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

March 8, 1993

MEMORANDUM FOR: Karen M. VanDuser
Document Management Branch
Division of Information Services
Office of Information Resources Management

FROM: Gail H. Marcus, Chief
Generic Communications Branch
Division of Operating Reactor Support

SUBJECT: ASSOCIATED DOCUMENTS FOR PROPOSED GENERIC LETTER ON REDUCED TESTING REQUIREMENTS FOR OPERATING REACTORS

The Technical Specifications Branch has prepared a draft generic letter regarding reduced testing requirements for operating reactors. The Committee to Review Generic Requirements has reviewed and concurred in this draft generic letter. The Generic Communications Branch is preparing to publish the draft generic letter in the Federal Register for public comment. This memorandum provides a compilation of the documents relevant to the draft generic letter that should be made available to the public. By copy of this memorandum, we are providing the enclosed documents to the Public Document Rooms. The enclosures are (1) the draft generic letter as approved by the CRGR, (2) a summary of NRR staff responses to CRGR suggestions regarding the draft generic letter, and (3) the CRGR Review Package.

NUREG--1366, "Improvements to Technical Specifications Surveillance Requirements," which is also pertinent to the proposed generic letter, is available in the Public Document Rooms under accession number 9301220193.

We request that you provide us with the Nuclear Documents System accession number for this memorandum so that we can include the accession number in the Federal Register notice. The accession number may be provided by telephone or E-Mail.

Gail H Marcus

Gail H. Marcus, Chief
Generic Communications Branch
Division of Operating Reactor Support
Office of Nuclear Reactor Regulation

Enclosures: As stated

CONTACT: Joseph L. Birmingham, NRR
(301) 504-2829

add NRR/OGCB
DF01
1/1

Enclosure 1

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

DRAFT

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

SUBJECT: LINE-ITEM TECHNICAL SPECIFICATION IMPROVEMENTS TO REDUCE SURVEILLANCE REQUIREMENTS FOR TESTING DURING POWER OPERATION (Generic Letter 93-)

The staff of the U.S. Nuclear Regulatory Commission (NRC) has completed a comprehensive examination of technical specification (TS) surveillance requirements that require testing during power operation. This effort is a part of the NRC Technical Specification 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, DC 20555 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 at power operating conditions. However, only a small fraction of the TS surveillance intervals was considered to warrant 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.

Licensees and applicants are encouraged to propose TS changes that are consistent with the enclosed guidance. The NRC project managers will review requests for license amendments to verify that they conform to this guidance. Please contact the project manager or the contact indicated below if you have questions on this matter.

Any response to the suggestion that licensees or applicants propose these TS changes is voluntary. Therefore, any action taken in response to the guidance provided in this generic letter is not a backfit under Section 50.109 of Title 10 to 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 be helpful to the NRC in evaluating the cost of complying with the suggestion to propose TS changes addressed by this generic letter:

1. The licensee staff time and costs to prepare the amendment request.

2. An estimate of the long-term costs that would be incurred or saved in the future as a result of implementing this TS change.

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

This request is covered by Office of Management and Budget Clearance Number 3150-0011, which expires June 30, 1994. The estimated average number of burden hours is 40 person hours per licensee response, including those needed to assess the new recommendations, search data sources, gather and analyze the data, and prepare the required letters. Send comments regarding 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

Enclosure:
As stated

GUIDANCE FOR IMPLEMENTING LINE-ITEM TECHNICAL SPECIFICATION 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 an NRC study that included a comprehensive examination of surveillance requirements and is reported in NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements."

Each of the applicable NUREG recommendations is addressed herein with examples of TS changes based upon standard technical specification (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 TS sections 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. The staff is providing the wording for a few of the recommendations from TS changes that have been approved for a specific plant. In this case, 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 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 eliminating this requirement below 60 ppm. (5) Method is plant-specific.

(4.1, Cont.)

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 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] x 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] x 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.

<u>* 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].</u>

(Footnote added to be consistent with recommendation.)

