

ATTACHMENT 3 to TXX-94034

AFFECTED TECHNICAL SPECIFICATION PAGES
(NUREG - 1468)

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PDR ADDCK 05000445
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3/4.5 EMERGENCY CORE COOLING SYSTEMS

3/4.5.1 ACCUMULATORS

COLD LEG INJECTION

LIMITING CONDITION FOR OPERATION

3.5.1 Each cold leg injection accumulator shall be OPERABLE with:

- a. The discharge isolation valve open with power removed,
- b. ^{A contained} ~~An indicated~~ borated water ^{volume} ~~level~~ of between ^{6119 and 6597 gallons} ~~39% and 61%~~
- c. A boron concentration of between 2300 ppm for Unit 1 (1900 ppm for Unit 2) and 2600 ppm for Unit 1 (2200 ppm for Unit 2), and
- d. ^{A nitrogen} ~~An indicated~~ cover-pressure of between ^{603 693} ~~623 and 644~~ psig.

APPLICABILITY: MODES 1, 2, and 3*.

ACTION:

- a. With one cold leg ^g injection accumulator inoperable, except as a result of a closed isolation valve or the boron concentration outside the required values, restore the inoperable accumulator to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and reduce pressurizer pressure to less than 1000 psig within the following 6 hours.
- b. With one cold leg injection accumulator inoperable due to the isolation valve being closed, either immediately open the isolation valve or be in at least HOT STANDBY within 6 hours and reduce pressurizer pressure to less than 1000 psig within the following 6 hours.
- b.c. With the boron concentration of one cold leg injection accumulator outside the required limit, restore the boron concentration to within the required limits within 72 hours or be in at least HOT STANDBY within the next 6 hours and reduce pressurizer pressure to less than 1000 psig within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.5.1.1 Each cold leg injection accumulator shall be demonstrated OPERABLE:

- a. At least once per 12 hours by:
 - 1) Verifying ^{that contained} the ~~indicated~~ borated water ^{volume} ~~level~~ and nitrogen cover-pressure in the tanks, and
 are within their limits

*Pressurizer pressure above 1000 psig.

COMANCHE PEAK - UNITS 1 AND 2

3/4 5-1

Unit 1 - Amendment No. 19

Unit 2 - Amendment No. 5

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2) Verifying that each cold leg injection accumulator isolation valve is open.

b. At least once per 31 days and within 6 hours after each indicated solution volume increase of greater than or equal to 101 gallons (12% of span) by verifying the boron concentration of the solution in the water-filled accumulator.

c. At least once per 31 days when the RCS pressure is above 1000 psig by verifying that power to the isolation valve operator is removed.

4.5.1.2 Each accumulator water level and pressure channel shall be demonstrated OPERABLE:

a. At least once per 31 days by the performance of an ANALOG CHANNEL OPERATIONAL TEST, and

b. At least once per 18 months by the performance of a CHANNEL CALIBRATION.

This surveillance is not required when the volume makeup source is the RWST and the RWST has not been diluted since verifying that the RWST boron concentration is equal to or greater than the accumulator boron concentration limit.

EMERGENCY CORE COOLING SYSTEMSSURVEILLANCE REQUIREMENTS (Continued)

4.5.2 Each ECCS subsystem shall be demonstrated OPERABLE:

- a. At least once per 12 hours by verifying that the following valves are in the indicated positions with power to the valve operators removed:

<u>Valve Number</u>	<u>Valve Function</u>	<u>Valve Position</u>
8802 A & B	SI Pump to Hot Legs	Closed
8808 A, B, C, D	Accum. Discharge	Open*
8809 A & B	RHR to Cold Legs	Open
8835	SI Pump to Cold Legs	Open
8840	RHR to Hot Legs	Closed
8806	SI Pump Suction from RWST	Open
8813	SI Pump Mini-Flow Valve	Open

- b. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.
- c. By a visual inspection which verifies that no loose debris (rags, trash, clothing, etc.) is present in the containment which could be transported to the containment sump and cause restriction of the pump suction during LOCA conditions. This visual inspection shall be performed:
- 1) For all accessible areas of the containment prior to establishing CONTAINMENT INTEGRITY, and
 - 2) *At least once daily* of the areas affected within containment *by containment entry (and during the final* ~~at the completion of each containment entry~~ when CONTAINMENT INTEGRITY is established.
- d. At least once per 18 months by:
- 1) Verifying interlock action of the RHR system from the Reactor Coolant System to ensure that with a simulated or actual Reactor Coolant System pressure signal greater than or equal to 442 psig the interlocks prevent the valves from being opened.

*Surveillance Requirements covered in Specification 4.5.1.1.

3/4.5 EMERGENCY CORE COOLING SYSTEMSBASES3/4.5.1 ACCUMULATORS

The OPERABILITY of each Reactor Coolant System (RCS) accumulator ensures that a sufficient volume of borated water will be immediately forced into the reactor core through each of the cold legs in the event the RCS pressure falls below the pressure of the accumulators. This initial surge of water into the core provides the initial cooling mechanism during large RCS pipe ruptures.

The limits on accumulator volume, boron concentration and pressure ensure that the assumptions used for accumulator injection in the safety analysis are met. The required indicated accumulator volumes and pressures include a 5 percent measurement uncertainty. The indicated accumulator volumes of 39% and 61% are based on the analytical limits of 6119 gallons and 6597 gallons, respectively, plus a 1% tank tolerance.

The accumulator power operated isolation valves are considered to be "operating bypasses" in the context of IEEE Std. 279-1971, which requires that bypasses of a protective function be removed automatically whenever permissive conditions are not met. In addition, as these accumulator isolation valves fail to meet single failure criteria, removal of power to the valves is required by BTP ICSB 18. This is accomplished via key-lock control board cut-off switches.

The limits for operation with an accumulator inoperable for any reason except an isolation valve closed minimizes the time exposure of the plant to a LOCA event occurring concurrent with failure of an additional accumulator which may result in unacceptable peak cladding temperatures. If a closed isolation valve cannot be immediately opened, the full capability of one accumulator is not available and prompt action is required to place the reactor in a mode where this capability is not required.

3/4.5.2 and 3/4.5.3 ECCS SUBSYSTEMS

The OPERABILITY of two independent ECCS subsystems ensures that sufficient emergency core cooling capability will be available in the event of a LOCA assuming the loss of one subsystem through any single failure consideration. Either subsystem operating in conjunction with the accumulators is capable of supplying sufficient core cooling to limit the peak cladding temperatures within acceptable limits for all postulated break sizes ranging from the double ended break of the largest RCS cold leg pipe downward. In addition, each ECCS subsystem provides long-term core cooling capability in the recirculation mode during the accident recovery period.

With the RCS temperature below 350°F, one OPERABLE ECCS subsystem is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the limited core cooling requirements.

The limitation for a maximum of two charging pumps to be OPERABLE and the requirement to verify one charging pump and all safety injection pumps

Insert A

The required accumulator contained volume and nitrogen cover pressure specified in LCO 3.5.1 represent analytical limits. Measurement uncertainty has not been incorporated into the specified required values. Current control room instrumentation used for indication of accumulator volumes and pressures include a 5 percent measurement uncertainty. Using this instrumentation, indicated values of between 39% and 61% for accumulator level (based on the analytical limits of 6119 gallons and 6597 gallons, respectively plus a 1% tank tolerance) and between 623 psig and 644 psig (based on analytical limits of 603 psig and 693 psig, respectively) for accumulator nitrogen cover pressure, satisfy the acceptance criteria for SR 4.5.1. Other methods employed to verify these values in satisfying SR 4.5.1 shall account for measurement uncertainties.

