TABLE 3.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
18. Safety Injection Input from ESF	2	1	2	1, 2	10
19. Reactor Coolant Pump Breaker Position Trip above P-7	1/breaker	2	1/breaker	1	9
20. Reactor Trip Breakers	2	1	2	1, 2	10, 12
	2	1	2	3*, 4*, 5*	11
21. Automatic Trip and Interlock Logic	2	1	2	1, 2	10
	2	1	2	3*, 4*, 5*	11
22. Reactor Trip System Interlocks					
a. Intermediate Range Neutron Flux, P-6	2	1	2	2##	8
b. Low Power Reactor Trips Block, P-7 P-10 Input	4	2	3	1	8#
P-13 Input	2	1	2	1	8#
c. Power Range Neutron Flux, P-8	4	2	3	1	8#
d. Power Range Neutron Flux, P-10	4	2	3	1, 2	8#
e. Turbine Impulse Chamber Pressure, P-13 (Input to P-7)	2	1	2	1	8#
23. Seismic Trip	3 directions (x,y,z) in 3 locations	2/3 locations one direction	2/3 locations all directions	1, 2	6#

Insert

TABLE 3.3-1 (Continued)

ACTION STATEMENTS (Continued)

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.

ACTION 10 - With the number of channels OPERABLE one less than the Minimum Channels OPERABLE requirement, be in at least HOT STANDBY within 6 hours; however, one channel may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.1.1, provided the other channel is OPERABLE.

ACTION 11 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or open the Reactor trip breakers within the next hour.

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. 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.

Insert

TABLE 4.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG 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 (15) ← insert	N.A.	1, 2, 3*, 4*, 5*
2. Power Range, Neutron Flux						
a. High Setpoint	S	D(2, 4), M(3, 4), Q(4, 6), R(4, 5)	Q(13)	N.A.	N.A.	1, 2
b. Low Setpoint	S	R(4)	S/U(1)	N.A.	N.A.	1###, 2
3. Power Range, Neutron Flux, High Positive Rate	N.A.	R(4)	Q(13)	N.A.	N.A.	1, 2
4. Power Range, Neutron Flux, High Negative Rate	N.A.	R(4)	Q(13)	N.A.	N.A.	1, 2
5. Intermediate Range, Neutron Flux	S	R(4, 5)	S/U(1)	N.A.	N.A.	1###, 2
6. Source Range, Neutron Flux	S	R(4, 5)	S/U(1),Q(9, 13)	N.A.	N.A.	2##, 3, 4, 5
7. Overtemperature ΔT	S	R(12)	Q(13)	N.A.	N.A.	1, 2
8. Overpower ΔT	S	R	Q(13)	N.A.	N.A.	1, 2
9. Pressurizer Pressure-Low	S	R	Q(13)	N.A.	N.A.	1
10. Pressurizer Pressure-High	S	R	Q(13)	N.A.	N.A.	1, 2
11. Pressurizer Water Level-High	S	R	Q(13)	N.A.	N.A.	1
12. Reactor Coolant Flow-Low	S	R	Q(13)	N.A.	N.A.	1

TABLE NOTATIONS

* - When the Reactor Trip System breakers are closed and the Control Rod Drive System is capable of rod withdrawal.

\## - 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 days.

(2) - Heat balance only, above 15% of RATED THERMAL POWER. 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.

(3) - Compare incore to excore axial flux difference above 15% of RATED THERMAL POWER at least once per 31 Effective Full Power days. Recalibrate 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.

(4) - Neutron detectors may be excluded from CHANNEL CALIBRATION.

(5) - Detector plateau curves shall be obtained and evaluated. 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.

(6) - Incore - Excore Calibration, above 75% of RATED THERMAL POWER 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.

(7) - Each train shall be tested at least every 62 days on a STAGGERED TEST BASIS.

(8) - The surveillance requirement is not applicable for a reactor startup from MODE 2 or 3.

(9) - Quarterly Surveillance in MODES 3*, 4* and 5* 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.

(10) - Setpoint verification is not applicable.

(11) - ~~At least once per 18 months and following maintenance or adjustment of the Reactor trip breakers,~~ The TRIP ACTUATING DEVICE OPERATIONAL TEST shall include verification of the independence of the Undervoltage trip and the Shunt trip.

