ATTACHMENT 1

CONSUMERS POWER COMPANY
PALISADES PLANT
DOCKET 50-255

TECHNICAL SPECIFICATIONS CHANGE REQUEST
RELOCATION OF CVCS REQUIREMENTS

Proposed Pages

9 Pages

3.1.9 SHUTDOWN COOLING (Continued)

An exception to the requirement for continuous circulation through the reactor core is provided. Both SDC and PCS circulation may be stopped for up to one hour provided actions are taken to prevent dilution or draining of the PCS and to avoid situations that could produce steam in the reactor vessel. During periods without forced circulation, admission of water with less Boron concentration than currently in the PCS could collect in a localized pocket and present a potential reactivity addition upon restart of forced circulation. Maintaining the temperature well below boiling ensures that availability of single phase natural circulation. The one hour time limit is not based on analysis. It was chosen to allow testing (such as test closure of containment isolation or shutdown cooling suction valves which require or result in stopping shutdown cooling flow) or minor maintenance, but to restrict the time without mixing and circulation of the PCS.

An exception to the requirement to have heat flow paths to the lake operable has also been provided, when below 200°F. Both heat flow paths may be made inoperable provided that adequate means are provided to assure that decay heat removal is available. In addition, core outlet temperature must be maintained below 200°F, PCS heatup rate must remain within Technical Specification limits, and circulation must be maintained through the reactor core.

In the condition where the PCS loops are filled and both steam generators have sufficient secondary water level, the PCS may be relied upon as the means of decay heat removal allowing maintenance or testing of SDC, Component Cooling or Service water components.

In the condition where the reactor vessel head has been removed and the refueling cavity has been filled for refueling, the mass of water in the pool provides a passive means of decay heat removal. When the cavity is filled to $\geq$ 647' elevation, this passive heat sink may be relied upon as the means of decay heat removal allowing maintenance or testing of SDC, Component Cooling, or Service water components.

During the exercising of these exceptions, operations which could drain the PCS and thereby cause a loss of, or a failure to regain, shutdown cooling are not allowed. This restriction against reducing PCS inventory does not apply to operations, such as pump flow testing, which may cause relatively minor changes in PCS inventory. The restriction is intended to apply to operations which might actually drain water from the PCS such that inventory could not be quickly regained.

References

(1) ABB/CE Letter OPS-91-0496, "Minimum S/G Level Required to Support Natural Circulation Decay Heat Removal."

(2) Consumers Power Company Engineering Analysis EA-GFP-90-03, Revision 0, "Technical Review of ABB/CE Letter OPS-91-046."

(Next Page is 3-29)

3.2 Deleted

3.3 EMERGENCY CORE COOLING SYSTEM

Applicability

Applies to the operating status of the emergency core cooling system.

Objective

To assure operability of equipment required to remove decay heat from the core in either emergency or normal shutdown situations.

Specifications

Safety Injection and Shutdown Cooling Systems

3.3.1 The reactor shall not be made critical, except for low-temperature physics tests, unless all of the following conditions are met:

a. The SIRW tank contains not less than 250,000 gallons of water with a boron concentration of at least 1720 ppm but not more than 2500 ppm at a temperature not less than 40°F.

b. All four Safety Injection tanks are operable and pressurized to at least 200 psig with a tank liquid level of at least 174 inches and a maximum level of 200 inches with a boron concentration of at least 1720 ppm but not more than 2500 ppm.

c. One low-pressure Safety Injection pump is operable on each bus.

d. One high-pressure Safety Injection pump is operable on each bus.

e. Both shutdown heat exchangers and both component cooling heat exchangers are operable.

f. Piping and valves shall be operable to provide two flow paths from the SIRW tank to the primary cooling system.

g. All valves, piping and interlocks associated with the above components and required to function during accident conditions are operable.

h. The Low-Pressure Safety Injection Flow Control Valve CV-3006 shall be opened and disabled (by isolating the air supply) to prevent spurious closure.

i. The Safety Injection bottle motor-operated isolation valves shall be opened with the electric power supply to the valve motor disconnected.

j. The Safety Injection miniflow valves CV-3027 and 3056 shall be opened with HS-3027 and 3056 positions to maintain them open.

3.17 INSTRUMENTATION SYSTEMS

Action (continued)

3.17.6.14 Deleted

3.17.6.15 With the Excore Deviation Alarm inoperable:

a) Calculate the QUADRANT POWER TILT using the excore readings at least once each 12 hours.

3.17.6.16 With one or two AXIAL SHAPE INDEX Alarm channels inoperable:

a) Restore the system to OPERABLE status prior to the next startup from COLD SHUTDOWN.

3.17.6.17 With one or two SDC suction valve interlock channels inoperable:

a) Place circuit breaker for the associated valve operator in "Racked Out" position. The breaker may be racked in only during operation of associated valve.

3.17.6.18 With one Power Dependant Insertion Alarm channel inoperable:

a) Verify that each regulating group is within the limits of Specification 3.10 within 15 minutes after movement of any regulating rod.

3.17.6.19 With one Fuel Pool Area Radiation Monitor inoperable:

a) Stop moving fuel within the Fuel Pool Area until monitoring capability is restored, and

b) Restore monitor to OPERABLE status or provide equivalent monitoring capability within 72 hours.

3.17.6.20 With one Containment refueling Radiation Monitor inoperable:

a) Stop REFUELING OPERATIONS in the containment.