Insert B

If the boron concentration of one accumulator is not within limits, it must be returned to within the required limits within 72 hours. In this condition, the ability to maintain subcriticality may be reduced. The boron in the accumulators contributes to the assumption that the combined ECCS water in the partially recovered core during the early reflooding phase of a large break LOCA is sufficient to keep that portion of the core subcritical. One accumulator below the minimum boron concentration limit, however, will have no effect on available ECCS water and an insignificant effect on core subcriticality during reflood. Thus, 72 hours is allowed to return the boron concentration to within limits.

If one accumulator is inoperable for any reason other than boron concentration, the accumulator must be returned to OPERABLE status within one hour. In this inoperable condition, the required contents of three accumulators cannot be assumed to reach the core during a LOCA, which may result in unacceptable peak cladding temperatures. Due to the severity of the consequences should a LOCA occur in these conditions, the one hour completion time to open the valve, remove power to the valve, or restore the proper water volume or nitrogen cover pressure ensures that prompt action will be taken to return the inoperable accumulator to OPERABLE status. The completion time minimizes the potential for exposure of the plant to a LOCA under these conditions.

ENCLOSURE 1 to TXX-94034

GENERIC LETTER 93-05



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

September 27, 1993

TO: ALL HOLDERS OF OPERATING LICENSES OR CONSTRUCTION PERMITS FOR NUCLEAR POWER REACTORS

SUBJECT: LINE-ITEM TECHNICAL SPECIFICATIONS IMPROVEMENTS TO REDUCE SURVEILLANCE REQUIREMENTS FOR TESTING DURING POWER OPERATION (GENERIC LETTER 93-05)

The staff of the U.S. Nuclear Regulatory Commission (NRC) has completed a comprehensive examination of surveillance requirements in technical specifications (TS) that require testing during power operation. This effort is a part of the NRC Technical Specifications Improvement Program (TSIP). The results of this work are reported in NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements," December 1992. NUREG-1366 is available for examination in the NRC Public Document Room, 2120 L Street, NW, Lower Level, Washington, D.C. and for purchase from the GPO Sales Program by writing to the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 37082, Washington, DC 20013-7082. In performing this study, the staff found that, while the majority of the testing at power is important, safety can be improved, equipment degradation decreased, and an unnecessary burden on personnel resources eliminated by reducing the amount of testing that the TS require during power operation. However, only a small fraction of the TS surveillance intervals warranted relaxation. The staff has prepared the enclosed guidance to assist licensees in preparing a license amendment request to implement these recommendations as line-item TS improvements. The NRC issued improved standard technical specifications in September 1992 that incorporated the recommendations of NUREG-1366.

The staff encourages licensees who plan to adopt these line-item TS improvements to propose TS changes that are consistent with the enclosed guidance. Licensees may propose to implement any number of the TS changes that are applicable to their facilities. NRC project managers will perform the review to ensure that the amendment requests conform to this guidance. Please contact your project manager or the contact listed below if you have any questions on this matter.

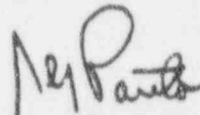
Licensee action to propose TS changes under the guidance of this generic letter is voluntary. Therefore, such action is not a backfit under the provisions of Section 50.109 to Title 10 of the Code of Federal Regulations (10 CFR 50.109). The following information, although not requested under the provisions of 10 CFR 50.54(f), would help the NRC evaluate costs and benefits for licensees who propose the TS changes described in this generic letter:

- licensee time and costs to prepare the amendment request
- estimate of the long-term costs or savings accruing from this TS change

September 27, 1993

Office of Management and Budget Clearance Number 3150-0011, which expires June 30, 1994, covers this request. The estimated average number of burden hours is 40 person-hours per licensee response, including those needed to assess the recommendations, search data sources, gather and analyze the data, and prepare the required letters. Send comments on this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Information and Records Management Branch (MNBB 7714), Division of Information Support Services, Office of Information and Resource Management, U.S. Nuclear Regulatory Commission, Washington, D.C., 20555, and to Ronald Minsk, Office of Information and Regulatory Affairs (3150-0011), NEOB-3019, Office of Management and Budget, Washington, D.C., 20503.

Sincerely,



James G. Partlow
Associate Director for Projects
Office of Nuclear Reactor Regulation

Enclosures:

1. Guidance for Implementing Line-Item Technical Specifications
Improvements to Reduce Testing During Power Operation
2. List of Recently Issued NRC Generic Letters

Contact: T. G. Dunning, NRR
(301) 504-1189

GUIDANCE FOR IMPLEMENTING LINE-ITEM TECHNICAL SPECIFICATIONS IMPROVEMENTS TO REDUCE TESTING DURING POWER OPERATION

INTRODUCTION

This enclosure provides guidance for preparing a license amendment request to change the technical specifications (TS) to reduce testing during power operation. These line-item TS improvements are based on the recommendations of a U.S. Nuclear Regulatory Commission (NRC) study that included a comprehensive examination of surveillance requirements and is reported in NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements," December 1992.

Each of the applicable recommendations in NUREG-1366 is addressed herein with examples of TS changes to the standard technical specifications (STS) requirements that were used as model TS when many plants obtained their operating license. The title and number of each of these line-item improvements corresponds to the section title and number in NUREG-1366 in which the staff recommended the change. The staff is providing the NUREG recommendation for each item, but the NUREG finding is provided only where it is necessary to clarify the intent of the NUREG recommendation. The staff is providing the wording for the changes to specific sections of the TS, using the noted model STS requirements with the reactor vendor identified in brackets and noted as "Typ" where it is typical of the change that applies to the TS for reactors of more than one type or vendor. For a few of the recommendations, the staff is providing the wording that was used in an approved amendment request for a specific plant. In such cases, the plant is identified in brackets as the source of the guidance.

The proposed TS changes for plants that have TS in a format that is different than the STS should be consistent with the intent of the NUREG recommendation, the enclosed guidance, and the format of individual plant TS.

COMPATIBILITY WITH OPERATING EXPERIENCE

Licensees should not propose changes to extend any surveillance interval if the recommendations of NUREG-1366 are not compatible with plant operating experience. Therefore, each licensee should include a statement in the license amendment request that all proposed TS changes are compatible with plant operating experience and are consistent with this guidance.

LINE-ITEM TS IMPROVEMENTS

4.1 Moderator Temperature Coefficient Measurements (PWR)

Findings: (1) Technical Specifications require a determination of moderator temperature coefficient at 300 ppm boron concentration. (2) If measured moderator temperature coefficient is more negative (less conservative than the TS value), the licensee must measure the moderator temperature coefficient every 14 EFPDs [effective full-power days] until the end of the cycle. (3) Measuring the moderator temperature coefficient at low boron concentrations is difficult. (4) VEPCO [Virginia Electric Power Company] proposed a method for

(4.1, Cont.)

eliminating this requirement below 60 ppm. (5) Method is plant-specific. Recommendation: Other licensees may wish to use the VEPCO approach.

The following condition must be met and addressed to justify the use of the VEPCO approach:

Results of plant-specific analysis are required that show that the maximum possible change in moderator temperature coefficient (MTC) from 60 ppm to the end of the operating cycle (EOC) is less than the difference in the values of MTC from 60 ppm to EOC MTC that are specified in this technical specification.

3/4.1 Reactivity Control Systems - Moderator Temperature Coefficient, [W STS (Typ)] TS 4.1.1.3:

The MTC shall be determined to be within its limits during each fuel cycle as follows:

- a. The MTC shall be measured and compared to the BOL [beginning of life] limit Specification 3.1.1.3a., above, prior to initial operation above 5% of RATED THERMAL POWER, after each fuel loading; and
- b. The MTC shall be measured at any THERMAL POWER and compared to $-[3.0] \times 10^{-4}$ delta-k/k/degree-F (all rods withdrawn, RATED THERMAL POWER condition) within 7 EFPD after reaching an equilibrium boron concentration of 300 ppm.* In the event this comparison indicates the MTC is more negative than $-[3.0] \times 10^{-4}$ delta-k/k/degree-F, the MTC shall be measured, and compared to the EOC MTC limit of Specification 3.1.1.3b., at least once per 14 EFPD during the remainder of the fuel cycle.

