ATTACHMENT 1

To

Proposed Amendment No. 117

Letter from C. R. Steinhardt (WPSC)

To

Document Control Desk (NRC)

Dated

January 20, 1992

Description of the Proposed Change

Safety Evaluation

Significant Hazards Determination

Environmental Considerations

Description of Proposed Changes to TS section 3.5 Basis and Tables TS 3.5-4 and TS 4.1-1

Changes are being proposed to satisfy the recommendations of GL 89-19. Specifically:

1) Adding item 4, "Main Feedwater Isolation", to KNPP's Technical Specification (TS) Table TS 3.5-4 to incorporate Limiting Conditions for Operations for feedwater isolation, as shown in Attachment 2,

2) A revision to Item 11 of Table TS 4.1-1, as shown in Attachment 2, requiring surveillance of both low and high steam generator water level instrumentation,

3) In addition to the proposed TS revisions in Tables TS 3.5-4 and TS 4.1-1, a section is being added to the basis for TS section 3.5 to describe the function of Main Feedwater Isolation, and

4) Administrative changes are being made to convert TS section 3.5 and its basis along with Tables TS 3.5-4 and TS 4.1-1 to the WordPerfect software and correct minor typographical errors and format inconsistences. The administrative changes to TS section 3.5 and Table TS 4.1-1 reflected in this proposed amendment (PA) are similar to those previously submitted in PAs 98a, 110 and 116 with the exception of renumbering the pages for the basis section. The technical changes associated with PAs 98a, 110 and 116 are not included with this submittal.

Safety Evaluation for Basis Change and Proposed Changes to Tables TS 3.5-4 and TS 4.1-1

Generic Letter (GL) 89-19 (reference 1) involves a request for action related to resolution of Unresolved Safety Issue A-47 "Safety Implication of Control Systems in LWR Nuclear Power Plants". GL 89-19 included recommendations to periodically verify the operability of the steam generator overfill control system and to verify automatic control is available to mitigate a potential steam generator overfill event.

Pursuant to this recommendation, WPSC is proposing to add a Limiting Condition of Operation and surveillance requirements for the steam generator overfill control system. As stated in our response to GL 89-19 (reference 2), WPSC currently performs this type of surveillance through the implementation of existing Surveillance Procedures. These procedures ensure proper verification and testing of the automatic steam generator overfill control system.

In conjunction with the proposed revisions to Table TS 3.5-4, a section is being added to the basis for TS section 3.5 to provide background information on the main feedwater isolation system.

The proposed changes, as described above, do not result in any significant change in the configuration of the plant, equipment design, or equipment use; nor do they require any change in the accident analysis methodology. Therefore, the accident analyses presented in the Updated Safety Analysis Report remain bounding. The proposed change will add an additional requirement to the TSs to ensure the availability and reliability of the steam generator overfill control system. The addition of this requirement does not adversely affect safety and therefore does not reduce the margin of safety.

Submitting this PA completes WPSCs implementation of the recommendations of GL 89-19.

Significant Hazards Determination for Proposed Changes to TS section 3.5 Basis and Tables TS 3.5-4 and TS 4.1-1

The proposed changes have been evaluated to determine whether they constitute a significant hazards consideration as required by 10 CFR Part 50, Section 50.91 using the standards provided in Section 50.92. This analysis is provided below:

1) The proposed amendment will not involve a significant increase in the probability or consequence of an accident previously evaluated.

The proposed changes will not affect the ability of the Main Feedwater Isolation System to perform its intended safety function, which is to provide steam generator overfill control. The intent of adding the Limiting Condition of Operation and surveillance requirement to the TSs is to ensure the reliability and availability of the steam generator overfill control system. The proposed change is an additional restriction not presently included in the TSs; therefore, it will not increase the probability or consequences of any accident previously evaluated.

2) The proposed amendment will not create the possibility of a new or different kind of accident from any accident previously analyzed.

The proposed change does not alter the plant configuration or overall plant performance; therefore, it does not create the possibility of a new or different kind of accident.

3) The proposed amendment will not involve a significant reduction in the margin of safety.

The proposed change will add an additional requirement to the TSs to ensure the availability and reliability of the steam generator overfill control system. The addition of this requirement does not adversely affect safety and therefore does not reduce the margin of safety.

The Commission has provided guidance concerning the application of the standards in 10 CFR 50.92 for determining whether a significant hazards consideration exists by providing certain examples of amendments that will likely be found to involve no significant hazards considerations. These examples were published in the Federal Register on March 6, 1986.