3.17.6.21 If any action required by 3.17.6.1 through 3.17.6.18 is not met AND the associated completion time has expired, or if the number of OPERABLE channels is less than specified in the "Minimum OPERABLE Channels":

a) The reactor shall be placed in HOT SHUTDOWN within 12 hours, and

b) The reactor shall be placed in a condition where the affected equipment is not required, within 48 hours.

Table 3.17.6 (continued)

Instrumentation Operating Requirements for Other Safety Functions

No	Instrument	Minimum Required Channels	OPERABLE Channels	Applicable Conditions
10.	PORV Block Valve Position Indication	2/valve[a]	1/Valve	At all times, unless the PCS is depressurized and vented in accordance with Specification 3.1.8.
11.	SWS Break Detector	1[a]	0	HOT STANDBY and above.
12.	Flux-ΔT Power Comparator	4[a]	2	POWER OPERATION
13.	Rod Group Sequence Control/Alarm	2	1	When more than one CRDM is capable of rod withdrawal.
14.	Deleted			
15.	Excore Detector Deviation Alarm	1	0	Above 25% RATED POWER.
16.	AXIAL SHAPE INDEX Alarm	4[a]	2	Above 25% RATED POWER.
17.	SDC Suction Valve Interlocks	2	0	Above 200 psia PCS Pressure.
18.	Power Dependant Insertion Alarm	2	1	HOT STANDBY and above.
19.	Fuel Pool Area Radiation Monitor	2[b]	0	When fuel is in fuel pool area.
20.	Containment Refueling Radiation Monitor	2[a]	0	REFUELING OPERATIONS when irradiated fuel is in the Containment.

(a) Specifications 3.0.4 and 4.0.4 are not applicable.

(b) Specifications 3.0.3, 3.0.4, and 4.0.4 are not applicable.

Amendment No. ~~3~~, ~~67~~, ~~96~~, ~~98~~, ~~115~~, ~~118~~, ~~121~~, ~~124~~, ~~129~~, ~~136~~, ~~162~~,

Basis: Table 3.17.6 (continued)

The SPI system - composed of the SPI input module and the Host computer - also uses the signals from the primary rod position indication synchros to monitor the target rods for the correct group position relative to the other groups. If the group position is not correct relative to the position of the other regulating groups, an Out-of-Sequence alarm is annunciated on the computer system. If a primary rod position indication synchro input card were to lose power, the corresponding reed switch position from the SPI input module would be used in the Out-of-Sequence monitoring on the SPI system. The Out-of-Sequence alarm provides assurance that the operator is aware of abnormal regulating rod positioning.

When only one control rod is capable of being withdrawn, group sequencing and Out-of-Sequence alarm provide no useful function and are not required.

Action 3.17.6.13 - Group Rod Group Sequence Control/Alarm channel inoperable - When either sequence function is inoperable, one of the methods of assuring correct control rod alignment is not available. Adequate assurance of correct rod positioning is retained by manual verification of regulating rod position after each occurrence of rod motion.

14. Deleted

15. Excore Detector Deviation Alarm - An alarm is derived by the Excore Detector Deviation Alarm channel on excessive flux tilt. The Excore Detector Deviation Alarm compares the combined average power reading of all four Excore Power Range channels to the average from each channel, and alarms if the setpoint is exceeded. One channel being significantly different from the average could indicate a developing Quadrant Power Tilt (Tq).

The Excore Detector Deviation Alarm is required to be OPERABLE above 25% RATED POWER, when the Tq specification is applicable.

Action 3.17.6.15 - Excore Deviation Alarm inoperable - When the Excore Deviation Alarm is inoperable, continuous monitoring of Tq is unavailable. The function of Tq monitoring must be maintained by manually calculating Tq each 12 hours.

4.2 EQUIPMENT AND SAMPLING TESTS

TABLE 4.2.1

Minimum Frequencies for Sampling Tests

	Test	Frequency	FSAR Section REFERENCE
1. Reactor Coolant Samples	Gross Activity Determination	3 Times/7 days with a maximum of 72 hours between samples (T ave greater than 500°F).	None
	Gross Gamma by Fission Product Monitor	Continuous when T ave is greater than 500°F[1].	None
	Isotopic analysis for dose equivalent I-131 concentration	1/14 days during power operation	None
	Radiochemical for E determination	1/6 months[2]	None
	Isotopic analysis for iodine, including I-131, 133, 135	a) Once/4 hours, whenever dose equivalent I-131 exceeds 1.0 μCi/gram, and b) One sample between 2 and 6 hours following a thermal power change exceeding 15% of rated thermal power within a one hour period.	
	Chemistry (Cl and O_2)	3 times/7 days with a maximum of 72 hours between samples (T ave greater than 210°F).	
	Chemistry (F)	Once/30 days and following modifications or repair to the primary coolant system involving welding.	
2. Reactor Coolant Boron	Boron Concentration	Twice/Week	None
3. SIRW Tank Water Sample	Boron Concentration	Monthly	None
4. Deleted			
5. SI Tanks	Boron Concentration	Monthly	6.1.2

Amendment No. ~~20~~, ~~74~~, ~~113~~, ~~162~~,

4.2 EQUIPMENT SAMPLING AND TESTS

Table 4.2.2

Minimum Frequencies for Equipment Tests

Test		FSAR Section Frequency	REFERENCE
1. CONTROL RODS	Drop Times of All Full Length Rods	Refueling	7.6.1.3
2. CONTROL RODS	Partial Movement of all Rods (Minimum of 6 In)	Every 92 Days	7.6.1.3
3. Pressurizer Safety Valves	Set Point	One Each Refueling	4.3.7
4. Main Steam Safety Valves	Set Point	Five Each Refueling	4.3.4
5. Refueling System Interlocks	Functioning	Prior to Refueling Operations	9.11.4
6. Service Water System Valve Actuation on SIS and RAS	Functioning	Refueling	9.1.2
7. Primary System Leakage	Evaluate	Daily	4.7.1
8. Deleted			
9. Deleted			
10. Safety Injection Tank Level and Pressure	Verify that level and pressure indication is between independent high high/low alarms for level and pressure.	Each Shift	

