ATTACHMENT 3

Mark-ups of Affected Technical Specifications Pages

Grand Gulf Nuclear Station

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.3.1.1.11	Perform CHANNEL FUNCTIONAL TEST.	18 months
SR 3.3.1.1.12	----------NOTES---------- 1. Neutron detectors are excluded. 2. For IRMs, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. ---------- Perform CHANNEL CALIBRATION.	18 months
SR 3.3.1.1.13	Perform LOGIC SYSTEM FUNCTIONAL TEST.	18 months
SR 3.3.1.1.14	Verify Turbine Stop Valve Closure, Trip Oil Pressure—Low and Turbine Control Valve Fast Closure Trip Oil Pressure—Low Functions are not bypassed when THERMAL POWER is ≥ 40% RTP.	18 months
SR 3.3.1.1.15	----------NOTES---------- 1. Neutron detectors are excluded. ~~2.~~ 3. For Function 6, "n" equals 4 channels for the purpose of determining the STAGGERED TEST BASIS Frequency. ---------- Verify the RPS RESPONSE TIME is within limits.	18 months on a STAGGERED TEST BASIS

2. For Functions 3, 4, and 5 in Table 3.3.1.1-1, the channel sensors may be excluded.

SURVEILLANCE REQUIREMENTS

----------NOTES----------

1. Refer to Table 3.3.6.1-1 to determine which SRs apply for each Function.

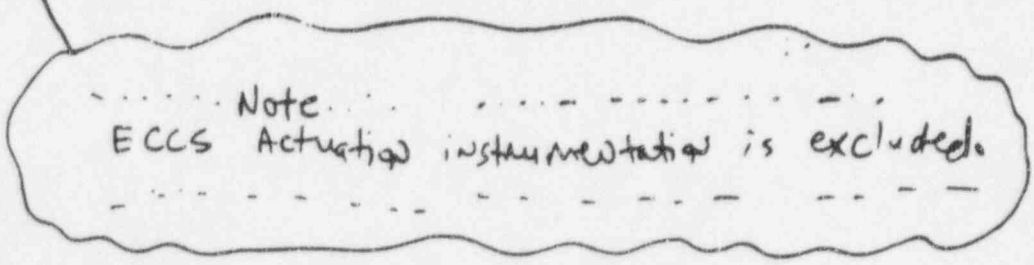
2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours, provided the associated Function maintains isolation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.6.1.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.6.1.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.6.1.3	Calibrate the trip unit.	92 days
SR 3.3.6.1.4	Perform CHANNEL CALIBRATION.	92 days
SR 3.3.6.1.5	Perform CHANNEL CALIBRATION.	12 months
SR 3.3.6.1.6	Perform CHANNEL CALIBRATION.	18 months
SR 3.3.6.1.7	Perform LOGIC SYSTEM FUNCTIONAL TEST.	18 months
SR 3.3.6.1.8	Verify the ISOLATION SYSTEM RESPONSE TIME for the Main Steam Isolation Valves is within limits.	18 months on a STAGGERED TEST BASIS

Note
Channel sensors may be excluded.

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.5.1.5	----------NOTE---------- Vessel injection/spray may be excluded. ---------- Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.	18 months
SR 3.5.1.6	----------NOTE---------- Valve actuation may be excluded. ---------- Verify the ADS actuates on an actual or simulated automatic initiation signal.	18 months
SR 3.5.1.7	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ---------- Verify each ADS valve opens when manually actuated.	18 months on a STAGGERED TEST BASIS for each valve solenoid
SR 3.5.1.8	Verify the ECCS RESPONSE TIME for the HPCS System is within limits.	18 months



SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.2.5	Verify each required ECCS pump develops the specified flow rate with the specified total developed head. SYSTEM / FLOW RATE / TOTAL DEVELOPED HEAD LPCS / ≥ 7115 gpm / ≥ 290 psid LPCI / ≥ 7450 gpm / ≥ 125 psid HPCS / ≥ 7115 gpm / ≥ 445 psid	In accordance with the Inservice Testing Program
SR 3.5.2.6	----------NOTE---------- Vessel injection/spray may be excluded. ---------- Verify each required ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal.	18 months
SR 3.5.2.7	Verify the ECCS RESPONSE TIME for the required HPCS System is within limits.	18 months

ATTACHMENT 4

Mark-ups of Affected
Technical Specifications Bases Pages

Grand Gulf Nuclear Station

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.1.1.15

This SR ensures that the individual channel response times are less than or equal to the maximum values assumed in the accident analysis. The RPS RESPONSE TIME acceptance criteria are included in the applicable plant procedures.

As noted, neutron detectors are excluded from RPS RESPONSE TIME testing because the principles of detector operation virtually ensure an instantaneous response time. 3

RPS RESPONSE TIME tests are conducted on an 18 month STAGGERED TEST BASIS. Note 2 requires STAGGERED TEST BASIS Frequency to be determined based on 4 channels per trip system, in lieu of the 8 channels specified in Table 3.3.1.1-1 for the MSIV Closure Function. This Frequency is based on the logic interrelationships of the various channels required to produce an RPS scram signal. Therefore, staggered testing results in response time verification of these devices every 18 months. This Frequency is consistent with the typical industry refueling cycle and is based upon plant operating experience, which shows that random failures of instrumentation components causing serious time degradation, but not channel failure, are infrequent.