The proposed changes are similar to example C.2.e(ii) in 51 FR 7751, because they involve changes that constitute additional limitations, restrictions or controls not presently included in the TSs. Based on this guidance and the reasons discussed above, we have concluded that the proposed changes do not involve a significant hazards consideration.

Safety Evaluation for Proposed Administrative Changes to TS section 3.5 and Tables TS 3.5-4 and TS 4.1-1

A number of formatting changes and corrections of minor typographical errors are being included with this proposed change. These administrative changes are similar to those previously submitted in PAs 98a, 110 and 116 with the exception of renumbering the pages for the basis section. These changes are being proposed in conjunction with converting the TS document over to the Word Perfect software now being used at WPSC for word processing.

These changes have been reviewed to ensure that they do not alter the intent or interpretation of the TSs; therefore, there is no affect on public health or safety.

Significant Hazards Determination for Proposed Administrative Changes to TS section 3.5 and Tables TS 3.5-4 and TS 4.1-1

The proposed administrative changes have been reviewed in accordance with the provisions of 10 CFR 50.92 to show that no significant hazards exist. The proposed change will not:

1) involve a significant increase in the probability or consequence 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 the margin of safety.

The proposed changes are administrative in nature and do not alter the intent or interpretation of the TS. Therefore, no significant hazards exist.

Additionally, the proposed change is similar to example C.2.e(i) in 51 FR 7751. Example C.2.e(i) states that changes which are purely administrative in nature; i.e. to achieve consistency throughout the technical specifications, correct an error, or change in nomenclature, are not likely to involve a significant hazard.

Environmental Considerations

This proposed amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted area, as defined in 10 CFR part 20, or a change to a surveillance requirement. WPSC has determined that the proposed amendment involves no significant hazards considerations and no significant change in the types of any effluent that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. Accordingly, this proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with this proposed amendment.

ATTACHMENT 2

To

Proposed Amendment No. 117

Letter from C. R. Steinhardt (WPSC)

To

Document Control Desk (NRC)

Dated

January 20, 1993

TS Section 3.5

Table TS 3.5-4

Table TS 4.1-1

3.5 INSTRUMENTATION SYSTEM

APPLICABILITY

Applies to reactor protection and engineered safety features instrumentation systems.

OBJECTIVE

To provide for automatic initiation of the engineered safety features in the event that principal process variable limits are exceeded, and to delineate the conditions of the reactor protection instrumentation and engineered safety features circuits necessary to ensure reactor safety.

SPECIFICATIONS

a. Setting limits for instrumentation which initiate operation of the engineered safety features shall be as stated in Table TS 3.5-1.

b. For on-line testing or in the event of failure of a subsystem instrumentation channel, plant operation shall be permitted to continue at RATED POWER in accordance with Tables TS 3.5-2 through TS 3.5-5.

c. If for Tables TS 3.5-2 through TS 3.5-5, the number of channels of a particular subsystem in service falls below the limits given in Column 3, or if the values in Column 4 cannot be achieved, operation shall be limited according to the requirement shown in Column 6, as soon as practicable.

d. In the event of subsystem instrumentation channel failure permitted by TS 3.5.b, Tables TS 3.5-2 through TS 3.5-5 need not be observed during the short period of time (approximately 4 hours) the operable subsystem channels are tested, where the failed channel must be blocked to prevent unnecessary reactor trip.

e. The instrumentation in Table TS 3.5-6 shall be OPERABLE. In the event the limits given in Columns 1 and 2 cannot be maintained, operator action will be in accordance with the respective notes.

BASIS - Instrumentation System (TS 3.5)

Instrumentation has been provided to sense accident conditions and to initiate operation of the engineered safety features.[1] Section 2.3 of these specifications describes the LIMITING SAFETY SYSTEM SETTINGS for the protective instrumentation.

Safety Injection

Safety Injection can be activated automatically or manually to provide additional water to the Reactor Coolant System or to increase the concentration of boron in the coolant.

Safety Injection is initiated automatically by (1) low pressurizer pressure, (2) low main steam line pressure in either loop and (3) high containment pressure. Protection against a loss-of-coolant accident is primarily through signals (1) and (3). Protection against a steam line break is primarily by means of signal (2).

Manual actuation is always possible. Safety Injection signals can be blocked during those OPERATING MODES where they are not "required" for safety and where their presence might inhibit operating flexibility; they are generally restored automatically on return to the "required" OPERATING MODE.