Amendment No. ~~12~~, ~~81~~, ~~133~~, ~~152~~, ~~155~~, ~~157~~, ~~162~~, ~~180~~,

Table 4.17.6 (continued)

Instrumentation Surveillance Requirements for Other Safety Functions

	Instrument	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION
11.	SWS Break Detector	NA	18 months	18 months
12.	Flux-ΔT Comparator	12 hours	31 days	18 months
13.	Rod Group Sequence Control/Alarm	NA	18 months	18 months
14.	Deleted			
15.	Excore Deviation Alarm	NA	18 months	18 months
16.	ASI Alarm	NA	18 months	18 months
17.	SDC Suction Interlocks 18 months	NA	18 months	
18.	PDIL Alarm	NA	31 days[(d)]	18 months
19.	Fuel Pool Rad Monitor 18 months	24 hours	31 days	
20.	Containment Refueling Radiation Monitor	24 hours	31 days	18 months

(d) Setpoint verification only.

Amendment No. ~~162~~, ~~164~~, ~~171~~,

4.17 INSTRUMENTATION SYSTEMS TESTS

Basis: Table 4.17.6

CHANNEL CHECK - Other Safety Function indication channels - A CHANNEL CHECK is performed each 12 hours on each required indicator channel, except the Area Radiation Monitors which are checked each 24 hours, to provide a qualitative assurance that the channel is working properly and that its readings are within limits.

The Acoustic valve position monitors have no indicator, therefore, no CHANNEL CHECK is required.

CHANNEL FUNCTIONAL TEST - Other Safety Function Channels - A CHANNEL FUNCTIONAL TEST is performed on each channel providing automatic actions to verify that it produces the proper outputs.

This test is required to be performed at least each 18 months. In several cases it is performed as part of the required CHANNEL CALIBRATION. Those channels requiring more frequent testing are discussed below.

CHANNEL FUNCTIONAL TEST - Nuclear Flux Monitoring - The CHANNEL FUNCTIONAL TEST of each Wide Range is required prior to each reactor startup. The CHANNEL FUNCTIONAL TEST consists of verifying proper response of the channel to the internal test signals, and verification that a signal is available from the detector. After lengthy shutdown periods flux may be below the range if the channel indication. Signal verification with test equipment is acceptable.

CHANNEL FUNCTIONAL TEST - Rod Position Indication (CRDM Interlocks) - The Shutdown Rod Insertion and Regulating Rod Withdrawal interlock OPERABILITY must be verified within 92 days prior to each reactor startup and prior to startup after each refueling. If these interlocks are inoperable, the associated channel of rod position indication must be declared inoperable.

CHANNEL FUNCTIONAL TEST - Flux-ΔT Comparator - The alarm function of the Flux-ΔT Power Comparator must be verified by a CHANNEL FUNCTIONAL TEST each 31 days.

CHANNEL FUNCTIONAL TEST PDIL Alarm - (Setpoint Verification) - Each 31 days the PDIL setpoints for the existing plant power level are verified to assure OPERABILITY of the setpoint calculator.

CHANNEL FUNCTIONAL TEST - Fuel Pool and Containment Area Monitor - Each 31 days the Area Monitor OPERABILITY must be verified by a check with an internal test circuit or with a radioactive source.

CHANNEL CALIBRATION - Other Safety Function Indication Channels - Performance of a CHANNEL CALIBRATION every 18 months ensures that the channels are operating accurately and within specified tolerances. The level switch actuated alarm channels for the Condensate Flow Switches on the Containment Air Coolers do not require a calibration because their mounting assures that they are at the proper location. The required CHANNEL FUNCTIONAL TEST assures their OPERABILITY. Operating experience has shown this test interval to be satisfactory.

ATTACHMENT 2

CONSUMERS POWER COMPANY
PALISADES PLANT
DOCKET 50-255

TECHNICAL SPECIFICATIONS CHANGE REQUEST
RELOCATION OF CVCS REQUIREMENTS

Existing Pages Marked to Show Proposed Changes

12 Pages

3.1.9 SHUTDOWN COOLING (Continued)

An exception to the requirement for continuous circulation through the reactor core is provided. Both SDC and PCS circulation may be stopped for up to one hour provided actions are taken to prevent dilution or draining of the PCS and to avoid situations that could produce steam in the reactor vessel. During periods without forced circulation, admission of water with less Boron concentration than currently in the PCS could collect in a localized pocket and present a potential reactivity addition upon restart of forced circulation. Maintaining the temperature well below boiling ensures that availability of single phase natural circulation. The one hour time limit is not based on analysis. It was chosen to allow testing (such as test closure of containment isolation or shutdown cooling suction valves which require or result in stopping shutdown cooling flow) or minor maintenance, but to restrict the time without mixing and circulation of the PCS.

An exception to the requirement to have heat flow paths to the lake operable has also been provided, when below 200°F. Both heat flow paths may be made inoperable provided that adequate means are provided to assure that decay heat removal is available. In addition, core outlet temperature must be maintained below 200°F, PCS heatup rate must remain within Technical Specification limits, and circulation must be maintained through the reactor core.