<u>4.2 Control Rod Movement Test</u>
<u>4.2.1 Pressurized Water Reactors</u>

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 <u>92</u> days.

(Replaced "31" with "92" days.)

<u>4.2.2 Boiling Water Reactors</u>

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. <u>Within</u> 24 hours when any control rod is immovable as a result of excessive friction or mechanical interference.

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

<u>4.3 Standby Liquid Control System BWR</u>

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] 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. <u>(Unused)</u>

(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. <u>At least once per 92 days by:</u>

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

(TS 4.1.5, Cont.)

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] 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.

(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, 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] 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 that is 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] 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.)

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.")

(TS 4.1.3.1.1, Cont.)

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 based upon 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), of 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 Specification, Revision 1, per letter OG-158, L. D. Butterfield (WOG - CECO) to Harold R. Denton (NRC), of September 3, 1985.

Letter from A. C. Thadani (NRC) to T. A. Pickens (BWROG - NSPC), of 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 (BWOG - GPU), of December 5, 1988, Subject: NRC Evaluation of BWOG 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

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
2. Linear Power Level - High	S	D(2,4)M(3,4),	Q	1, 2

(TS Table 4.3-1, Cont.)

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
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

FUNCTIONAL UNIT	SLAVE RELAY TEST
[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:

(5.3, Cont.)

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 4.3-1 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" days 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

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
15. CEAC 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] 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

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME IN SECONDS
(Identify item)	NA

(Replaced specified response time with "NA" for those Initiating Signal and Function entries where 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

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
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:

(5.13, Cont.)

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

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

(Table 4.3-2, cont.)

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
7. CONTAINMENT PURGE VALVES ISOLATION				
e. Containment Radiation - High Gaseous Monitor	S	R	Q	1, 2, 3, 4
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] TS Table 4.3-3:

TABLE 4.3-3
RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
(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.

<u>5.15 Radioactive Gas Effluent Monitor Calibration Standard (PWR, BWR)</u>

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 Reactor 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 Valves (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 of 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 noncondensible 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" 92 days.)

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.)

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

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. <u>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</u>.

(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.)

<u>7.2 Verification That ECCS Lines Are Full of Water (Contain No Air) (PWR)</u>

A TS change was not recommended for this item.

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

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.

<u>7.5 Visual Inspection of the Containment Sump (PWR)</u>

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 suctions during LOCA conditions. This visual inspection shall be performed:

   1. For all accessible areas of the containment prior to establishing CONTAINMENT INTEGRITY, and

   2. <u>At least once daily</u> of the areas affected within containment <u>by containment entry and during the final entry</u> 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.)

<u>7.6 Verification of Boron Concentration in the Boron Injection Tank (Westinghouse PWR)</u>

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 <u>by measuring the boron concentration in the boric acid storage tank</u> once per 7 days, and

(TS 4.5.4.1, Cont.)

(Added clarifica... 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.

(Changed the surveillance interval from "5" to "10" years.)

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 <u>each refueling interval</u> by:

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

1) (No change.)

2) (No change.)

3) Testing <u>all</u> 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 such that all doors are tested at least once during four test intervals.)

<u>8.4 Testing Suppression Chamber to Drywell Vacuum Breakers (BWR)</u>

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] 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 <u>12</u> 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" hours. No change to items 2 and 3.)

8.5 Hydrogen Recombiner (PWR)

Recommendation: Change the surveillance test interval for the hydrogen recombiner 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 recombiner system shall be demonstrated OPERABLE:

a. (No change)

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] TS 4.6.7.1:

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

a. (No change.)

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

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:

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.)

(TS 4.6.7.1, Cont.)

(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

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.

(9.3, Cont.)

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, non-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 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 <u>an inoperable support system or</u> 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 <u>8 hours</u>, <u>unless testing of an independently testable component has demonstrated the absence of any potential common mode failure for the remaining diesel generator.</u>

(TS 3.8.1.1, ACTIONS, Cont.)