* Once the equilibrium boron concentration (all rods withdrawn, RATED THERMAL POWER condition) is 60 ppm or less, further measurement of the MTC may be suspended if the measured MTC at an equilibrium boron concentration of 60 ppm or less is less negative than [the predicted value of MTC at 60 ppm].

(Footnote added to be consistent with recommendation.)

4.2 Control Rod Movement Test

4.2.1 Pressurized Water Reactors

Recommendation: Change frequency of the PWR control rod movement test to quarterly.

3/4.1.3 Movable Control Assemblies, [W STS (Typ)] TS 4.1.3.1.2:

Each full-length rod not fully inserted in the core shall be determined to be OPERABLE by movement of at least 10 steps in any one direction at least once per 92 days.

(TS 4.1.3.1.2, Cont.)

(Replaced "31" with "92.")

4.2.2 Boiling Water Reactors

Recommendation: The TS should be changed to require that if a control rod is immovable because of friction or mechanical interference, the other control rods should be tested within 24 hours and every 7 days thereafter. (NOTE: Existing TS requirements include testing control rods every 7 days. Therefore, the recommendation to change the frequency for tests that apply when a control rod is immovable to include "once every 7 days thereafter" is already covered by the existing requirements that apply before the occurrence of an immovable rod as noted in item a below.)

3/4.1.3 Control Rods, [BWR/6 STS (Typ)] TS 4.1.3.1.2:

When above the low power setpoint of the RPCS, all withdrawn control rods not required to have their directional control valves disarmed electrically or hydraulically shall be demonstrated OPERABLE by moving each control rod at least one notch:

- a. At least once per 7 days, and
- b. Within 24 hours when any control rod is immovable as a result of excessive friction or mechanical interference.

(Replaced "At least once per" with "Within.")

4.3 Standby Liquid Control System (BWR)

Recommendation: (1) Explosive valves should be tested once each refueling interval for fuel cycles up to 24 months duration. (2) The SBLC system pump test should be required by technical specifications quarterly, in agreement with the ASME Code.

3/4.1.5 Standby Liquid Control System, [BWR/5 STS (Typ)] TS 4.1.5:

The standby liquid control system shall be demonstrated OPERABLE:

- a. At least once per 24 hours by verifying that:
(No change to items a.1, a.2, and a.3.)
- b. At least once per 31 days by:
 1. (Unused)

(Item b.1 is noted as "Unused" since it is relocated to item c.1, below. No change to items b.2, b.3, and b.4.)

- c. At least once per 92 days by:

(TS 4.1.5, Cont.)

(New item c. The current item c is renumbered as item d, below.)

1. Starting both pumps and recirculating demineralized water to the test tank.

(Item c.1 is relocated from b.1, above.)

d. At least once each refueling interval by:

(Replaced "per 18 months during shutdown" with "each refueling interval.")

1. Initiating one of the standby liquid control system loops, including an explosive valve, and verifying that a flow path from the pumps to the reactor pressure vessel is available by pumping demineralized water into the reactor vessel. The replacement charge for the explosive valve shall be from the same manufactured batch as the one fired or from another batch which has been certified by having one of the batch successfully fired. Both injection loops shall be tested in any two consecutive refueling intervals.

(Item c.1 was relocated from item b.1, above, and replaced "36 months" with "any two consecutive refueling intervals." No change to items d.2 through d.5 that were renumbered as items c.2 through c.5.)

3/4.1.5 Standby Liquid Control System, [BWR/4 STS (Typ)] TS 4.1.5:

The standby liquid control system shall be demonstrated OPERABLE by:

- c. Demonstrating that when tested (pursuant to Specification 4.0.5) (at least once per 92 days), the minimum flow requirement of (41.2) gpm at a pressure of greater than or equal to (1220) psig is met.

(Item c is consistent with the recommended change. No change to item c or to items a and b is required.)

d. At least once each refueling interval by:

(Replaced "per 18 months during shutdown" with "each refueling interval.")

1. Initiating one of the standby liquid control system loops, including an explosive valve, and verifying that a flow path from the pumps to the reactor pressure vessel is available by pumping demineralized water into the reactor vessel. The replacement charge for the explosive valve shall be from the same manufactured batch as the one fired or from another batch which has been certified by having one of the batch successfully fired. Both injection loops shall be tested in any two consecutive refueling intervals.

(TS 4.1.5, Cont.)

(Replaced "36 months" with "any two consecutive refueling intervals." No change to items d.2 through d.4.)

4.4 Closure Time Testing of Scram Discharge Volume Vent and Drain Valves (BWR)

Recommendation: Other BWR licensees may wish to use the Georgia Power Co./GE method on a plant-specific basis to extend the SDV vent and drain valve closure time requirement.

The following condition must be met and addressed to justify the use of the Georgia Power Co./GE method:

Results of plant-specific analysis are required using approved methods, for example, General Electric analysis MDE 103 1184, to derive a new vent and drain valve closure time. The analysis must take into account assumptions about the value of each of the following factors: (1) scram time, (2) displacement volume of water per individual control rod drive, (3) average expected post-scram leakage flow per individual control rod drive, (4) SDV drain flow before isolation, and (5) minimum scram discharge volume.

3/4.1.3 Control Rods, [BWR/6 STS (Typ)] TS 4.1.3.1.4:

Plant-specific valve closure times should be provided in item a.1 of TS 4.1.3.1.4 addressed under the recommendations for Section 4.5, below.

4.5 Reactor Scram Testing to Demonstrate Operability of Scram Discharge Volume (SDV) Vent and Drain Valves (BWR)

Recommendations: (1) Remove the requirement for a scram check of SDV vent and drain valve operability at 50% rod density or less.
(2) Require an evaluation of SDV system response after each scram to verify that no abnormalities exist prior to plant restart.
(3) Require vent and drain valve operability testing during a scram from shutdown conditions.

3/4.1.3 Control Rods, [BWR/6 STS (Typ)] TS 4.1.3.1.1:

The scram discharge volume drain and vent valves shall be demonstrated OPERABLE by:

- a. At least once per 31 days verifying each valve to be open, and
- b. Evaluating SDV system response prior to plant startup after each scram to verify that no abnormalities exist.

(This change to item b replaces the 92-day cycling test for each valve.)

TS 4.1.3.1.4:

The scram discharge volume shall be determined OPERABLE by demonstrating:

- a. The scram discharge volume drain and vent valves OPERABLE, when control rods are scram tested from a shutdown condition at least once per 18 months, by verifying that the drain and vent valves:

(Replaced "a 50% rod density or less" with "a shutdown condition.")

1. Close within (30) seconds after receipt of a signal for control rods to scram, and
2. Open when the scram signal is reset.

- b. (No change.)

5.1 Nuclear Instrumentation Surveillance (PWR)

Recommendation: Change surveillance intervals of analog channel functional tests of nuclear instrumentation to quarterly.

Plant-specific requirements have been established on the basis of the staff's review and approval of topical reports for extending the surveillance intervals for reactor protection system channels from monthly to quarterly as follows:

Letter from C. O. Thomas (NRC) to J. J. Sheppard (WOG - CP&L), February 21, 1985, Subject: Acceptance for Referencing of Licensing Topical Report WCAP-10271, "Evaluation of Surveillance Frequencies and Out Of Service Time for the Reactor Protection Instrumentation Systems." Also see Westinghouse Owners Group Guidelines for Preparing Submittals Requesting Revision of Reactor Protection System Technical Specifications, Revision 1, per letter OG-158, L. D. Butterfield (WOG - CECO) to Harold R. Denton (NRC), September 3, 1985.