In the condition where the PCS loops are filled and both steam generators have sufficient secondary water level, the PCS may be relied upon as the means of decay heat removal allowing maintenance or testing of SDC, Component Cooling or Service water components.

In the condition where the reactor vessel head has been removed and the refueling cavity has been filled for refueling, the mass of water in the pool provides a passive means of decay heat removal. When the cavity is filled to ≥ 647' elevation, this passive heat sink may be relied upon as the means of decay heat removal allowing maintenance or testing of SDC, Component Cooling, or Service water components.

During the exercising of these exceptions, operations which could drain the PCS and thereby cause a loss of, or a failure to regain, shutdown cooling are not allowed. This restriction against reducing PCS inventory does not apply to operations, such as pump flow testing, which may cause relatively minor changes in PCS inventory. The restriction is intended to apply to operations which might actually drain water from the PCS such that inventory could not be quickly regained.

References

(1) ABB/CE Letter OPS-91-0496, "Minimum S/G Level Required to Support Natural Circulation Decay Heat Removal."

(2) Consumers Power Company Engineering Analysis EA-GFP-90-03, Revision 0, "Technical Review of ABB/CE Letter OPS-91-046."

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~~3.2 CHEMICAL AND VOLUME CONTROL SYSTEM~~

~~Applicability~~

~~Applies to the operational status of the chemical and volume control system.~~

~~Objective~~

~~To define those conditions of the chemical and volume control system necessary to assure safe reactor operation.~~

~~Specifications~~

~~3.2.1 When fuel is in the reactor, there shall be at least one flow path to the core for boric acid injection.~~

~~3.2.2 The reactor shall not be made critical unless all the following conditions are met:~~

~~a. At least two charging pumps shall be operable.~~

~~b. One concentrated boric acid transfer pump shall be operable.~~

~~c. The two concentrated boric acid tanks together shall contain a minimum of 118 inches of a 6-1/4 percent to 10 percent by weight boric acid solution at a temperature of at least 25°F above saturation temperature for the concentration present in the tank.~~

~~d. System piping and valves shall be operable to the extent of establishing two flow paths from the concentrated boric acid tanks to the primary coolant system and a flow path from the SIRW tank to the charging pumps.~~

~~e. Both channels of heat tracing shall be operable for the above flow paths.~~

~~3.2.3 During power operation, the requirements of 3.2.2 may be modified to allow any one of the following conditions to be true at any one time. If the system is not restored to meet the requirements of 3.2.2 within the time period specified, the reactor shall be placed in a hot shutdown condition within 12 hours. If the requirements 3.2.2 are not satisfied within an additional 48 hours, the reactor shall be placed in a cold shutdown condition within 24 hours.~~

~~a. One of the operable charging pumps may be removed from service provided that two charging pumps are restored to operable status within 24 hours.~~

~~b. One concentrated boric acid tank may be out of service provided a minimum of 118 inches of 6-1/4% to 10% by weight boric acid~~

solution at a temperature of at least 25°F above saturation temperature is contained in the operable tank and provided that the tank is restored to operable status within 24 hours.

c. Only one flow path from the concentrated boric acid tanks to the primary coolant system may be operable provided that either the other flow path from the concentrated boric acid tanks to the primary coolant system or flow path from the SIRW tank to the charging pumps is restored to operable status within 24 hours.

d. One channel of heat tracing may be out of service provided it is restored to operable status within 24 hours.

Basis

The chemical and volume control system provides control of the primary coolant system boron inventory.[1] This is normally accomplished by using any one of the three charging pumps in series with one of the two boric acid pumps. An alternate method of boration will be to use the charging pumps directly from the SIRW storage tank. A third method will be to depressurize and use the safety injection pumps. There are two sources of borated water available for injection through three different paths.

a. The boric acid transfer pumps can deliver the concentrated boric acid contents (6-1/4 - 10 percent concentration of boric acid) to the charging pumps.

b. The safety injection pumps can take suction from the SIRW tank (1720 ppm boron solution).

c. The charging pumps can take their suctions by gravity from either the boric acid or the SIRW tank.

Each concentrated boric acid tank containing 118 inches of 6-1/4 weight percent boric acid has sufficient boron to bring the plant to a cold shutdown condition. Boric acid pumps are each of sufficient capacity to feed all three charging pumps at their maximum capacity.

The concentrated boric acid storage tank is sized for 6-1/4 weight percent boric acid solution and is capable of storing solution up to 12 weight percent. All components of the system are capable of maintaining 12 weight percent solution.

3.2 CHEMICAL AND VOLUME CONTROL SYSTEM (cont'd)

~~Duplicate heating equipment is provided on all components of the system to maintain the surface temperature to at least 150°F, which is 30°F above the saturation temperature of a 10% solution. If the heater elements fail to maintain 150°F, sufficient time is available to energize the redundant heater elements before the 25°F limit above saturation temperature is reached. Also, the 25°F limit provides assurance that the plant can be shut down before the precipitation temperature is reached.~~

~~The SIRW tank contents are sufficient to borate the primary coolant in order to reach cold shutdown at any time during core life. The limits on which components may be inoperable and the time periods for inoperability were selected on the basis of the redundancy indicated above and engineering judgment.~~

~~Reference~~

~~(1) FSAR, Section 9.10.~~

3.2 Deleted

3.3 EMERGENCY CORE COOLING SYSTEM

Applicability

Applies to the operating status of the emergency core cooling system.

Objective

To assure operability of equipment required to remove decay heat from the core in either emergency or normal shutdown situations.