(Added the noted conditions under which testing of an EDG is not required and replaced "24 hours" with "8 hours." 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 <u>accordance with the manufacturer's recommendations</u>, 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 <u>4.8.1.1.2.a.5)</u>;*....

(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 <u>4.8.1.1.2.a.5)</u> 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 <u>2 hours</u> or until operating temperature has stabilized.

(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 (EDG, system, or subsystem) when an alternate train, system, or subsystem (other than an EDG) 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 EXCEPTIONS

Suspending 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 that the limits of Specification 3.1.1.1.

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

13 RADIOACTIVE EFFLUENTS

Waste 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."

3.11 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 for performing surveillance "at least once per 24 hours 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).

- END -

SUMMARY OF NRR STAFF RESPONSE
TO CRGR SUGGESTIONS

1. A basis for each specific change should be included. For example, in the discussion of pressurizer heaters beginning on page 41 of the NUREG report, the two brief paragraphs preceding the conclusion did not appear sufficient.

   • Section 1.3 of the NUREG was modified to clarify the general basis for recommendations and their applicability to specific changes. Qualitatively, the specific bases for each change is included in each respective section of the NUREG.

2. It would be desirable to attach to each conclusion a finding of no (significant) increase in risk. For example, in the sample analysis on page 6 of the NUREG report it was not obvious that there has been a finding of no undue risk.

   • The general conclusions that the recommendations pose no undue risk, retain adequate safety and provide significant benefits has been stated in the Introduction in Section 1.2.

3. It would be desirable in the executive summary of the NUREG report to discuss the Commission Policy Statement, criteria for technical specification improvement and previous studies related to this action.

   • An addition to the Executive Summary has been made to address the Commission Policy Statement on Technical Specification Improvements.

4. It would be desirable to include a paragraph or two in the generic letter and the NUREG report indicating that, from among the many requirements that involve testing at power, few were considered to warrant relaxation.

   • A statement has been added to the generic letter and the NUREG to address this.

5. It would be desirable to further discuss the PRA work done in this area (related to the standard technical specifications).

   • A statement was added to the discussion of the STS in the Introduction that notes that changes to surveillance intervals were evaluated by a risk-based approach, discussed in an SAIC report that has been added referenced and added to the Bibliography.

6. It would be desirable to discuss the benefits of rotating or running equipment to maintain lubricant distribution.

   • The focus of surveillance requirements as defined by 10 CFR 50.36 is that limiting conditions for operation will be met. Rotating or running equipment to maintain lubricant distribution may be an appropriate part of a preventive maintenance program; however, the staff has not extended the scope of TS surveillance requirements by this guidance to include such considerations. Furthermore, the scope of the changes addressed in this guidance does not materially impact such considerations.

7. It should be stated early on that sometimes increasing a surveillance interval would reduce risk.

   - This point has been made by an addition to Section 1.2.

8. The name "qualitative risk assessment" was considered confusing.

   - While the staff's intent was to clarify that risk was evaluated using a qualitative assessment, in contrast to a quantitative assessment, the phrase has been replaced throughout the NUREG with "qualitative safety assessment," which we believe is adequately addressed in Section 1.3 of the report.

9. The CRGR review package appeared to indicate that reducing wear was a primary or sole criterion (for) reducing surveillance requirements. This should be examined.

   - Reducing wear is one of the four criteria mentioned in the Executive Summary, Introduction, and discussed throughout the document. The four criteria provided in the NUREG are the basis for the recommended changes in surveillance requirements.

10. When the licensees address the specific changes, they should review their own experience. It may not be appropriate to take maximum advantage of the proposed changes.

    - A section was added to the enclosure to the generic letter to address compatibility with operating experience and licensees must confirm that all proposed changes are compatible with operating experience.

11. The staff indicated that it would redraft certain sections to more clearly define future NRC actions. This applied in cases where a licensee submittal, to request a relaxation, would depend upon the completion of some further NRC study or action. The CRGR noted that it may be desirable to remove items which are not yet ready for action from the enclosure to the generic letter.