Reactor Trip Breakers

With the addition of the automatic actuation of the shunt trip attachment, diverse features exist to effect a reactor trip for each reactor trip breaker. Since either trip feature being OPERABLE would initiate a reactor trip on demand, the flexibility is provided to allow plant operation on a reactor trip breaker (with either trip feature inoperable) for up to 72 hours. This specification also requires the plant to proceed to the HOT SHUTDOWN condition in accordance with the Kewaunee STANDARD SHUTDOWN SEQUENCE if a reactor trip breaker is bypassed for greater than 8 hours.

Containment Spray

Containment sprays are also actuated by a high containment pressure signal (Hi-Hi) to reduce containment pressure in the event of a loss-of-coolant or steam line break accident inside the containment.

The containment sprays are actuated at a higher containment pressure (approximately 50% of design containment pressure) than is Safety Injection (10% of design). Since spurious actuation of containment spray is to be avoided, it is initiated only on coincidence of high containment pressure (Hi-Hi) sensed by three sets of one-out-of-two containment pressure signals provided for its actuation.

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[1] USAR Section 7.5

Containment Isolation

A containment isolation signal is initiated by any signal causing automatic initiation of Safety Injection or may be initiated manually. The containment isolation system provides the means of isolating the various pipes passing through the containment walls as required to prevent the release of radioactivity to the outside environment in the event of a loss-of-coolant accident.

Steam Line Isolation

In the event of a steam line break, the steam line isolation valve of the affected line is automatically isolated to prevent continuous, uncontrolled steam release from more than one steam generator. The steam lines are isolated on Hi-Hi containment pressure or high steam flow in coincidence with Lo-Lo T_{avg} and Safety Injection or Hi-Hi steam flow in coincidence with Safety Injection. Adequate protection is afforded for breaks inside or outside the containment even under the assumption that the steam line check valves do not function properly.

Main Feedwater Isolation

Main feedwater isolation actuation occurs as a result of a Hi-Hi steam generator water level to prevent steam generator overfill conditions. Steam generator overfill may result in damage to secondary components; for example, high moisture steam could erode the turbine blades at an accelerated rate.

Setting Limits

1. The high containment pressure limit is set at about 10% of the maximum internal pressure. Initiation of Safety Injection protects against loss-of-coolant[2] or steam line break[3] accidents as discussed in the safety analysis.

2. The Hi-Hi containment pressure limit is set at about 50% of the maximum internal containment pressure for initiation of containment spray and at about 30% for initiation of steam line isolation. Initiation of containment spray and steam line isolation protects against large loss-of-coolant or steam line break accidents as discussed in the safety analysis.

3. The pressurizer low-pressure limit is set substantially below system operating pressure limits. However, it is sufficiently high to protect against a loss-of-coolant accident as shown in the safety analysis.

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[2] USAR Section 14.3

[3] USAR Section 14.2.5

4. The steam line low-pressure signal is lead/lag compensated and its setpoint is set well above the pressure expected in the event of a large steam line break accident as shown in the safety analysis.

5. The high steam line flow limit is set at approximately 20% of nominal full-load flow at the no-load pressure and the Hi-Hi steam line flow limit is set at approximately 120% of nominal full-load flow at the full-load pressure in order to protect against large steam line break accidents. The coincident Lo-Lo T_{avg} setting limit for steam line isolation initiation is set below its HOT SHUTDOWN value. The safety analysis shows that these settings provide protection in the event of a large steam line break.

6. The setpoints and associated ranges for the undervoltage relays have been established to always maintain motor voltages at or above 80% of their nameplate rating and to prevent prolonged operation of motors below 90% of their nameplate rating. All safeguard motors were designed to accelerate their loads to operating speed with 80% nameplate voltage, but not necessarily within their design temperature rise. Prolonged operation below 90% of nameplate voltage may result in shortening of motor insulation life, but short-term operation below 90% of nameplate voltage will not result in unacceptable effects due to the service factor provided in the motors and the conservative insulation system used on the motors.

   The primary safeguard buses undervoltage trip (85.0% of nominal bus voltage) is designed to protect against a loss of voltage to the safeguard bus and assures that safeguard protection action will proceed as assumed in the USAR. The associated time delay feature prevents inadvertent actuation of the undervoltage relays from voltage dips, while assuring that the diesel generators will reach full capacity before the Safety Injection pump loads are sequenced on.