ENCLOSURE 1

REFERENCES

1. UFSAR, Figure 7.2-1.

2. UFSAR, Section 5.2.2.

3. UFSAR, Section 6.3.3.

4. UFSAR, Chapter 15.

5. UFSAR, Section 15.4.1.

6. NEDO-23842, "Continuous Control Rod Withdrawal in the Startup Range," April 18 1978.

7. UFSAR, Section 15.4.9.

(continued)

Note 2 allows the channel sensors of Functions 3, 4, and 5 to be excluded from specific RPS RESPONSE TIME testing. This allowance to not perform specific response time testing of the sensors is applicable when the alternate testing requirements and restrictions of Reference 10 are performed. As stated in Reference 10, analysis has demonstrated that other Technical Specification testing requirements (CHANNEL CALIBRATIONS, CHANNEL CHECKS, CHANNEL FUNCTIONAL TESTS, and LOGIC SYSTEM FUNCTIONAL TESTS) and actions taken in response to NRC Bulletin 90-01 Supplement 1 are sufficient to identify failure modes or degradation in instrument response times and assure operation of the analyzed instrument loops within acceptable limits. Reference 10 also identifies that there are no known channel sensor failure modes identified that can be detected by response time testing that cannot also be detected by other Technical Specification required surveillances. Therefore, when the requirements, including sensor types, of Reference 10 are complied with, adequate assurance of the response time of the sensors is provided. This assurance of the response time of the sensors when combined with the response time testing of the remainder of the channel ensures that the individual channel response times are less than or equal to the maximum values assumed in the accident analysis. If the alternate testing requirements of Reference 10 are not complied with, then the entire channel will be response time tested including the sensors.

BASES

REFERENCES (continued)

8. Letter, P. Check (NRC) to G. Lainas (NRC), "BWR Scram Discharge System Safety Evaluation," December 1, 1980, as attached to NRC Generic Letter dated December 9, 1980.

9. NEDO-30851-P-A, "Technical Specification Improvement Analyses for BWR Reactor Protection System," March 1988.

10. NEDO-32291-A, "System Analyses for Elimination of Selected Response Time Testing Requirements," October 1995

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.6.1.7

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required isolation logic for a specific channel. The system functional testing performed on isolation valves in LCO 3.6.1.3 and LCO 3.6.5.3 overlaps this Surveillance to provide complete testing of the assumed safety function. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency.

SR 3.3.6.1.8

This SR ensures that the individual channel response times are less than or equal to the maximum values assumed in the accident analysis. Testing is performed only on channels where the assumed response time does not correspond to the diesel generator (DG) start time. For channels assumed to respond within the DG start time, sufficient margin exists in the 10 second start time when compared to the typical channel response time (milliseconds) so as to assure adequate response without a specific measurement test. Testing of the closure times of the MSIVs is not included in this Surveillance since the closure time of the MSIVs is tested by SR 3.6.1.3.6. ISOLATION SYSTEM RESPONSE TIME acceptance criteria for this instrumentation is included in the applicable plant procedures.

ISOLATION SYSTEM RESPONSE TIME tests for this instrumentation are conducted on an 18 month STAGGERED TEST BASIS. This test Frequency is consistent with the typical industry refueling cycle and is based upon plant operating experience that shows that random failures of instrumentation components causing serious response time degradation, but not channel failure, are infrequent.

Enclosure 2

REFERENCES

1. UFSAR, Chapter 6.
2. UFSAR, Chapter 15.

(continued)

As Noted, the channel sensor may be excluded from response time testing. This allowance to not perform specific response time testing of the sensors is applicable when the alternate testing requirements and restrictions of Reference 7 are performed. As stated in Reference 7, analysis has demonstrated that other Technical Specification testing requirements (CHANNEL CALIBRATIONS, CHANNEL CHECKS, CHANNEL FUNCTIONAL TESTS, and LOGIC SYSTEM FUNCTIONAL TESTS) and actions taken in response to NRC Bulletin 90-01 Supplement 1 are sufficient to identify failure modes or degradation in instrument response times and assure operation of the analyzed instrument loops within acceptable limits. Reference 7 also identifies that there are no known channel sensor failure modes identified that can be detected by response time testing that cannot also be detected by other Technical Specification required surveillances. Therefore, when the requirements, including sensor types, of Reference 7 are complied with, adequate assurance of the response time of the sensors is provided. This assurance of the response time of the sensors when combined with the response time testing of the remainder of the channel ensures that the individual channel response times are less than or equal to the maximum values assumed in the accident analysis. If the alternate testing requirements of Reference 7 are not complied with then the entire channel will be response time tested including the sensors.