    - The enclosure to the generic letter was modified to specifically note that a technical specification change was not recommended for those topics of the NUREG that were dependent upon further action.

12. The generic letter should make a clear distinction between (1) what the staff would recommend in the NUREG report, and (2) what would be authorized by the generic letter.

- The Introduction in the enclosure to the generic letter and the change noted in item 11 together clarify the scope of TS changes addressed by the generic letter.

13. The conclusion on revised page 18 appeared to go too far in that it implied that San Onofre 1 containment spray system would have performed its intended function in total. However, the issue under discussion was restricted to clogging and the adequacy of the spray pattern.

    - The referenced section was changed to clarify the conclusion.

14. The staff indicated that it would address several additional editorial comments with the CRGR staff. This included items such as the need to update certain sections of the NUREG report to reflect the current status of NRC programs (e.g., diesel generator reliability testing).

    - Changes were made assuring that the discussion of NRC programs is current.

CRGR REVIEW PACKAGE

Proposed Action: Issue NUREG-1366 and a generic letter to provide licensees and applicants guidance for implementing line-item technical specification (TS) improvements to reduce surveillance requirements that must be performed during power operation.

CATEGORY 2

RESPONSE TO REQUIREMENTS FOR CONTENT OF PACKAGE SUBMITTED FOR CRGR REVIEW

(i) The proposed generic requirements or staff position as it is proposed to be sent out to licensees.

Enclosure A is a draft of a proposed generic letter that would provide guidance on line-item TS improvements that are based upon a study of the benefit to safety of reduced testing during power operation. The findings and recommendations of this study are provided in the draft of NUREG-1366, "Improvements in Technical Specifications Surveillance Requirements," that is provided in Enclosure B.

(ii) Draft staff papers or other underlying staff documents supporting the requirements or staff position.

- NUREG-1366 is a result of a study that was undertaken in response to the recommendations made in NUREG-1024, "Technical Specifications-Enhancing the Safety Impact," November 1983. Three specific recommendations of NUREG-1024 were as follows:

Recommendation 1

The testing frequencies in the technical specifications should be reviewed to assure that they are adequately supported on a technical basis and that risk to the public is minimized.

Recommendation 2

The required surveillance tests should be reviewed to assure that important safety equipment is not degraded as a result of testing and that such tests are conducted in a safe manner and in the appropriate plant operational mode to ensure that risk to the public is minimized.

Recommendation 4

The surveillance test requirements should be reviewed to assure that they do not consume plant personnel time unnecessarily or result in undue radiation exposure to plant personnel without a commensurate safety benefit in terms of minimizing public risk.

The findings and recommendations of NUREG-1366 are responsive to the above recommendations.

- The Commission Policy Statement on Technical Specification Improvement, 52 FR 3788, acknowledges the recommendations of the nuclear industry and NRC staff' the studies of TS problems, and the role of short-term (line-item) improvements in the overall program to implement improvements in TS. The proposed generic letter is responsive to the Policy Statement by providing licensees guidance on line-item TS improvements that are based upon the findings and recommendations included in NUREG-1366.

(iii) Each proposed requirement or staff position shall contain the sponsoring office's position as to whether the proposal would increase requirements or staff positions, or would relax or reduce existing requirements or staff positions.

The proposed changes in TS surveillance requirements are summarized in Table 14.1 of NUREG-1366. In all but two instances the recommendations result in a relaxation of existing requirements. The exceptions are two recommendations: one related to an increased frequency to verify that the power-operated relief valve (PORV) isolation (block) valve is open when the PORV is used for overpressure protection and another related to positive indication that the low-temperature overpressure protection (LTOP) system is armed and operable. However, Generic Letter 90-06 set forth actions for the resolution of Generic Issues 70 and 94 on PORV and block valve operability and on additional requirements for LTOP. Therefore, the staff has concluded that since any action on the NUREG-1366 recommendations would be in addition to the requirements of Generic Letter 90-06, these recommendations should be given further consideration based on licensees' responses to Generic Letter 90-06 and the necessity to backfit additional requirements for these systems.

