation), inclined axial cracks shall be plugged or repaired. For application of the 2.0 inch limit, an inclined indication is an axial crack that is visually inclined on the RPC C-scan, such that an angular measurement is required, and the measured angle exceeds the measurement uncertainty of ΔNDE_{CA}.

5) Circumferential, volumetric, and axial indications with inclination angles greater than (45 degrees - ΔNDE_{CA}) within the flexible W* length shall be plugged or repaired.

6) Any type of combination of the tube degradation below the W* length is acceptable.

5.6 Reporting Requirements (continued)

~~5.6.10 Steam Generator Tube Inspector Report~~

~~Reviewer's Note: Reports required by the Licensee's current licensing basis regarding steam generator tube surveillance requirements shall be included here. An appropriate administrative controls format should be used.~~

~~Reviewer's Note: These reports may be required covering inspection, test, and maintenance activities. These reports are determined on an individual basis for each unit and their preparation and submittal are designated in the Technical Specifications.~~

5.6.10 Steam Generator (SG) Tube Inspection Report ED

a. Within 15 days following the completion of each inservice inspection of SG tubes, the number of tubes plugged in each SG shall be reported to the Commission. B-PS

b. The complete results of the SG tube inservice inspection shall be submitted to the Commission in a report within 12 months following completion of the inspection. This Special Report shall include:

1) Number and extent of tubes inspected,

2) Location and percent of wall-thickness penetration for each indication of an imperfection, and

3) Identification of tubes plugged.

c. Results of SG tube inspections, which fall into Category C-3 shall be reported in a Special Report to the Commission within 30 days and prior to resumption of plant operation. This report shall provide a description of investigations conducted to determine cause of the tube degradation and corrective measures taken to prevent recurrence. DC 5.0-003

Insert 5.5-18

Enclosure 5A of ITS 5.0, Page 5.0-39

(REDUCED BY ESTIMATED LEAKAGE BY ALL OTHER ALTERNATE REPAIR CRITERIA - *)

INSERT for ITS 5.6.10.d. :

DC 5.0-005

5.6.10.d. For implementation of the voltage-based repair criteria to tube support plate intersections, notify the NRC prior to returning the steam generators to service should any of the following arise :

1. If estimated leakage based on the projected end-of-cycle (or if not practical, using the actual measured end-of-cycle) voltage distribution exceeds the leak limit determined from the licensing basis dose calculation for the postulated main steamline break for the next operating cycle.

2. If circumferential crack-like indications are detected at the tube support plate intersections.

3. If indications are identified that extend beyond the confines of the tube support plate.

4. If indications are identified at the tube support plate elevations that are attributable to primary water stress corrosion cracking.

5. If the calculated conditional burst probability based on the projected end-of-cycle (or if not practical, using the actual measured end-of-cycle) voltage distribution exceeds 1 x 10^{-2}, notify the NRC and provide an assessment of the safety significance of the occurrence.

DC 5.0-005

e. (*) The results of the inspection of W* tubes shall be reported to the Commission ~~pursuant to Specification 6.9.2~~ within 90 days following return to service of the steam generators. This report shall include:

1) Identification of W* tubes.

2) W* inspection distance measured with respect to the BWT or the top of the tubesheet, whichever is lower.

3) Elevation and length of axial indications within the flexible W* distance and the angle of inclination of clearly skewed axial cracks (if applicable).

4) The total steam line break leakage for the limiting steam generator per WCAP-14797.

f. (*) The aggregate calculated steam line break leakage from application of all alternate repair criteria shall be reported to the Commission ~~pursuant to Specification 6.9.2~~ within 90 days following return to service of the steam generators.

* APPLICABLE FOR UNITS 1 AND 2, CYCLES 10 AND 11.

DC 5.0-005