Letter from A. C. Thadani (NRC) to T. A. Pickens (BWROG - NSPC), July 15, 1987, Subject: General Electric Company (GE) Topical Reports NEDC-30844, "BWR Owners Group Response to NRC Generic Letter 83-28," and NEDC-30851P, "Technical Specification Improvement Analysis for BWR RPS."

Letter from A. C. Thadani (NRC) to C. W. Smythe (BWOOG - GPU), December 5, 1988, Subject: NRC Evaluation of BWOOG Topical Report BAW 10167 and Supplement 1, "Justification for Increasing the Reactor Trip System On-Line Test Interval."

For CE plants, there is no generic evaluation for increasing RPS surveillance intervals. Therefore, guidance on the recommended TS change is as follows:

3/4.3.1 Reactor Protective Instrumentation, [CE STS] TS Table 4.3-1:

TABLE 4.3-1
REACTOR PROTECTIVE INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>
2. Linear Power Level - High	S	D(2,4)M(3,4),	Q	1, 2
3. Logarithmic Power Level - High	S	R(4)(10)	Q and S/U(1)	1, 2, 3, 4, 5
(Changed Channel Functional Test frequency from "M" to "Q.")				

5.2 Slave Relay Testing (PWR, BWR)

Recommendation: Perform relay testing on a staggered test basis over a cycle and leave the tests carrying highest risk to a refueling outage or other cold shutdown.

The following condition must be met and addressed to justify this approach:

Plant-specific analysis is required to identify those slave relays that should be tested only during a refueling outage or other cold shutdown because of a high risk associated with such testing.

3/4.3.2 Engineered Safety Feature Actuation System (ESFAS) Instrumentation, [W STS (Typ)] TS Table 4.3-2:

TABLE 4.3-2
ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>SLAVE RELAY TEST</u>
[High risk items]	R
[Non-high risk items]	(1)

(1) Every () days on a STAGGERED TEST BASIS.

(Add "SLAVE RELAY TEST" column to TS tables that do not have it and add footnote (1). The test frequency for high risk items is "R," and the test frequency for the remaining items is to be specified in the footnote at the current TS frequency for slave relays tests, but on a staggered test basis.)

5.3 Test Intervals for RPS and ESFAS (PWR, BWR)

Recommendation: Test three-channel systems on the four-channel schedule. Do not test one of the three channels during a four-channel test interval. Thus, the sequence of testing would be:

Three channels	Four channels
A	A
B	B
C	C
	D
A	A

3/4.3.1 Reactor Trip System Instrumentation, [W STS (Typ)] TS Table 4.3-1:

TABLE 4.3-1
TABLE NOTATION

(11) Each channel shall be tested at least every 92 days on a STAGGERED TEST BASIS. Individual channels in three-channel systems may be tested on the same schedule for the corresponding channel of four-channel systems.

(The addition to note 11, which specifies staggered testing of RPS channels, allows testing of three-channel systems on the same schedule for the corresponding channel of four-channel systems. The same addition should be made to the corresponding note in TS Table 4.3-2 that requires staggered testing of ESFAS channels.)

5.4 Hydrogen Monitor Surveillance (PWR, BWR)

Recommendation: Change frequency of calibration to once each refueling interval and analog channel operational test to quarterly.

3/4.6.5 Combustible Gas Control - Hydrogen Monitors, [W STS (Typ)] TS 4.6.5.1:

Each hydrogen monitor shall be demonstrated OPERABLE by the performance of a CHANNEL CHECK at least once per 12 hours, an ANALOG CHANNEL OPERATIONAL TEST at least once per 92 days, and at least once each refueling interval by performing a CHANNEL CALIBRATION using sample gas containing:

(Replaced "31" with "92" and "92 days on a STAGGERED TEST BASIS" with "each refueling interval.")

- a. One volume percent hydrogen, balance nitrogen, and
- b. Four volume percent hydrogen, balance nitrogen.

5.5 Reactor Trip Breaker Testing (PWR)

A TS change was not recommended for this item.

5.6 Power Range Instrument Calibration (PWR)

A TS change was not recommended for this item.

5.7 Control Element Assembly Calculator Surveillance (CE/CPC PWR)

Recommendation: Extend the surveillance interval from monthly to quarterly.

3/4.3.1 Reactor Protective Instrumentation, [CE STS] TS Table 4.3-1:

TABLE 4.3-1
REACTOR PROTECTIVE INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>
15. CEA Calculators	S	R	Q, R(6)	1, 2

(Channel Functional Test frequency changed from "M" to "Q.")

5.8 Incore Detector Surveillance (CE and B&W PWRs)

Recommendation: The B&W surveillance requirement for incore detectors should be used for CE plants.

3/4.3 Instrumentation - Incore Detectors, [B&W STS (Typ)] TS 4.3.3.2:

The incore detector system shall be demonstrated OPERABLE:

- a. By performance of a CHANNEL CHECK within 7 days prior to its use for measurement of the AXIAL POWER IMBALANCE or the QUADRANT POWER TILT.
- b. At least once per 18 months by performance of a CHANNEL CALIBRATION which does not include the neutron detectors.

5.9 Response Time Testing of Isolation Instrumentation (PWR, BWR)

Recommendation: Delete requirement from both BWR and PWR technical specifications to perform response time testing where the required response time corresponds to the diesel start time.

3/4.3.2 ESFAS Instrumentation, [W STS (Typ)] TS Table 3.3-5:

TABLE 3.3-5
ENGINEERED SAFETY FEATURES RESPONSE TIMES

<u>INITIATING SIGNAL AND FUNCTION</u> (Identify item)	<u>RESPONSE TIME IN SECONDS</u> NA
--	---------------------------------------

(TS Table 3.3-5, Cont.)

(Replaced specified response time with "NA" for those Initiating Signal and Function entries in which the response time [excluding the response time of valves that is confirmed under the inservice testing program] corresponds to the diesel start time.)

5.10 Source Range Monitor and Intermediate Range Monitor Surveillances (BWR)

Recommendation: The calibration interval for the BWR SRMs and IRMs should be changed to once each refueling interval.

3/4.3.6 Control Rod Block Instrumentation, [BWR/6 STS (Typ)] Table 4.3.6-1:

TABLE 4.3.6-1
CONTROL ROD BLOCK INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>TRIP FUNCTION</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>CHANNEL CALIBRATION</u>	<u>OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED</u>
3. SOURCE RANGE MONITORS				
a. Detector not full in	NA	S/U(b),W	NA	2, 5
b. Upscale	NA	S/U(b),W	R	2, 5
c. Inoperative	NA	S/U(b),W	NA	2, 5
d. Downscale	NA	S/U(b),W	R	2, 5
4. INTERMEDIATE RANGE MONITORS				
a. Detector not full in	NA	S/U(b),W	NA	2, 5
b. Upscale	NA	S/U(b),W	R	2, 5
c. Inoperative	NA	S/U(b),W	NA	2, 5
d. Downscale	NA	S/U(b),W	R	2, 5

(Changed Channel Calibration frequency from "Q" to "R.")

5.11 Calibration of Recirculation Flow Transmitters (BWR)

A TS change was not recommended for this item.

5.12 Autoclosure Interlocks (PWR, BWR)

A TS change was not recommended for this item.

5.13 Turbine Overspeed Protection System Testing (PWR, BWR)

Recommendation: Where the turbine manufacturer agrees, the turbine valve testing frequency should be changed to quarterly.