   The safeguard buses second level undervoltage trip (92.5% nominal bus voltage) is designed to protect against prolonged operation below 90% of nameplate voltage of safeguard pumps. The time delay of less than 5 minutes allows the operator time to restore voltage by minimizing or balancing loads on the safeguard buses while maintaining the preferred source of power. Up to 5 minutes of operation of safeguard pumps between 80% and 90% of nameplate voltage is acceptable due to the service factor and conservative insulation designed into the motors.

   Each relay in the undervoltage protection channels will fail safe and is alarmed to alert the operator to the failure.

A blackout signal which occurs during the sequence loading following a Safety Injection signal will result in a re-initiation of the sequence loading logic at time step 0 as long as the Safety Injection signal has not been reset. The Kewaunee Emergency Procedures warn the operators that a Blackout Signal occurring after reset of Safety Injection will not actuate the sequence loading and instructs to re-initiate Safety Injection if needed.

Instrument OPERATING Conditions

During plant OPERATIONS, the complete protective instrumentation systems will normally be in service. Reactor safety is provided by the Reactor Protection Systems, which automatically initiates appropriate action to prevent exceeding established limits. Safety is not compromised, however, by continuing OPERATION with certain instrumentation channels out of service since provisions were made for this in the plant design. This specification outlines LIMITING CONDITIONS FOR OPERATION necessary to preserve the effectiveness of the Reactor Control and PROTECTION SYSTEM when any one or more of the channels is out of service.

Almost all reactor protection channels are supplied with sufficient redundancy to provide the capability for CHANNEL CALIBRATION and test at power. Exceptions are backup channels such as reactor coolant pump breakers. The removal of one trip channel on process control equipment is accomplished by placing that channel bistable in a tripped mode; e.g., a two-out-of-three circuit becomes a one-out-of-two circuit. The source and intermediate range nuclear instrumentation system channels are not intentionally placed in a tripped mode since these are one-out-of-two trips, and the trips are therefore bypassed during testing. Testing does not trip the system unless a trip condition exists in another channel.

The OPERABILITY of the instrumentation noted in Table TS 3.5-6 assures that sufficient information is available on these selected plant parameters to aid the operator in identification of an accident and assessment of plant conditions during and following an accident. In the event the instrumentation noted in Table TS 3.5-6 is not OPERABLE, the operator is given instruction on compensatory actions.

TABLE TS 3.5-4

INSTRUMENT OPERATING CONDITIONS FOR ISOLATION FUNCTIONS

		1	2	3	4	5	6
NO.	FUNCTIONAL UNIT	NO. OF CHANNELS	NO. OF CHANNELS TO TRIP	MINIMUM OPERABLE CHANNELS	MINIMUM DEGREE OF REDUNDANCY	PERMISSIBLE BYPASS CONDITIONS	OPERATOR ACTION IF CONDITIONS OF COLUMN 3 OR 4 CANNOT BE MET
1	Containment Isolation						
	a. Safety Injection	Refer to Item No. 1 of Table TS 3.5-3					HOT SHUTDOWN(1)
	b. Manual	2	1	1	-		HOT SHUTDOWN
2	Steam Line Isolation						
	a. Hi-Hi Steam Flow with Safety Injection	2/loop	1	1	-		HOT SHUTDOWN(1)
	b. Hi Steam Flow and 2 of 4 Lo-Lo T_{avg} with Safety Injection	2/loop	1	1	-		HOT SHUTDOWN(1)
	c. Hi-Hi Containment Pressure	3	2	2	-		HOT SHUTDOWN(1)
	d. Manual	1/loop	1/loop	1/loop	-		HOT SHUTDOWN

(1) If minimum conditions are not met within 24 hours, steps shall be taken to place the plant in a COLD SHUTDOWN condition.

TABLE TS 3.5-4

INSTRUMENT OPERATING CONDITIONS FOR ISOLATION FUNCTIONS

		1	2	3	4	5	6
NO.	FUNCTIONAL UNIT	NO. OF CHANNELS	NO. OF CHANNELS TO TRIP	MINIMUM OPERABLE CHANNELS	MINIMUM DEGREE OF REDUNDANCY	PERMISSIBLE BYPASS CONDITIONS	OPERATOR ACTION IF CONDITIONS OF COLUMN 3 OR 4 CANNOT BE MET
3	Containment Ventilation Isolation						
	a. High Containment Radiation	2	1	1	-	-	These channels are not required to activate containment ventilation isolation when the containment purge and ventilation system isolation valves are maintained closed.(2)
	b. Safety Injection	Refer to Item 1 of Table TS 3.5-3					
	c. Containment Spray	Refer to Item 3 of Table TS 3.5-3					
4	Main Feedwater Isolation						
	a. Hi-Hi Steam Generator Level	3	2	2	1		HOT SHUTDOWN

(2) The detectors are required for Reactor Coolant System leak detection as referenced in TS 3.1.d.5.