In all, recommendations were made to reduce testing by relaxing surveillance requirements in 27 areas of pressurized-water reactor (PWR) TS and in 15 areas of boiling-water reactor (BWR) TS. The majority of the changes involve an extension of surveillance intervals. A breakdown of these relaxations by the change in surveillance interval and the number of TS areas affected, without regard to reactor type, is as follows:

Number of TS Areas	Change in Surveillance Interval
5	From 24 hours to 7 days
1	From 7 days to quarterly
7	From monthly to quarterly
6	From quarterly to refueling
1	From 6 months to refueling
2	From 9 months to refueling
1	From 5 years to 10 years

Also, relaxations were made to reduce conditions or acceptance criteria for surveillance requirements and to reduce the intervals for surveillances that are imposed by action requirements in 11 different areas of the TS.

From the standpoint of the current standard technical specifications (STS), these changes constitute a change in existing requirements and staff positions. However, these changes are consistent with the new STS that were issued in draft form for NRC and industry comment.

(iv) The proposed method of implementation along with the concurrence (and any comments) of the Office of General Counsel (OGC).

The proposed generic letter provides guidance for the implementation of TS changes that are based upon the recommendations in NUREG-1366. Any action by licensees to propose TS changes in response to this guidance would be voluntary. OGC has reviewed the proposed generic letter and had no comment or objections.

(v) Regulatory analysis generally conforming to the directives and guidance of NUREG/BR-0058 and NUREG/BR-3568.

A formal regulatory analysis is not applicable because any action taken by licensees to propose TS changes in response to the guidance provided is voluntary.

(vi) Identification of the category of reactor plants to which the generic requirement or staff position is to apply.

This guidance on TS changes is applicable to PWRs and BWRs as identified in the proposed generic letter and the recommendations of NUREG-1366.

(vii) For each category of reactor plant, the evaluation should be prioritized and scheduled in light of other ongoing regulatory activities. The evaluation is to consider information available concerning any of the following factors as may be deemed appropriate and any other information relevant and material to the proposed action.

(a) Statement of the specific objectives that the proposed action is designed to achieve.

The overall objective of the effort is to improve safety by reducing the amount of testing that must be performed during power operation. This objective is met by implementing line-item improvements in TS surveillance requirements. This effort supplements the TS improvement program efforts. Under this task, the staff conducted a comprehensive examination of TS requirements in order to identify those that could be relaxed to reduce testing during power operation. The results of that effort are reported in NUREG-1366.

The staff used four criteria to screen surveillance requirements. The criteria were:

(1) The surveillance could lead to a plant transient.

(2) The surveillance results in unnecessary wear to equipment.

(3) The surveillance results in radiation exposure to plant personnel which is not justified by the safety significance of the surveillance.

(4) The surveillance places an unnecessary burden on plant personnel because the time required is not justified by the safety significance of the surveillance.

In addition to applying these four criteria, the staff performed a qualitative risk assessment on the Westinghouse STS and the Hatch Unit 2 TS.

The staff visited five reactor sites in 1988 in order to discuss surveillance requirements with plant staff who plan, manage, and perform these surveillances. The visits were productive and many of the recommendations that were received were incorporated into the report.

In addition, the staff reviewed the dockets of several licensees seeking approved plant-specific TS changes in surveillance requirements that were related to the objectives of the study and that had generic applicability.

Operational data from licensee event reports (LERs), the nuclear plant reliability data system (NPRDS), and other sources were used to assess the impact of surveillance requirements on plant operation and safety.

The nuclear plant aging research program of the Office of Nuclear Regulatory Research (RES) proved to be a valuable source of information on component reliability and types of degradation.

The implementation of the recommendations of this study should reduce reactor transients, radiation dose to personnel from testing, and wear on equipment, with a net benefit to safety.

(b) General description of the activity that would be required by licensees in order to complete the action.