Specifications

Safety Injection and Shutdown Cooling Systems

3.3.1 The reactor shall not be made critical, except for low-temperature physics tests, unless all of the following conditions are met:

a. The SIRW tank contains not less than 250,000 gallons of water with a boron concentration of at least 1720 ppm but not more than 2500 ppm at a temperature not less than 40°F.

b. All four Safety Injection tanks are operable and pressurized to at least 200 psig with a tank liquid level of at least 174 inches and a maximum level of 200 inches with a boron concentration of at least 1720 ppm but not more than 2500 ppm.

c. One low-pressure Safety Injection pump is operable on each bus.

d. One high-pressure Safety Injection pump is operable on each bus.

e. Both shutdown heat exchangers and both component cooling heat exchangers are operable.

f. Piping and valves shall be operable to provide two flow paths from the SIRW tank to the primary cooling system.

g. All valves, piping and interlocks associated with the above components and required to function during accident conditions are operable.

h. The Low-Pressure Safety Injection Flow Control Valve CV-3006 shall be opened and disabled (by isolating the air supply) to prevent spurious closure.

i. The Safety Injection bottle motor-operated isolation valves shall be opened with the electric power supply to the valve motor disconnected.

j. The Safety Injection miniflow valves CV-3027 and 3056 shall be opened with HS-3027 and 3056 positions to maintain them open.

Action (continued)

3.17.6.14 ~~With the Conc Boric Acid Tank Lo Level Alarm inoperable:~~ Deleted

~~a) Verify the level in the affected Boric Acid Tank is within limits each 12 hours.~~

3.17.6.15 With the Excore Deviation Alarm inoperable:

a) Calculate the QUADRANT POWER TILT using the excore readings at least once each 12 hours.

3.17.6.16 With one or two AXIAL SHAPE INDEX Alarm channels inoperable:

a) Restore the system to OPERABLE status prior to the next startup from COLD SHUTDOWN.

3.17.6.17 With one or two SDC suction valve interlock channels inoperable:

a) Place circuit breaker for the associated valve operator in "Racked Out" position. The breaker may be racked in only during operation of associated valve.

3.17.6.18 With one Power Dependant Insertion Alarm channel inoperable:

a) Verify that each regulating group is within the limits of Specification 3.10 within 15 minutes after movement of any regulating rod.

3.17.6.19 With one Fuel Pool Area Radiation Monitor inoperable:

a) Stop moving fuel within the Fuel Pool Area until monitoring capability is restored, and

b) Restore monitor to OPERABLE status or provide equivalent monitoring capability within 72 hours.

3.17.6.20 With one Containment refueling Radiation Monitor inoperable:

a) Stop REFUELING OPERATIONS in the containment.

3.17.6.21 If any action required by 3.17.6.1 through 3.17.6.18 is not met AND the associated completion time has expired, or if the number of OPERABLE channels is less than specified in the "Minimum OPERABLE Channels":

a) The reactor shall be placed in HOT SHUTDOWN within 12 hours, and

b) The reactor shall be placed in a condition where the affected equipment is not required, within 48 hours.

Table 3.17.6 (continued)

Instrumentation Operating Requirements for Other Safety Functions

No	Instrument	Minimum Required Channels	OPERABLE Channels	Applicable Conditions
10.	PORV Block Valve Position Indication	2/valve[a]	1/Valve	At all times, unless the PCS is depressurized and vented in accordance with Specification 3.1.8.
11.	SWS Break Detector	1[a]	0	HOT STANDBY and above.
12.	Flux-ΔT Power Comparator	4[a]	2	POWER OPERATION
13.	Rod Group Sequence Control/Alarm	2	1	When more than one CRDM is capable of rod withdrawal.
14.	~~Conc Boric Acid Tank Lo Level Alarm~~ Deleted	~~1/tank~~	~~0~~	~~HOT STANDBY and above~~
15.	Excore Detector Deviation Alarm	1	0	Above 25% RATED POWER.
16.	AXIAL SHAPE INDEX Alarm	4[a]	2	Above 25% RATED POWER.
17.	SDC Suction Valve Interlocks	2	0	Above 200 psia PCS Pressure.
18.	Power Dependant Insertion Alarm	2	1	HOT STANDBY and above.
19.	Fuel Pool Area Radiation Monitor	2[b]	0	When fuel is in fuel pool area.
20.	Containment Refueling Radiation Monitor	2[a]	0	REFUELING OPERATIONS when irradiated fuel is in the Containment.

(a) Specifications 3.0.4 and 4.0.4 are not applicable.

(b) Specifications 3.0.3, 3.0.4, and 4.0.4 are not applicable.

Basis: Table 3.17.6 (continued)

The SPI system - composed of the SPI input module and the Host computer - also uses the signals from the primary rod position indication synchros to monitor the target rods for the correct group position relative to the other groups. If the group position is not correct relative to the position of the other regulating groups, an Out-of-Sequence alarm is annunciated on the computer system. If a primary rod position indication synchro input card were to lose power, the corresponding reed switch position from the SPI input module would be used in the Out-of-Sequence monitoring on the SPI system. The Out-of-Sequence alarm provides assurance that the operator is aware of abnormal regulating rod positioning.

When only one control rod is capable of being withdrawn, group sequencing and Out-of-Sequence alarm provide no useful function and are not required.

Action 3.17.6.13 - Group Rod Group Sequence Control/Alarm channel inoperable - When either sequence function is inoperable, one of the methods of assuring correct control rod alignment is not available. Adequate assurance of correct rod positioning is retained by manual verification of regulating rod position after each occurrence of rod motion.