The following condition must be met and addressed to justify the use of this approach:

A statement is required confirming the turbine manufacturer's concurrence with the proposed change.

3/4.3.4 Turbine Overspeed Protection, [W STS (Typ)] TS 4.3.4.2:

The above required Turbine Overspeed Protection System shall be demonstrated OPERABLE:

- a. At least once per 92 days by direct observation of the movement of each of the following valves through at least one complete cycle from the running position:

(No change to the listing of turbine valves. Replaced "7" with "92" days and "cycling" with "direct observation of the movement" of each valve.)

- b. (Unused)

(Item b is noted as "Unused" since surveillance for direct observation of valve movement is included in item a above.)

5.14 Radiation Monitors (PWR, BWR)

Recommendation: In order to decrease licensee burden and increase the availability of radiation monitors, change the monthly channel functional test to quarterly.

3/4.3.2 Engineered Safety Feature Actuation System Instrumentation, [CE STS (Typ)] TS Table 4.3-2:

Table 4.3-2
ENGINEERED SAFETY FEATURE ACTUATION SYSTEMS INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>
5. SHIELD BUILDING FILTRATION (SBFAS)				
e. Containment Radiation - High Gaseous Monitor	S	R	Q	1, 2, 3, 4

(Table 4.3-2, cont.)

<u>FUNCTIONAL UNIT</u> (5.e, Cont.)	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>
Particulate Monitor	S	R	Q	1, 2, 3, 4
Area Monitor	S	R	Q	1, 2, 3, 4
7. CONTAINMENT PURGE VALVES ISOLATION				
e. Containment Radiation - High Gaseous Monitor				
Particulate Monitor	S	R	Q	1, 2, 3, 4
Area Monitor	S	R	Q	1, 2, 3, 4

(Channel Functional Test frequency changed from "M" to "Q.")

3/4.3.3 Monitoring Instrumentation - Radiation Monitoring Instrumentation, [CE STS (Typ)] TS Table 4.3-3:

TABLE 4.3-3
RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>
(All items)	(No change)	(No change)	Q	(No change)

(Channel Functional Test frequency changed from "M" to "Q.")

3/4.3.3 Monitoring Instrumentation - Radioactive Liquid Effluent Monitoring Instrumentation, - Radioactive Gaseous Effluent Monitoring Instrumentation, [W STS (Typ)] TS Table 4.3-8 and Table 4.3-9:

No change in existing STS guidance is required. The surveillance interval for an Analog Channel Operational Test (equivalent of a Channel Functional Test for other reactor vendors) is specified as "Q" (quarterly). Plants having a monthly test interval for this surveillance may request a change in the test interval to quarterly.

5.15 Radioactive Gas Effluent Monitor Calibration Standard (PWR, BWR)

A TS change was not recommended for this item.

6.1 Reactor Coolant System Isolation Valves (PWR)

Recommendation: Increase the 72-hour time for remaining in cold shutdown without leak testing the RCS isolation valves to 7 days.

3/4.4.6 Feactor Coolant System Leakage - Leakage Detection Systems, [W STS (Typ)] TS 4.4.6.2.2:

Each Reactor Coolant System Pressure Isolation Valve specified in Table 3.4-1 shall be demonstrated OPERABLE by verifying leakage to be within its limit:

- a. At least once per 18 months,
- b. Prior to entering MODE 2 whenever the plant has been in COLD SHUTDOWN for 7 days or more and if leakage testing has not been performed in the previous 9 months.

(Replaced "72 hours" with "7 days." No change to items c, d, and e.)

6.2 Power-(or Pilot-) Operated Relief Valve (PORVs) and Block Valves (PWR)

Recommendation: Direction concerning PORV and block valves surveillances will be provided in the resolution of GI-70 and GI-94.

This guidance was provided by Generic Letter 90-06, June 25, 1990.

6.3 High Point Vent Surveillance Testing (PWR)

Recommendation: Licensees to evaluate applicability of Catawba Technical Specification Bases with respect to high point vent surveillance testing and revise the frequency of testing of RCS vent valves to cold shutdown or refueling if appropriate.

Catawba TS Bases 3/4.4.11, Reactor Coolant System Vents, states the following:

Reactor Coolant System vents are provided to exhaust noncondensable gases and/or steam from the primary system that could inhibit natural circulation core cooling. The OPERABILITY of at least one Reactor Coolant System vent path from the reactor vessel head, and the pressurizer steam space ensures that the capability exists to perform this function.

The valve redundancy of the Reactor Coolant System vent paths serves to minimize the probability of inadvertent or irreversible actuation while ensuring that a single failure of a vent valve, power supply or control system does not prevent isolation of the vent path.

The function, capabilities, and testing requirements of the Reactor Coolant System vent systems are consistent with the requirements of Item II.B.1 of NUREG-0737, "Clarification of TMI Action Plan Requirements," November 1980.

(6.3, Cont.)

Licensees should confirm and incorporate the applicable portions of the above Catawba TS Bases into the Bases Section for Reactor Coolant System Vent TS to implement the following TS change.

3/4.4.11 Reactor Coolant System Vents, [W STS (Typ)] TS 4.4.11.1:

Each Reactor Coolant System vent path block valve not required to be closed by ACTION a. or b., above, shall be demonstrated OPERABLE at least once per COLD SHUTDOWN, if not performed within the previous 92 days, by operating the valve through one complete cycle of full travel from the control room.

(Added "COLD SHUTDOWN, if not performed within the previous.")

6.4 Low-Temperature Overpressure Protection (PWR)

A TS change was not recommended for this item.

6.5 Specific Activity of the Reactor Coolant 100/E (PWR, BWR)

A TS change was not recommended for this item.

6.6 Pressurizer Heaters (PWR)

Recommendation: The capacity of pressurizer heaters should be tested once each refueling interval for those plants without dedicated safety-related heaters. The capacity of pressurizer heaters should be tested every 92 days for plants with dedicated safety-related heaters. For those PWRs which have pressurizer heaters tied to a vital bus, no testing of switching between power supplies should be required.

3/4.4.3 Pressurizer, [W STS (Typ)] TS 4.4.3.2:

The capacity of each of the above required groups of pressurizer heaters shall be verified by energizing the heaters and measuring circuit current at least once per 92 days.

(No change. This TS guidance is applicable for plants with dedicated safety-related heaters.)

The capacity of each of the above required groups of pressurizer heaters shall be verified by energizing the heaters and measuring circuit current at least once each refueling interval.

(Replaced "per 92 days" with "each refueling interval." Applicable for plants without dedicated safety-related heaters.)

3/4.4.3 Pressurizer, [W STS (Typ)] TS 4.4.4.3:

The emergency power supply for the pressurizer heaters shall be demonstrated OPERABLE at least once per 18 months by manually transferring power from the normal to the emergency power supply and energizing the heaters.

(No change, but this TS is not applicable for plants with some pressurized heaters permanently tied to a vital bus and it may be removed.)

7.1 Surveillance of Boron Concentration in the Accumulator/Safety Injection/ Core Flood Tank (PWR)

Recommendation: It should not be necessary to verify boron concentration of accumulator inventory after a volume increase of 1% or more if the makeup water is from the RWST and the minimum concentration of boron in the RWST is greater than or equal to the minimum boron concentration in the accumulator, the recent RWST sample was within specifications, and the RWST has not been diluted.

3/4.5.1 Accumulators - Cold Leg Injection, [W STS (Typ)] TS 4.5.1.1.1:

Each cold leg injection accumulator shall be demonstrated OPERABLE:

- a. (No change.)
- b. At least once per 31 days and within 6 hours of each solution volume increase of greater than or equal to [1% of tank volume] by verifying the boron concentration in the water-filled accumulator. This surveillance is not required when the volume increase makeup source is the RWST and the RWST has not been diluted since verifying that the RWST boron concentration is equal to or greater than the accumulator boron concentration limit.