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

CHANNEL DESCRIPTION	CHECK	CALIBRATE	TEST	REMARKS
1. Nuclear Power Range	Each shift(a) Effective Full Power Month(c)	Daily(a) Effective Full Power Quarter(c)	Monthly(b) Quarterly(d)	(a) Heat balance (b) Signal to ΔT; bistable action (permissive, rod stop, trips) (c) Upper and lower chambers for axial off-set using incore detectors. The check and calibration for axial offset shall also be performed prior to > 75% power following any core alteration. (d) Permissives P8 and P10 and the 25% reactor trip are tested quarterly.
2. Nuclear Intermediate Range	Each shift(a)*	Not applicable	Prior to each startup if not done previous week(b)	(a) Once/shift when in service (b) Log level; bistable action (permissive, rod stop, trips)
3. Nuclear Source Range	Each shift(a)*	Not applicable	Prior to each startup if not done previous week(b)	(a) Once/shift when in service (b) Bistable action (alarm, trips)
4. Reactor Coolant Temperature	Each shift*	Each refueling cycle not to exceed 18 months	Monthly(a) Monthly(b)	(a) Overtemperature ΔT (b) Overpower ΔT
5. Reactor Coolant Flow	Each shift	Each refueling cycle not to exceed 18 months(a)	Monthly	(a) Only if test indicates calibration required

*** Reference TS 4.1.d**

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

CHANNEL DESCRIPTION	CHECK	CALIBRATE	TEST	REMARKS
6. Pressurizer Water Level	Each shift	Each refueling cycle not to exceed 18 months(a)	Monthly	(a) Only if test indicates calibration required
7. Pressurizer Pressure	Each shift	Each refueling cycle not to exceed 18 months(a)	Monthly	(a) Only if test indicates calibration required
8. a. 4-KV Voltage and Frequency	Not applicable	Each refueling cycle not to exceed 18 months	Monthly	Reactor protection circuits only
b. 4-KV Voltage (Loss of Voltage)	Not applicable	Each refueling cycle not to exceed 18 months	Monthly	Safeguards buses only
c. 4-KV Voltage (Degraded Grid)	Not applicable	Each refueling cycle not to exceed 18 months	Each refueling cycle not to exceed 18 months	Safeguards buses only
9. Analog Rod Position	Each shift(a)(b)	Each refueling cycle not to exceed 18 months(c)	Each refueling cycle not to exceed 18 months	(a) With step counters (b) Following rod motion in excess of 24 steps when computer is out of service (c) Only if test indicates calibration required

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

CHANNEL DESCRIPTION	CHECK	CALIBRATE	TEST	REMARKS
IO. Rod Position Bank Counters	Each shift(a)(b)	Not applicable	Each refueling cycle not to exceed 18 months	(a) With analog rod position (b) Following rod motion in excess of 24 steps when computer is out of service
11. a. Steam Generator Low Level	Each shift	Each refueling cycle not to exceed 18 months(a)	Monthly	(a) Only if test indicates calibration required
b. Steam Generator High Level	Each shift	Each refueling cycle not to exceed 18 months(a)	Monthly	(a) Only if test indicates calibration required
12. Steam Generator Flow Mismatch	Each shift	Each refueling cycle not to exceed 18 months(a)	Monthly	(a) Only if test indicates calibration required
13. Charging Flow	Each shift	Each refueling cycle not to exceed 18 months	Not applicable	
14. Residual Heat Removal Pump Flow	Each shift (when in operation)	Each refueling cycle not to exceed 18 months	Not applicable	
15. Boric Acid Tank Level	Daily	Each refueling cycle not to exceed 18 months	Monthly	