~~14. Concentrated Boric Acid Tank Low Level Alarm - A common "Conc Boric Acid Tank Lo Level" alarm notifies the operator that one boric acid tank is below the required total inventory. There is one level switch mounted on each tank, either of which actuates the common alarm in the control room. These two switches and the common alarm comprise the required channels.~~

~~The Concentrated Boric Acid Tank low level alarm is not required to be OPERABLE when the reactor is at HOT SHUTDOWN or below, because the inventory of boric acid is not required.~~

~~Action 3.17.6.14 - One or Two Conc Boric Acid Tank low level alarm channels inoperable - When either a boric acid tank low level alarm switch or the common alarm is inoperable, the level in the tank or tanks without an operable level alarm should be verified to be within limits each shift.~~ Deleted

15. Excore Detector Deviation Alarm - An alarm is derived by the Excore Detector Deviation Alarm channel on excessive flux tilt. The Excore Detector Deviation Alarm compares the combined average power reading of all four Excore Power Range channels to the average from each channel, and alarms if the setpoint is exceeded. One channel being significantly different from the average could indicate a developing Quadrant Power Tilt (Tq).

The Excore Detector Deviation Alarm is required to be OPERABLE above 25% RATED POWER, when the Tq specification is applicable.

Action 3.17.6.15 - Excore Deviation Alarm inoperable - When the Excore Deviation Alarm is inoperable, continuous monitoring of Tq is unavailable. The function of Tq monitoring must be maintained by manually calculating Tq each 12 hours.

4.2 EQUIPMENT AND SAMPLING TESTS

TABLE 4.2.1

Minimum Frequencies for Sampling Tests

	Test	Frequency	FSAR Section REFERENCE
1. Reactor Coolant Samples	Gross Activity Determination	3 Times/7 days with a maximum of 72 hours between samples (T ave greater than 500°F).	None
	Gross Gamma by Fission Product Monitor	Continuous when T ave is greater than 500°F[1].	None
	Isotopic analysis for dose equivalent I-131 concentration	1/14 days during power operation	None
	Radiochemical for E determination	1/6 months[2]	None
	Isotopic analysis for iodine, including I-131, 133, 135	a) Once/4 hours, whenever dose equivalent I-131 exceeds 1.0 μCi/gram, and b) One sample between 2 and 6 hours following a thermal power change exceeding 15% of rated thermal power within a one hour period.	
	Chemistry (Cl and O_2)	3 times/7 days with a maximum of 72 hours between samples (T ave greater than 210°F).	
	Chemistry (F)	Once/30 days and following modifications or repair to the primary coolant system involving welding.	
2. Reactor Coolant Boron	Boron Concentration	Twice/Week	None
3. SIRW Tank Water Sample	Boron Concentration	Monthly	None
4. ~~Concentrated Boric Acid Tanks~~	~~Boron Concentration~~ Deleted	~~Monthly~~	~~None~~
5. SI Tanks	Boron Concentration	Monthly	6.1.2

Amendment No. ~~20, 74, 113, 162~~

4.2 EQUIPMENT SAMPLING AND TESTS

Table 4.2.2

Minimum Frequencies for Equipment Tests

Test		Frequency	FSAR Section REFERENCE
1. CONTROL RODS	Drop Times of All Full Length Rods	Refueling	7.6.1.3
2. CONTROL RODS	Partial Movement of all Rods (Minimum of 6 In)	Every 92 Days	7.6.1.3
3. Pressurizer Safety Valves	Set Point	One Each Refueling	4.3.7
4. Main Steam Safety Valves	Set Point	Five Each Refueling	4.3.4
5. Refueling System Interlocks	Functioning Operations	Prior to Refueling	9.11.4
6. Service Water System Valve Actuation on SIS and RAS	Functioning	Refueling	9.1.2
7. Primary System Leakage	Evaluate	Daily	4.7.1
8. Deleted			
9. ~~Boric Acid Heat Tracing~~	~~Verify proper temperature readings.~~	~~Daily~~ Deleted	
10. Safety Injection Tank Level and Pressure	Verify that level and pressure indication is between independent high high/low alarms for level and pressure.	Each Shift	

Amendment No. ~~12~~, ~~81~~, ~~133~~, ~~152~~, ~~155~~, ~~157~~, ~~162~~, ~~180~~

Table 4.17.6 (continued)

Instrumentation Surveillance Requirements for Other Safety Functions

	Instrument	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION
11.	SWS Break Detector	NA	18 months	18 months
12.	Flux-ΔT Comparator	12 hours	31 days	18 months
13.	Rod Group Sequence Control/Alarm	NA	18 months	18 months
14.	~~BAT Low Level Alarm~~	~~NA~~	~~18 months~~	~~Not Required~~ Deleted
15.	Excore Deviation Alarm	NA	18 months	18 months
16.	ASI Alarm	NA	18 months	18 months
17.	SDC Suction Interlocks 18 months	NA	18 months	
18.	PDIL Alarm	NA	31 days[(d)]	18 months
19.	Fuel Pool Rad Monitor 18 months	24 hours	31 days	
20.	Containment Refueling Radiation Monitor	24 hours	31 days	18 months

(d) Setpoint verification only.

Amendment No. ~~162~~, ~~164~~, ~~171~~

4.17 INSTRUMENTATION SYSTEMS TESTS

Basis: Table 4.17.6

CHANNEL CHECK - Other Safety Function indication channels - A CHANNEL CHECK is performed each 12 hours on each required indicator channel, except the Area Radiation Monitors which are checked each 24 hours, to provide a qualitative assurance that the channel is working properly and that its readings are within limits.