(Added clarification to note when surveillance is not required. For B&W and CE plants, the term "cold leg injection accumulator" is replaced with "core flooding tank" or "safety injection tank," respectively, and "RWST" is replaced with "borated water storage tank" or "refueling water tank," respectively.)

7.2 Verification That ECCS Lines Are Full of Water (Contain No Air) (PWR)

A TS change was not recommended for this item.

7.3 Verification of Proper Valve Lineups of ECCS and Containment Isolation Valves (PWR, BWR)

A TS change was not recommended for this item.

7.4 Accumulator Water Level and Pressure Channel Surveillance Requirements (PWR)

Recommendation: (1) Licensees to examine channel checks surveillance and operational history to determine if there is a basis for justifying the extension of frequency for analog channel operational tests for pressure and level channels. (2) Add a condition to the ECCS accumulator LCO for the case where "One accumulator is inoperable due to the inoperability of water level and pressure channels," in which the completion time to restore the accumulator to operable status will be 72 hours.

The NRC staff and industry effort to develop new STS recognized that accumulator instrumentation operability is not directly related to the capability of the accumulators to perform their safety function. Therefore, surveillance requirements for this instrumentation are being relocated from the new STS and the only surveillance that is being retained is that required to confirm that the parameters defining accumulator operability are within their specified limits.

3/4.5.1 Accumulators - Cold Leg Injection, [W STS (Typ)] TS 4.5.1.1.1:

Each cold leg injection accumulator shall be demonstrated OPERABLE:

a. At least once per 12 hours by:

1. Verifying that the contained borated water volume and nitrogen cover-pressure in the tanks are within their limits, and

(Removed the reference to verifying operability "by the absence of alarms" consistent with the removal of the surveillance requirements for this instrumentation. Added clarification to verifying that the noted parameters are within their limits.)

2. Verifying that each cold leg injection accumulator isolation valve is open.

(No change for item a.2.)

3/4.5.1 Accumulators - Cold Leg Injection, [W STS (Typ)] TS 4.5.1.1.2:

Each accumulator water level and pressure channel shall be demonstrated OPERABLE:

- a. At least once per 31 days by the performance of an analog channel operational test, and
- b. At least once per 18 months by the performance of a CHANNEL CALIBRATION.

Specification 4.5.1.1.2 above may be removed from TS but should be retained as an existing plant procedure requirement that may be subsequently modified under plant change control procedures and the related requirements of the Administrative Controls Section of the TS.

7.5 Visual Inspection of the Containment Sump (PWR)

Recommendation: Inspection of the containment at least once daily if the containment has been entered that day, and during the final entry to ensure that there is no loose debris that would clog the sump.

3/4.5.1.2 ECCS Subsystems - Tavg Greater Than or Equal to (350) degrees-F, [CE STS (Typ)] TS 4.5.2:

Each ECCS subsystem shall be demonstrated OPERABLE by:

(No change to items a and b.)

- c. By visual inspection which verifies that no loose debris (rags, trash, clothing, etc.) is present in the containment which could be transported to the containment sump and cause restriction of the pump suction during LOCA conditions. This visual inspection shall be performed:
 1. For all accessible areas of the containment prior to establishing CONTAINMENT INTEGRITY, and
 2. At least once daily of the areas affected within containment by containment entry and during the final entry when CONTAINMENT INTEGRITY is established.

(The underlined additions were made, and "at the completion of containment entry" was removed as it implied an inspection separate from that activity for which the containment entry was made.)

7.6 Verification of Boron Concentration in the Boron Injection Tank (BIT) (Westinghouse PWR)

Recommendation: Measure concentration of boron in the boric acid storage tank rather than in the BIT if it can be justified that the concentrations are the same.

The following condition must be met and addressed to justify the use of this approach:

A justification is required that the measurement of the boron concentration in the boric acid storage tank verifies the boron concentration in the BIT.

3/4.5.4 Boron Injection System - Boron Injection Tank, [W STS] TS 4.5.4.1:

The boron injection tank shall be demonstrated OPERABLE by:

- a. Verifying the contained borated water volume at least once per 7 days,
- b. Verifying the boron concentration of the water in the tank by measuring the boron concentration in the boric acid storage tank once per 7 days, and

(TS 4.5.4.1, Cont.)

(Added clarification of where measurement is made.)

c. Verifying the water temperature at least once per 24 hours.

(No change for item c.)

8.1 Containment Spray System (PWR)

Recommendation: The surveillance interval [air or smoke flow test] should be extended to 10 years.

Recent Experience: On June 11, 1991, the Southern California Edison Company (SCE) reported that a containment spray system (CSS) air flow test for San Onofre Unit 1 indicated that several nozzles were blocked. SCE investigated and found that seven nozzles were clogged with sodium silicate, a coating material that was applied to the carbon steel CSS piping in 1977. The licensee conducted air flow tests in 1980, 1983, and 1988 and obtained acceptable results.

This event does not alter the recommendation for an extension of the air flow test surveillance interval for plants with the more commonly used stainless steel piping system. However, licensees for plants using carbon steel piping must justify any change in the surveillance interval because of the San Onofre experience.

3/4.6.2 Depressurizing and Cooling Systems - Containment Spray System, [CE STS (Typ)] TS 4.6.2.1:

Each Containment Spray System shall be demonstrated OPERABLE:

d. At least once per 10 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

(Replaced "5" with "10")

8.2 Containment Purge Supply and Exhaust Isolation Valves (PWR)

A TS change was not recommended for this item.

8.3 Ice Condenser Inlet Doors (PWR)

Finding: Duke Power Co. justified a surveillance interval for containment inlet door testing that eliminated the need for a shutdown. [Duke Power Co. had 6 years of testing experience for McGuire Units 1 and 2 without a failure and the design does not allow water condensation to freeze, a common cause of stuck doors.]

(8.3, Cont.)

Recommendation: The Duke proposal may be used by other utilities if it can be justified on a plant-specific basis.

3/4.6.7 Ice Condenser - Ice Condenser Doors, [McGuire TS (Typ)] TS 4.6.5.3.1:

Inlet Doors - Ice condenser inlet doors shall be:

- a. (No change.)
- b. Demonstrated OPERABLE during shutdown at least once each refueling interval by:

(Replaced "per 9 months" with "each refueling interval.")

- 1) (No change.)
- 2) (No change.)
- 3) Testing all doors and verifying that the torque required to open each door is less than [195] inch-pounds when the door is 40 degrees open. This torque is defined as the "door opening torque" and is equal to the nominal door torque plus a frictional torque component.

(Replaced "a sample of at least 25% of the" with "all" and removed the last sentence of this section relating to selecting door samples so that all doors are tested at least once during four test intervals.)

8.4 Testing Suppression Chamber to Drywell Vacuum Breakers (BWR)

Recommendation: (1) The monthly surveillance test should be retained.
(2) The time each vacuum breaker shall be tested following any discharge of steam to the suppression chamber should be changed to 12 hours.

3/4.6.4 Vacuum Relief, Suppression Chamber - Drywell Vacuum Breakers, [BWR/5 STS (Typ)] TS 4.6.4.1:

Each suppression chamber - drywell vacuum breaker shall be:

- a. Verified closed at least once per 7 days.
- b. Demonstrated OPERABLE:
 1. At least once per 31 days and within 12 hours after any discharge of steam to the suppression chamber from the safety-relief valves, by cycling each vacuum breaker through at least one complete cycle of full travel.

(Replaced "2" with "12." No change to items 2 and 3.)