Each licensee would submit a request for a license amendment to implement proposed TS changes based upon guidance provided in the draft generic letter. The NUREG recommendations have been incorporated in the new STS.

(c) Potential change in risk to the public from the accidental offsite release of radioactive material.

The overall effect of the changes in surveillance requirements is a net benefit to safety with a reduction in the risk to the public from accidental offsite release of radioactive material. This is primarily a result of fewer plant transients that would be caused by tests conducted at a reduced frequency during power operation.

(d) Potential impact on radiological exposure of facility employees and other onsite workers.

Reducing the frequency of tests that must be conducted during power operation results in a reduction in radiological exposure to employees performing those tests. This was one of the explicit objectives for reduced testing during power operation and also one of the criteria used in NUREG-1366 for the evaluation of surveillance requirements.

(e) Installation and continuing costs associated with the action, including the cost of facility downtime or construction delay.

The reduction in test frequency produces a direct cost savings associated with the performance of surveillance requirements and should more than compensate for any effect it may have on the cost of facility downtime for surveillance that would be performed during an outage. An indirect cost benefit is the potential for reduced maintenance costs as a result of less wear caused by testing that is performed at a reduced frequency.

(f) The potential safety impact on the changes in plant or operational complexity, including the relationship to proposed and existing regulatory requirements and staff positions.

There would be a reduction in operational complexity as a consequence of reduced testing during power operation, as well as some reduction in wear caused by testing. Overall, the reduced testing would have a positive impact on safety. The changes will be included in the new STS but otherwise do not have an impact on proposed or existing regulatory requirements and staff positions.

(g) The estimated resource burden on NRC associated with the proposed action and the availability of such resources.

The burden on NRC resources should be minimal. The project manager will be able to process requests for license amendments without input from technical specialists. Enclosure C is a model safety evaluation report (SER) that will be distributed to all project managers with a copy of the generic letter. The model SER will reduce the burden on the project manager for processing license amendments to incorporate these line-item TS improvements. The staff resource burden should be much less than that currently required for plant-specific reviews of TS changes for submittals that are not based upon generic guidance.

It is not possible to determine the number of licensees that will request TS changes or the resource burden for each review because of the variation in existing plant TS and the types of TS changes that are available for different types of plants.

(h) The potential impact of differences in facility type, design, or age on the relevancy and practicality of the proposed action.

Facilities licensed before 1974 will generally have TS with custom formats. Although the guidance for this change follows the STS format, it would be adaptable to custom-format TS with a minimum of effort. Differences in facility type and design would have minimal effect on the proposed action because the TS changes are classified by the types of plants to which they apply.

(i) Whether the proposed action is interim or final, and if interim, the justification for imposing the proposed action on an interim basis.

This action is considered final in that the staff anticipates no further changes to those TS for which a reduction in surveillance requirements is proposed.

(viii) For each evaluation conducted pursuant to 10 CFR 50.109, the proposing office director's determination, together with the rationale for the determination based on the considerations of paragraphs (i) through (vii) above, that

(a) There is a substantial increase in the overall protection of public health and safety or the common defense and security to be derived from the proposal; and

(b) The direct and indirect costs of implementation, for the facilities affected, are justified in view of this increased protection.

Because this initiative is voluntary, backfit considerations are not applicable.

(ix) For each evaluation conducted for proposed relaxations or decreases in current requirements or staff positions, the proposing office director's determination, together with the rationale for the determination based on the considerations of paragraphs (i) through (vii) above, that

(a) The public health and safety and the common defense and security would be adequately protected if the proposed reduction in requirements or positions were implemented, and

(b) The cost savings attributed to the action would be substantial enough to justify taking the action.

The changes in the time intervals for performing surveillances that would be allowed should improve safety. The cost benefits of an increase in the surveillance intervals would be the reduced manpower cost for performing those surveillances on a less frequent schedule. Additional savings attributed to this guidance are a reduction in costs for preparing proposed license amendments by licensees to implement many of these line-item improvements on an individual basis and a reduction in costs for staff reviews of those individual proposals.