The Acoustic valve position monitors have no indicator, therefore, no CHANNEL CHECK is required.

CHANNEL FUNCTIONAL TEST - Other Safety Function Channels - A CHANNEL FUNCTIONAL TEST is performed on each channel providing automatic actions to verify that it produces the proper outputs.

This test is required to be performed at least each 18 months. In several cases it is performed as part of the required CHANNEL CALIBRATION. Those channels requiring more frequent testing are discussed below.

CHANNEL FUNCTIONAL TEST - Nuclear Flux Monitoring - The CHANNEL FUNCTIONAL TEST of each Wide Range is required prior to each reactor startup. The CHANNEL FUNCTIONAL TEST consists of verifying proper response of the channel to the internal test signals, and verification that a signal is available from the detector. After lengthy shutdown periods flux may be below the range if the channel indication. Signal verification with test equipment is acceptable.

CHANNEL FUNCTIONAL TEST - Rod Position Indication (CRDM Interlocks) - The Shutdown Rod Insertion and Regulating Rod Withdrawal interlock OPERABILITY must be verified within 92 days prior to each reactor startup and prior to startup after each refueling. If these interlocks are inoperable, the associated channel of rod position indication must be declared inoperable.

CHANNEL FUNCTIONAL TEST - Flux-ΔT Comparator - The alarm function of the Flux-ΔT Power Comparator must be verified by a CHANNEL FUNCTIONAL TEST each 31 days.

CHANNEL FUNCTIONAL TEST PDIL Alarm - (Setpoint Verification) - Each 31 days the PDIL setpoints for the existing plant power level are verified to assure OPERABILITY of the setpoint calculator.

CHANNEL FUNCTIONAL TEST - Fuel Pool and Containment Area Monitor - Each 31 days the Area Monitor OPERABILITY must be verified by a check with an internal test circuit or with a radioactive source.

CHANNEL CALIBRATION - Other Safety Function Indication Channels - Performance of a CHANNEL CALIBRATION every 18 months ensures that the channels are operating accurately and within specified tolerances. The level switch actuated alarm channels ~~on the Boric Acid Tanks (BAT) and~~ for the Condensate Flow Switches on the Containment Air Coolers do not require a calibration because their mounting assures that they are at the proper location. The required CHANNEL FUNCTIONAL TEST assures their OPERABILITY. Operating experience has shown this test interval to be satisfactory.

ATTACHMENT 3

CONSUMERS POWER COMPANY
PALISADES PLANT
DOCKET 50-255

TECHNICAL SPECIFICATIONS CHANGE REQUEST
RELOCATION OF CVCS REQUIREMENTS

Operating Requirements Manual Pages Containing CVCS Requirements

9 Pages

OPERATING REQUIREMENTS MANUAL

Notes:

(1) These requirements supplement the equipment operability and surveillance requirements of the Technical Specifications. They have been reviewed by PRC.

(2) Check Commitment Tracking System prior to changing or deleting any of these requirements, to avoid failing to meet an NRC commitment.

(3) These requirements may be changed, through the administrative control processes, but the change process shall include a Seven Question Safety Evaluation.

(4) These requirements are not Technical Specifications. Neither failures to operate within these requirements nor plant shutdowns, made solely due to these requirements, must be reported to the NRC.

(5) Changes made in this revision are noted by bars in the right margin. These changes are listed on page 1.

(6) The Operating Requirements Manual (ORM), Standing Order 54, is incorporated into the FSAR by reference and will be revised in the same manner as the FSAR. Changes to the ORM shall become effective after approval by the General Manager, Plant Operations.

Changes from Revision 48:

1. The changes made to Section 3.2 and Tables 3.17.6, 4.2.1, and 4.22 are duplicating Section 3.2 and the respective table items of the existing Technical Specifications. Technical Specification Change Request commits to relocate CVCS requirements to Standing Order #54.

3.2 CHEMICAL AND VOLUME CONTROL SYSTEM

3.2.1 When fuel is in the reactor, there shall be at least one flow path to the core for boric acid injection.

3.2.2 The reactor shall not be made critical unless all the following condition are met:

a. At least two charging pumps shall be operable.
One charging pump is OPERABLE on each bus.

b. One concentrated boric acid transfer pump shall be operable. Boric acid pump P-56A and MO-2140 shall be operable.

c. The two concentrated boric acid tanks together shall contain a minimum of 118 inches of a 6-1/4 percent to 10 percent by weight boric acid solution at a temperature of at least 25°F above saturation temperature for the concentration present in the tank.

d. System piping and valves shall be operable to the extent of establishing two flow paths from the concentrated boric acid tanks to the primary coolant system and a flow path from the SIRW tank to the charging pumps.

e. Both channels of heat tracing shall be operable for the above flow paths.

3.2.3 During power operation, the requirements of 3.2.2 may be modified to allow any one of the following conditions to be true at any one time. If the system is not restored to meet the requirements of 3.2.2 within the time period specified, the reactor shall be placed in a hot shutdown condition within 12 hours. If the requirements 3.2.2 are not satisfied within an additional 48 hours, the reactor shall be placed in a cold shutdown condition within 24 hours.

a. One of the operable charging pumps may be removed from service provided that two charging pumps are restored to operable status within 24 hours.
Two charging pumps may be inoperable provided that one charging pump on each bus is restored to OPERABLE status within 24 hours.

b. One concentrated boric acid tank may be out of service provided a minimum of 118 inches of 6-1/4% to 10% by weight boric acid solution at a temperature of at least 25°F above saturation

temperature is contained in the operable tank and provided that the tank is restored to operable status within 24 hours.

c. Only one Flow path from the concentrated boric acid tanks to the primary coolant system may be operable provided that either the other flow path from the concentrated boric acid tanks to the primary coolant system or flow path from the SIRW tank to the charging pumps is restored to operable status within 24 hours.

d. One channel of heat tracing may be out of service provided it is restored to operable status within 24 hours.

e. Boric acid pump P-56A or MO-2140 may be inoperable provided there is an OPERABLE boric acid flow path from a concentrated boric tank via gravity feed connection and a charging pump powered from LC-11 to the primary coolant system and provided boric acid pump P-56A and MO-2140 is restored to OPERABLE status within 24 hours.