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

CHANNEL DESCRIPTION	CHECK	CALIBRATE	TEST	REMARKS
16. Refueling Water Storage Tank Level	Weekly	Annually	Not applicable	
17. Volume Control Tank Level	Each shift	Each refueling cycle not to exceed 18 months	Not applicable	
18. a. Containment Pressure (SIS signal)	Each shift	Each refueling cycle not to exceed 18 months(b)	Monthly(a)	(a) Isolation Valve Signal (b) Only if test indicates calibration required
b. Containment Pressure (Steamline Isolation)	Each shift(a)	Each refueling cycle not to exceed 18 months(a)(b)	Monthly(a)	(a) Narrow range containment pressure (-3.0, +3.0 psig excluded) (b) Only if test indicates calibration required
c. Containment Pressure (Containment Spray Act)	Each shift	Each refueling cycle not to exceed 18 months(a)	Monthly	(a) Only if test indicates calibration required
d. Annulus Pressure (Vacuum Breaker)	Not applicable	Each refueling cycle not to exceed 18 months(a)	Each refueling cycle not to exceed 18 months	(a) Only if test indicates calibration required
19. Radiation Monitoring System	Daily*	Each refueling cycle not to exceed 18 months	Monthly	Includes only channels R11 thru R15, R17, R19, R21, and R23

*** Reference TS 4.1.d**

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

CHANNEL DESCRIPTION	CHECK	CALIBRATE	TEST	REMARKS
20. Boric Acid Make-Up Flow Channel	Not applicable	Each refueling cycle not to exceed 18 months	Not applicable	
21. Containment Sump Level	Not applicable	Not applicable	Each refueling cycle not to exceed 18 months	
22. Accumulator Level and Pressure	Each shift	Each refueling cycle not to exceed 18 months	Not applicable	
23. Steam Generator Pressure	Each shift	Each refueling cycle not to exceed 18 months	Monthly	
24. Turbine First Stage Pressure	Each shift	Annually(a)	Monthly	(a) Only if test indicates calibration required
25. Portable Radiation Survey Instruments	Monthly*	Annually	Quarterly	
26. Protective System Logic Channel Testing	Not applicable	Not applicable	Monthly	Includes auto load sequencer
27. Deleted				

*** Reference TS 4.1.d**

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

CHANNEL DESCRIPTION	CHECK	CALIBRATE	TEST	REMARKS
28. Turbine Overspeed Protection				
a. Electro-Hydraulic System	Not applicable	Not applicable	Each refueling cycle not to exceed 18 months	
b. Mechanical System	Not applicable	Each refueling cycle not to exceed 18 months(a)	Monthly	(a) A calibration check is performed for the Mechanical System once per refueling cycle; repairs are made if necessary
c. Redundant Overspeed Trip System	Not applicable	Each refueling cycle not to exceed 18 months	Monthly	
29. Seismic Monitoring System	Each refueling cycle not to exceed 18 months	Each refueling cycle not to exceed 18 months	Not applicable	
30. Fore Bay Water Level	Not applicable	Each refueling cycle not to exceed 18 months(a)	Each refueling cycle not to exceed 18 months	(a) Only if test indicates calibration required
31. AFW Flow Rate	(a)	Each refueling cycle not to exceed 18 months	Not applicable	(a) Flow rate indication will be checked at each unit startup and shutdown

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

CHANNEL DESCRIPTION	CHECK	CALIBRATE	TEST	REMARKS
32. PORV Position Indication	Monthly	Each refueling cycle not to exceed 18 months	Not applicable	
a. Back-up (Temperature)	Monthly	Each refueling cycle not to exceed 18 months	Not applicable	
33. PORV Block Valve Position Indicator	Monthly	Each refueling cycle not to exceed 18 months	Not applicable	
34. Safety Valve Position Indicator (Acoustic)	Monthly	Each refueling cycle not to exceed 18 months	Not applicable	
a. Back-up (Temperature)	Monthly	Each refueling cycle not to exceed 18 months	Not applicable	
35. FW Pump Trip (AFW Initiation)	Not applicable	Not applicable	Each refueling cycle not to exceed 18 months	
36. Reactor Coolant System Subcooling Monitor	Monthly	Each refueling cycle not to exceed 18 months(a)	Each refueling cycle not to exceed 18 months	(a) Only if test indicates calibration required

TABLE TS 4.1-1

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TEST OF INSTRUMENT CHANNELS

CHANNEL DESCRIPTIDN	CHECK	CALIBRATE	TEST	REMARKS
37. Containment Pressure (Wide Range)	Daily	Each refueling cycle not to exceed 18 months	Not applicable	
38. Containment Hydrogen Monitors	Daily	Each refueling cycle not to exceed 18 months	Monthly	
39. Containment Water Level (Wide Range)	Not applicable	Not applicable	Each refueling cycle not to exceed 18 months	