(12) - CHANNEL CALIBRATION shall include the RTD bypass loops flow rate.

(13) - Each channel shall be tested at least every 92 days on a STAGGERED TEST BASIS.

(14) - These channels also provide inputs to ESFAS. Comply with the applicable MODES and surveillance frequencies of Specification 4.3.2.1 for any portion of the channel required to be OPERABLE by Specification 3.3.2.

(15) - **The TRIP ACTUATING DEVICE OPERATIONAL TEST shall independently verify the OPERABILITY of the undervoltage and shunt trip circuits for the Manual Reactor Trip Function. The test shall also verify the OPERABILITY of the Bypass Breaker trip circuit(s).**

Insert

ENCLOSURE 2

REACTOR TRIP BYPASS BREAKER TESTING

To assess the need to include bypass breaker testing in the technical specifications, the Westinghouse Owners Groups (WOG) has calculated the impact of the bypass breaker failure probability on the reactor trip system failure probability and concludes that the bypass breaker contribution is insignificant. These calculations are based on the reactor trip breaker fault tree model presented in Supplement 1 to WCAP-10271. The results of the calculations were previously submitted to the NRC in PG&E Letter DCL-85-360, dated December 6, 1985, and are repeated below for completeness.

In WOG Letter No. OG-106, which transmitted the WOG response to NRC questions on WCAP-10271, a typical Westinghouse PWR reactor trip unavailability is estimated to be 1.5 E-5. No credit was taken for operation of the bypass breaker in the evaluation from which these calculations were derived. The impact on the reactor trip system unavailability including the unavailability of the reactor trip bypass breakers was calculated with the following results:

1. The bypass breakers are placed in service only when one train of the reactor protection system (RPS) is in test. The only circumstance in which the bypass breaker could affect RPS unavailability is the cutset when one train is in test, a signal is generated in the operable redundant train and the main breaker fails to open.

2. The unavailability of the RPS attributable to failure of a main trip breaker with the opposite train in test is 3.7 E-7 or 2.5 percent of the total RPS unavailability (i.e., 1.5 E-5). This cutset constitutes the only configuration in which the bypass breaker can affect RPS unavailability.

3. Taking credit for the bypass breaker would reduce the probability value of this cutset to

   (3.7 E-7) (3.5 E-4) = 1.3 E-10

   where 3.5 E-4 is the unavailability of the bypass breaker assuming bimonthly testing

   or,

   (3.7 E-7) (3.5 E-3) = 1.3 E-9

   where 3.5 E-3 is the unavailability of the bypass breaker assuming testing on an 18 month interval.

Based on the above, it is PG&E's position that testing of bypass breakers is not necessary in the DCPP Technical Specification periodic test of the main trip breakers. As shown above, testing the bypass breakers on a 2 month or 18 month test interval will result in a E-9 or E-10 level contribution to the RPS

unavailability of approximately E-5. Alternatively, the RPS unavailability increase that occurs by increasing the bypass breaker failure probability from 0 percent to 100 percent is only 2.5 percent at the RPS level.

As an additional consideration, the NRC has recently published a Proposed Policy Statement on Technical Specification Improvements for Nuclear Power Reactors (52 FR 3788, dated February 27, 1987), which contains the following three criteria for determining the content of technical specifications:

> Criterion 1: Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.
>
> Criterion 2: A process variable that is an initial condition of a Design Basis Accident (DBA) or Transient Analyses that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.
>
> Criterion 3: A structure, system or component that is part of the primary success path and which functions or actuates to mitigate a Design Basis Accident or Transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

As discussed above, the bypass breakers are used only when one train of the RPS is being tested. They are designed to allow rod drive power to be shunted around an open reactor trip breaker while the breaker is being tested. The design also ensures that adequate reactor trip protection is maintained during the reactor trip breaker testing. Requirements for testing of bypass breakers clearly do not meet Criteria 1 or 2 for inclusion in the technical specifications. Because the bypass breakers are only used to effect testing of the reactor trip breakers, PG&E believes that bypass breaker testing requirements also do not meet the intent of Criterion 3, and therefore should not be included in the Diablo Canyon Technical Specifications.

PG&E concludes that inclusion of bypass breaker testing into the technical specifications is not required and plans to administratively control the bypass breaker testing outside of the technical specifications.