Basis

The chemical and volume control system provides control of the primary coolant system boron inventory.[1] This is normally accomplished by using any one of the three charging pumps in series with one of the two boric acid pumps. An alternate method of boration will be to use the charging pumps directly from the SIRW storage tank. A third method will be to depressurize and use the safety injection pumps. There are two sources of borated water available for injection through three different paths.

a. The boric acid transfer pumps can deliver the concentrated boric acid contents (6-1/4 - 10 percent concentration of boric acid) to the charging pumps.

b. The safety injection pumps can take suction from the SIRW tank (1720 ppm boron solution).

c. The charging pumps can take their suctions by gravity from either the boric acid or the SIRW tank.

Each concentrated boric acid tank containing 118 inches of 6-1/4 weight percent boric acid has sufficient boron to bring the plant to a cold shutdown condition. Boric acid pumps are each of sufficient capacity to feed all three charging pumps at their maximum capacity.

The concentrated boric acid storage tank is sized for 6-1/4 weight percent boric acid solution and is capable of storing solution up to 12 weight percent. All components of the system are capable of maintaining 12 weight percent solution.

Duplicate heating equipment is provided on all components of the system to maintain the surface temperature to at least 150°F, which is 30°F above the saturation temperature of a 10% solution. If the heater elements fail to maintain 150°F, sufficient time is available to energize the redundant heater elements before the 25°F limit above saturation temperature is reached. Also, the 25°F limit provides assurance that the plant can be shut down before the precipitation temperature is reached.

The SIRW tank contents are sufficient to borate the primary coolant in order to reach cold shutdown at any time during core life. The limits on which components may be inoperable and the time periods for inoperability were selected on the basis of the redundancy indicated above and engineering judgment.

3.17 INSTRUMENTATION SYSTEMS

Specification

3.17.6 The Safety Function instruments listed in Table 3.17.6 shall be OPERABLE.

Applicability

According to the Applicable Conditions column of Table 3.17.6.

Action

3.17.6.14 With the Conc Boric Acid Tank Lo Level Alarm inoperable:

a.) Verify the level in the affected Boric Acid Tank is within limits each 12 hours.

Table 3.17.6
Instrumentation Operating Requirements for
Other Safety Function

No	Instrument	Required Channels	Minimum OPERABLE Channels	Applicable Conditions
14.	Conc Boric Acid Tank Lo Level Alarm	1/tank	0	HOT STANDBY and above

Basis: Table 3.17.6

14. Concentrated Boric Acid Tank Low Level Alarm - A common "Conc Boric Acid Tank Lo Level" alarm notifies the operator that one boric acid tank is below the required total inventory. There is one level switch mounted on each tank, either of which actuates the common alarm in the control room. These two switches and the common alarm comprise the required channels.

The Concentrated Boric Acid Tank Low Level Alarm is not required to be OPERABLE when the reactor is at HOT SHUTDOWN or below, because the inventory of boric acid is not required.

Action 3.17.6.14 - One or Two Conc Boric Acid Tank Low Level alarm channels Inoperable - When either a boric acid tank low level alarm switch or the common alarm is inoperable, the level in the tank or tanks without an operable level alarm should be verified to be within limits each shift.

TABLE 4.2.1

Minimum Frequencies for Sampling Tests

		Test		Frequency	FSAR Section Reference
2.	PCS Boron	Boron Concentration		Twice/week	None
		Refueling Boron Concentration[8]	a.	Once/12 hours during reactor head removal and during REFUELING OPERATIONS in the reactor, and	3.3.2.1
			b.	Twice/week with fuel in the reactor vessel and vessel closure bolts less than fully tensioned or with the head removed.	
4.	Concentrated Boric Acid Tanks	Boron Concentration		Monthly	None

(8) Reference Tech Spec Section 1.1 Definitions and specification 3.8 for refueling boron requirements.

TABLE 4.2.2

Minimum Frequencies for Equipment Tests

		Test	Frequency
9.	Boric Acid Heat Tracing	Verify proper temperature readings.	Daily

16. Primary Coolant Gas Vent System

Each primary coolant gas vent path from the reactor vessel and pressurizer shall be demonstrated OPERABLE at least once each refueling cycle by:

1. Verify all manual isolation valves in each vent path are locked in the open position.

2. Cycling each valve in the vent path through at least one complete cycle of full travel from the control room during COLD SHUTDOWN or refueling.

3. Verify flow through the reactor coolant vent system vent paths during COLD SHUTDOWN or refueling.

17. Containment Spray Header Level

1. Verify each containment spray header level meets the requirements of section 3.4.1.c at least once each 31 days.

4.17 INSTRUMENTATION SYSTEMS TESTS

Table 4.17.6
Instrumentation Surveillance Requirements for
Other Safety Functions

	Instrument	Channel Check	Channel Functional Test	Channel Calibration
14.	BAT Low Level Alarm	NA	18 months	Not Required