8.5 Hydrogen Recombiner (PWR, BWR)

Recommendation: Change the surveillance test interval for the hydrogen recombinder functional test to once each refueling interval. [The test interval is 6 months for some plants.]

3/4.6.5 Combustible Gas Control - Electric Hydrogen Recombiners, [B&W STS (Typ)] TS 4.6.5.2:

Each hydrogen recombinder system shall be demonstrated OPERABLE:

- a. At least once each refueling interval by verifying during a recombinder system functional test that the minimum heater sheath temperature increases to greater than or equal to 700°F within 90 minutes. Upon reaching 700°F, increase the power setting to maximum power for 2 minutes and verify that the power meter reads greater than or equal to 60 KW.

(Replaced "6 months" with "each refueling interval.")

- b. At least once each refueling interval by:

(Replaced "18 months," which is the current STS requirement for PWRs, with "each refueling interval." No change to items b.1, b.2, and b.3.)

3/4.6.7 Atmospheric Control - Containment and Drywell Hydrogen Recombiner Systems, [BWR/6 STS (Typ)] TS 4.6.7.1:

Each containment and drywell hydrogen recombinder system shall be demonstrated OPERABLE:

- a. At least once each refueling interval by verifying during a recombinder system functional test that the minimum (heater sheath) temperature increases to greater than or equal to (700)°F within (90) minutes. (Upon reaching (700)°F, increase the power setting to maximum power for (2) minutes and verify that the power meter reads greater than or equal to (60) KW.) Maintain \geq (700)°F for at least (2) hours.

(Replaced "6 months" with "each refueling interval.")

- b. At least once each refueling interval by:

(Replaced "per 18 months," which is the current BWR/6 STS requirement, with "each refueling interval." No change to items b.1 through b.4.)

8.6 Sodium Tetraborate Concentration in Ice Condenser Containment Ice (W PWR)

Recommendation: Change the analysis interval to once each refueling interval.

3/4.6.7 Ice Condenser - Ice Bed, [W STS] TS 4.6.7.1:

(TS 4.6.7.1, Cont.)

The ice condenser shall be determined OPERABLE:

- a. (No change.)
- b. Once each refueling interval by chemical analyses which verify that at least nine representative samples of stored ice have a boron concentration of at least 1800 ppm as sodium tetraborate and a pH of 9.0 to 9.5 at 20 degrees-C.

(Combined item b and b.1, with the surveillance interval being "Once each refueling interval" rather than "At least once per 9 months.")

- c. At least once per 9 months by: (Renumbered item b as item c.)

(No change to items c.1 and c.2. Renumbered items b.2 and b.3 as items c.1 and c.2.)

- d. (No change to this item. Renumbered item c as item d)

9.1 Auxiliary Feedwater Pump and System Testing (PWR)

Recommendation: Change frequency of testing AFW pumps to quarterly on a staggered test basis.

3/4.7 Plant Systems - Auxiliary Feedwater, [CE STS (Typ)] TS 4.7.1.2:

Each auxiliary feedwater pump shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
 1. Verifying that each valve (manual, power-operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

(Renumbered items a.1 and a.2 as items b.1 and b.2 below, and renumbered item a.3 as a.1.)

- b. At least once per 92 days on a STAGGERED TEST BASIS by:

1. Verifying that each motor-driven pump develops a discharge pressure of greater than or equal to ____ psig at a flow of greater than or equal to ____ gpm.
2. Verifying that the turbine-driven pump develops a discharge pressure of greater than or equal to ____ psig at a flow of greater than or equal to ____ gpm when the secondary steam supply pressure is greater than ____ psig. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3.

(Added item b. Renumbered items a.1 and a.2 as items b.1 and b.2.)

9.2 Main Steam Line Isolation Valve (MSIV) Surveillance Testing (PWR)

A TS change was not recommended for this item.

9.3 Control Room Emergency Ventilation System (PWR, BWR)

Findings: (1) The surveillance requirements for the control room emergency ventilation system contain a requirement that the control room temperature be verified every 12 hours to assure that it is less than a temperature typically in excess of 100 degrees-F. (2) This temperature limit is to ensure equipment operability and human habitability. It does not appear to be effective for either purpose.

Recommendation: Replace this requirement with a more useful surveillance or delete it if a more effective limit cannot be established.

Because the burden for verifying that the control room temperature is within its limit is not believed to be significant, no change to existing TS are proposed in response to this recommendation. However, changes to temperature limits may be proposed on a plant-specific basis to reflect the initial temperature used to calculate the control room peak temperature during a station black-out event.

10.1 Emergency Diesel Generator Surveillance Requirements (PWR, BWR)

Recommendation: (1) When a EDG itself is inoperable (not including a support system or independently testable component), the other EDG(s) should be tested only once (not every 8 hours) and within 8 hours unless the absence of any potential common mode failure can be demonstrated. (2) EDGs should be loaded in accordance with the vendor recommendations for all test purposes other than the refueling outage LOOP tests. (3) The hot-start test following the 24-hour EDG test should be a simple EDG start test. If the hot-start test is not performed within the required 5 minutes following the 24-hour EDG test, it should not be necessary to repeat the 24-hour EDG test. The only requirement should be that the hot-start test is performed within 5 minutes of operating the diesel generator at its continuous rating for 2 hours or until operating temperatures have stabilized. (4) Delete the requirement for alternate testing that requires testing of EDG and other unrelated systems not associated with an inoperable train or subsystem (other than an inoperable EDG).

3/4.8.1 A.C. Sources - Operating, [Typical STS Requirements, not vendor specific] TS 3.8.1.1, ACTIONS:

a. With an offsite circuit of the above required A.C. electrical power sources inoperable,....

(Delete the following requirement to test EDGs: "If either diesel generator has not been successfully tested within the past 24 hours, demonstrate its OPERABILITY by performing Surveillance Requirements

(10.1, Cont.)

4.8.1.1.2.a.5 and 4.8.1.1.2.a.6 for each such diesel generator, separately, within 24 hours.")

b. ... If the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirements 4.8.1.1.2.a.5 and 4.8.1.1.2.a.6 within 8 hours, unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated.

(Added the noted conditions under which testing of an EDG is not required and replaced "24" with "8." Remove any other requirement to perform the specified surveillances every 8 hours thereafter or to perform testing of alternate trains of other systems.)

d. With two of the above required offsite A.C. circuits inoperable, restore....

(Deleted the following requirement to test EDGs: "demonstrate the OPERABILITY of two diesel generators separately by performing the requirements of Specifications 4.8.1.1.2.a.5 and 4.8.1.1.2.a.6 within 1 hour and at least once per 8 hours thereafter, unless the diesel generators are already operating,")

TS 4.8.1.1.2:

a. In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by:

- 6) Verifying the generator is synchronized, loaded to greater than or equal to [continuous rating] kW in accordance with the manufacturer's recommendations, and operates with a load greater than or equal to [continuous rating] for at least 60 minutes, and

(Replaced "less than or equal to [60] seconds" with "accordance with the manufacturer's recommendations.")

e. At least once per 18 months, during shutdown, by:

- 7) Verifying the diesel generator operates for at least 24 hours. ... Within 5 minutes after completing this 24-hour test, perform Specification 4.8.1.1.2.a.5)*....

(Replaced TS "4.8.1.1.2.e.6).b)" [simulated loss-of-offsite power start and load test] with "4.8.1.1.2.a.5)" [EDG start test].)

*If Specification 4.8.1.1.2.a.5 is not satisfactorily completed, it is not necessary to repeat the preceding 24-hour test. Instead, the diesel generator may be operated at [continuous rating] kW for 2 hours or until operating temperature has stabilized.

(10.1, Cont.)