BASES

REFERENCES (continued)

3. NEDO-31466, "Technical Specification Screening Criteria Application and Risk Assessment," November 1987.

4. UFSAR, Section 9.3.5.

5. NEDC-31677-P-A, "Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation," June 1989.

6. NEDC-30851-P-A, Supplement 2, "Technical Specifications Improvement Analysis for BWR Isolation Instrumentation Common to RPS and ECCS Instrumentation," March 1989.

7. NEDO-32291-A, "System Analyses for Elimination of Selected Response Time Testing Requirements," October 1995

BASES

SURVEILLANCE REQUIREMENTS

SR 3.5.1.7 (continued)

alternately tested. The Frequency of the required relief-mode actuator testing was developed based on the tests required by the ASME Boiler and Pressure Vessel Code, Section XI as implemented by the Inservice Testing Program of Specification 5.5.6. The testing Frequency required by the Inservice Testing Program is based on operating experience and valve performance. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.5.1.8

This SR ensures that the HPCS System response time is less than or equal to the maximum value assumed in the accident analysis. Specific testing of the ECCS actuation instrumentation inputs into the HPCS System ECCS SYSTEM RESPONSE TIME is not required by this SR. Specific response time testing of this instrumentation is not required since these actuation channels are only assumed to respond within the diesel generator start time; therefore, sufficient margin exists in the diesel generator 10 second start time when compared to the typical channel response time (milliseconds) so as to assure adequate response without a specific measurement test (Ref. 16). The diesel generator starting and any sequence loading delays along with the Reactor Vessel Water Level - Low Low, Level 2 confirmation delay permissive must be added to the HPCS System equipment response times to obtain the HPCS System ECCS SYSTEM RESPONSE TIME. The acceptance criterion for the HPCS System ECCS SYSTEM RESPONSE TIME is $\leq$ 27 seconds.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.5.1.8 (continued)

HPCS System ECCS SYSTEM RESPONSE TIME tests are conducted every 18 months. This Frequency is consistent with the typical industry refueling cycle and is based on industry operating experience.

REFERENCES

1. UFSAR, Section 6.3.2.2.3.
2. UFSAR, Section 6.3.2.2.4.
3. UFSAR, Section 6.3.2.2.1.
4. UFSAR, Section 6.3.2.2.2.
5. UFSAR, Section 15.6.6.
6. UFSAR, Section 15.6.4.
7. UFSAR, Section 15.6.5.
8. 10 CFR 50, Appendix K.
9. UFSAR, Section 6.3.3.
10. 10 CFR 50.46.
11. UFSAR, Section 6.3.3.3.
12. Memorandum from R.L. Baer (NRC) to V. Stello, Jr. (NRC), "Recommended Interim Revisions to LCO's for ECCS Components," December 1, 1975.
13. UFSAR, Section 6.3.3.7.8.
14. UFSAR, Section 7.3.1.1.1.4.2.
15. GNRI-96/00229, Amendment 130 to the Operating License.
16. NEDO-32291-A, "System Analyses for Elimination of Selected Response Time Testing Requirements," October 1995

BASES

SURVEILLANCE REQUIREMENTS

SR 3.5.2.4 (continued)

initiation signal is allowed to be in a nonaccident position provided the valve will automatically reposition in the proper stroke time. This SR does not require any testing or valve manipulation; rather, it involves verification that those valves capable of potentially being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves. The 31 day Frequency is appropriate because the valves are operated under procedural control and the probability of their being mispositioned during this time period is low.

In MODES 4 and 5, the RHR System may operate in the shutdown cooling mode, or be aligned to allow alternate means to remove decay heat and sensible heat from the reactor. Therefore, RHR valves that are required for LPCI subsystem operation may be aligned for decay heat removal. This SR is modified by a Note that allows one LPCI subsystem of the RHR System to be considered OPERABLE for the ECCS function if all the required valves in the LPCI flow path can be manually realigned (remote or local) to allow injection into the RPV and the system is not otherwise inoperable. This will ensure adequate core cooling if an inadvertent vessel draindown should occur.

SR 3.5.2.7

This SR ensures that the HPCS System response time is less than or equal to the maximum value assumed in the accident analysis. Specific testing of the ECCS actuation instrumentation inputs into the HPCS System ECCS SYSTEM RESPONSE TIME is not required by this SR. Specific response time testing of this instrumentation is not required since these actuation channels are only assumed to respond within the diesel generator start time; therefore, sufficient margin exists in the diesel generator 10 second start time when compared to the typical channel response time (milliseconds) so as to assure adequate response without a specific measurement test. The diesel generator starting and any sequence loading delays along with the Reactor Vessel Water Level - Low Low, Level 2 confirmation delay permissive must be added to the HPCS System equipment response times to obtain the HPCS System ECCS SYSTEM

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.5.2.7 (continued)

RESPONSE TIME. The acceptance criterion for the HPCS System ECCS SYSTEM RESPONSE TIME is ≤ 27 seconds. HPCS System ECCS SYSTEM RESPONSE TIME tests are conducted every 18 months. This Frequency is consistent with the typical industry refueling cycle and is based on industry operating experience.

REFERENCES

1. UFSAR, Section 6.3.3.4.