(Replaced the reference to TS "4.8.1.1.1.e.6).b)" with "4.8.1.1.2.a.5)" and replaced "1 hour" with "2 hours." This footnote may be added if it does not exist in plant TS.)

TS (Plant-specific):

Where plant TS require the testing of the one train (other than an EDG) when an alternate train, system, or subsystem is inoperable, such requirements may be removed from plant TS.

10.2 Battery Surveillance Requirements (PWR, BWR)

A TS change was not recommended for this item.

11 REFUELING

A TS change was not recommended in this area.

12 SPECIAL TEST EXCEPTIONSSuspending Shutdown Margin Requirements (PWR)

Recommendation: All PWR licensees may select the Florida Power and Light Co. (FP&L) proposal to eliminate one rod drop test if they satisfy the condition of performing a rod drop test no more than 7 days before reducing shutdown margin. If a rod drop test has been performed within this time, another test is not necessary.

3/4.10 Special Test Exceptions - Shutdown Margin, [FP&L TS (Typ)]
TS 4.10.1.2:

Each CEA not fully inserted shall be demonstrated capable of full insertion when tripped from at least the 50% withdrawn position within 7 days prior to reducing the SHUTDOWN MARGIN to less than the limits of Specification 3.1.1.1.

(Replaced "24 hours" with "7 days.")

13 RADIOACTIVE EFFLUENTSWaste Gas Storage Tanks (PWR)

Recommendation: The surveillance requirement for the limit on the number of curies in the waste gas tank should be changed to: "The quantity of radioactive material contained in each waste gas decay tank shall be determined to be within the limit at least once every 7 days whenever radioactive materials are added to the tank, and at least once every 24 hours during primary coolant system degassing operations."

(13, Cont.)

3/4.11 Radioactive Effluents - Gas Storage Tanks, [W STS (Typ)] TS
4.11.2.6:

The quantity of radioactive material contained in each gas storage tank shall be determined to be within the above limit at least once per 7 days when radioactive materials are added to the tank and at least once per 24 hours during primary coolant system degassing operations.

(Replaced "24 hours" with "7 days" and added the new requirement to perform surveillance during primary coolant system degassing operations.)

14 CONCLUSIONS

General Recommendations

Items (1) through (3) of the General Recommendations did not include any recommendations for changes to technical specifications.

- (4) Section 4.0.2 of the Technical Specifications, which allows the extension of a surveillance test interval, should be made applicable to Section 4.0.5 concerning the ASME Code testing in those Technical Specifications which presently do not allow Section 4.0.2 to be applied.

3/4.0 APPLICABILITY [All STS (Typ)] TS 4.0.5 (c):

- (c) The provisions of Specification 4.0.2 are applicable to the above required frequencies for performing inservice inspection and testing activities.

For plants with custom TS, the reference to TS 4.0.2 should be replaced with the applicable TS section that allows surveillance intervals to be extended by 25 percent of the specified interval. In addition, the term "above" may be deleted from the reference to the "required frequencies for performing inservice inspection and testing activities." Finally, if plant TS do not include a general specification (TS 4.0.5) on inservice inspection and testing, a new numbered general specification requirement should be proposed based on the STS model specification (TS 4.0.5), or the following statement should be proposed for addition to the specification that allows surveillance intervals to be extended by 25 percent of the specified interval:

This provision is applicable to the required frequencies for performing inservice inspection and testing of ASME Code Class 1, 2, and 3 components, pumps, and valves in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda as required by 10 CFR Part 50, Section 50.55a(g).

LIST OF RECENTLY ISSUED GENERIC LETTERS

Generic Letter	Subject	Date of Issuance	Issued To
89-10, Supp. 5	INACCURACY OF MOTOR-OPERATED VALVE DIAGNOSTIC EQUIPMENT	06/28/93	ALL LICENSEES OF OPERATING NUCLEAR POWER PLANTS AND HOLDERS OF CONSTRUCTION PERMITS FOR NUCLEAR POWER PLANTS
93-04	ROD CONTROL SYSTEM FAILURE AND WITHDRAWAL OF ROD CONTROL CLUSTER ASSEMBLIES, 10 CFR 50.54(f)	06/21/93	ALL HOLDERS OF OLs OR CPs FOR (W)-DESIGNED NPRs EXCEPT HADDAM NECK ALL HOLDERS OF OLs OR CPs FOR (CE)-DESIGNED AND (B&W)-DESIGN NPRs AND HADDAM NECK
93-03	VERIFICATION OF PLANT RECORDS	NOT YET ISSUED	ALL HOLDERS OF OLs OR CPs FOR NPRs
93-02	NRC PUBLIC WORKSHOP ON COMMERCIAL GRADE PROCUREMENT AND DEDICATION	03/23/93	ALL HOLDERS OF OLs OR CPs FOR NPRs AND ALL RECIPIENTS OF NUREG-0040, "LICENSEE CONTRACTOR AND VENDOR INSPECTION STATUS REPORT" (WHITE BOOK)
93-01	EMERGENCY RESPONSE DATA SYSTEM TEST PROGRAM	03/03/93	ALL HOLDERS OF OLs OR CPs FOR NPRs, EXCEPT FOR BIG ROCK POINT AND FACILITIES PERMANENTLY OR INDEFINITELY SHUT DOWN
92-09	LIMITED PARTICIPATION BY NRC IN THE IAEA INTERNATIONAL NUCLEAR EVENT SCALE	12/31/92	ALL HOLDERS OF OLs OR CPs FOR NPRs
92-08	THERMO-LAG 330-1 FIRE BARRIERS	12/17/92	ALL HOLDERS OF OLs OR CPs FOR NPRs

OL = OPERATING LICENSE
 CP = CONSTRUCTION PERMIT

ENCLOSURE 2 to TXX-94034

NUREG 1431 - TECHNICAL SPECIFICATIONS FOR WESTINGHOUSE PLANTS
SEPTEMBER 1992

PAGES 3.5-1 through 3.5-3 and 3.5-6

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.1 Accumulators

LCO 3.5.1 [Four] ECCS accumulators shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODE 3 with pressurizer pressure > [1000] psig.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One accumulator inoperable due to boron concentration not within limits.	A.1 Restore boron concentration to within limits.	72 hours
B. One accumulator inoperable for reasons other than Condition A.	B.1 Restore accumulator to OPERABLE status.	1 hour
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. <u>AND</u> C.2 Reduce pressurizer pressure to \leq [1000] psig.	6 hours 12 hours
D. Two or more accumulators inoperable.	D.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.5.1.1 Verify each accumulator isolation valve is fully open.	12 hours
SR 3.5.1.2 Verify borated water volume in each accumulator is \geq [7853 gallons ()% and \leq 8171 gallons ()%].	12 hours
SR 3.5.1.3 Verify nitrogen cover pressure in each accumulator is \geq [385] psig and \leq [481] psig.	12 hours
SR 3.5.1.4 Verify boron concentration in each accumulator is \geq [1900] ppm and \leq [2100] ppm.	31 days <u>AND</u> -----NOTE----- Only required to be performed for affected accumulators ----- Once within 6 hours after each solution volume increase of \geq [[] gallons, ()% of indicated level] that is not the result of addition from the refueling water storage tank

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.5.1.5 Verify power is removed from each accumulator isolation valve operator when pressurizer pressure is \geq [2000] psig.	31 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.5.2.7 Verify, for each ECCS throttle valve listed below, each position stop is in the correct position.</p> <p> <u>Valve Number</u></p> <p> []</p> <p> []</p> <p> []</p>	<p>[18] months</p>
<p>SR 3.5.2.8 Verify, by visual inspection, each ECCS train containment sump suction inlet is not restricted by debris and the suction inlet trash racks and screens show no evidence of structural distress or abnormal corrosion.</p>	<p>[18] months</p>