Attachment 2

to

Letter from C. R. Steinhardt (WPSC) to

Document Control Desk (NRC)

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Affected TS Pages

Section 4.5

Section 4.7

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4.5 EMERGENCY CORE COOLING SYSTEM AND CONTAINMENT AIR COOLING SYSTEM TESTS

APPLICABILITY

Applies to testing of the Emergency Core Cooling System and the Containment Air Cooling System.

OBJECTIVE

To verify that the subject systems will respond promptly and perform their design functions, if required.

SPECIFICATION

a. System Tests

1. Safety Injection System

A. System tests shall be performed once per operating cycle or once every 18 months, whichever occurs first. With the Reactor Coolant System pressure $\leq$ 350 psig and temperature $\leq$ 350°F, a test safety injection signal will be applied to initiate operation of the system. The safety injection and residual heat removal pumps need not be operated for this test.

B. The test will be considered satisfactory if control board indication or visual observations indicate that all components have received the safety injection signal in the proper sequence and timing. That is, the appropriate pump motor breakers shall have opened and closed, and all valves shall have completed their travel.

2. Containment Vessel Internal Spray System

A. System tests shall be performed once every operating cycle or once every 18 months, whichever occurs first. The test shall be performed with the isolation valves in the supply lines at the containment blocked closed.

B. The spray nozzles shall be checked for proper functioning at least every 10 years.

C. The test will be considered satisfactory if control board indications or visual observations indicate all components have operated satisfactorily.

3. Containment Fancoil Units

Each fancoil unit shall be tested once every operating cycle or once every 18 months, whichever occurs first, to verify proper operation of the motor-operated service water outlet valves and the fancoil emergency discharge and associated backdraft dampers.

b. Component Tests

1. Pumps

A. The safety injection pumps, residual heat removal pumps, and containment spray pumps shall be started and operated quarterly during power operation and within 1 week after the plant is returned to power operation, if the test was not performed during plant shutdown.

B. Acceptable levels of performance are demonstrated by the pumps' ability to start and develop head within an acceptable range.

2. Valves

A. The Refueling Water Storage Tank and containment sump outlet valves shall be tested in performing the pump tests.

B. The accumulator check valves shall be checked for OPERABILITY during each major REFUELING outage. The accumulator block valves shall be checked to assure "valve open" requirements during each major REFUELING outage.

C. The boric acid tank isolation valves to the safety injection pumps shall be tested at intervals not to exceed quarterly during power operation.

D. Spray additive tank valves shall be tested during each major REFUELING outage.

E. Closing of the boric acid tank isolation valves and concurrent opening of Refueling Water Storage Tank valves upon receipt of simulated lo-lo boric acid tank level signal shall be tested at intervals not to exceed quarterly during power operation.

F. Residual Heat Removal System valve interlocks shall be tested once per operating cycle (not to exceed 18 months).

BASIS

System Tests (TS 4.5.a)

The Safety Injection System and the Containment Vessel Internal Spray System are principal plant safety systems that are normally in standby during reactor operation. Complete systems tests cannot be performed when the reactor is OPERATING because a safety injection signal causes containment isolation, and a Containment Vessel Internal Spray System test requires the system to be temporarily disabled. The method of assuring OPERABILITY of these systems is therefore to combine system tests to be performed during periodic shutdowns with more frequent component tests, which can be performed during reactor operation.

The systems tests demonstrate proper automatic operation of the Safety Injection and Containment Vessel Internal Spray Systems. A test signal is applied to initiate automatic action, resulting in verification that the components received the safety injection signal in the proper sequence. The test demonstrates the operation of the valves, pump circuit breakers, and automatic circuitry.[1]

Component Tests - Pumps (TS 4.5.b.1)

During reactor operation, the instrumentation which is depended upon to initiate safety injection and containment spray is checked daily and the initiating logic circuits are tested monthly (in accordance with TS 4.1). In addition, the active components (pumps and valves) are to be tested quarterly to check the operation of the starting circuits and to verify that the pumps are in satisfactory running order. The quarterly test interval is based on the judgment that more frequent testing would not significantly increase the reliability (i.e., the probability that the component would operate when required), yet more frequent testing would result in increased wear over a long period of time.

Component Tests - Valves (TS 4.5.b.2)

Closure of the boric acid tank isolation valves is tested with a simultaneous opening of the Refueling Water Storage Tank valves upon receipt of simulated lo-lo boric acid tank level signal. This test is performed to verify proper operation to prevent inadvertent spillage of Refueling Water Storage Tank water through the boric acid tank should the isolation valves fail to close.

Testing of the containment fancoil unit emergency discharge and backdraft dampers is performed to assure the integrity of the duct work post-LOCA.

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[1] USAR Section 6.2

Other systems that are also important to the emergency cooling function are the accumulators, the Component Cooling System, and the Service Water System. The accumulators are a passive safety feature. In accordance with TS 4.1, the water volume and pressure in the accumulators are checked each shift. The other systems mentioned operate when the reactor is in operation and by these means are continuously monitored for satisfactory performance.

4.7 MAIN STEAM ISOLATION VALVES

APPLICABILITY

Applies to periodic testing of the main steam isolation valves.

OBJECTIVE

To verify the ability of the main steam isolation valves to close upon signal.

SPECIFICATION

The main steam isolation valves shall be tested once per operating cycle (not to exceed 18 months). A closure time of 5 seconds or less shall be verified.

BASIS

The main steam isolation valves (MSIVs) serve to limit the cooldown rate of the Reactor Coolant System and the reactivity insertion that could result from a main steam break incident. Their ability to close upon signal should be verified at each major REFUELING outage. The USAR assumes a MSIV closure time of 10 seconds[1] for a steamline break accident scenario. However, a closure time of 5 seconds is selected for the TS requirements, since it is more consistent with expected response time for instrumentation as detailed in the steam line break[1] incident analysis.

[1] USAR Section 14.2.5

TABLE TS 4.1-3

MINIMUM FREQUENCIES FOR EQUIPMENT TESTS

EQUIPMENT TESTS[1]	TEST	FREQUENCY	MAXIMUM TIME BETWEEN TEST (DAYS)
1. Control Rods	Rod drop times of all full length rods	Each REFUELING outage	N.A.
	Partial movement of all rods not fully inserted in the core	Every 2 weeks when at or above HOT STANOBY	17
1a. Reactor Trip Breakers	Independent test[2] shunt and undervoltage trip attachments	Monthly	37
1b. Reactor Coolant Pump Breakers-Open-Reactor Trip	OPERABILITY	Each REFUELING outage	N.A.
1c. Manual Reactor Trip	Open trip reactor[3] trip and bypass breaker	Each REFUELING outage	N.A.
2. Deleted			
3. Deleted			
4. Containment Isolation Trip	OPERABILITY	Each REFUELING outage	N.A.
5. Refueling System Interlocks	OPERABILITY	Prior to fuel movement each REFUELING outage	N.A.
6. Deleted			

[1] Following maintenance on equipment that could affect the operation of the equipment, tests should be performed to verify OPERABILITY.

[2] Verify OPERABILITY of the bypass breaker undervoltage trip attachment prior to placing breaker into service.

[3] Using the Control Room push-buttons, independently test the reactor trip breakers shunt trip and undervoltage trip attachments. The test shall also verify the undervoltage trip attachment on the reactor trip bypass breakers.

TABLE TS 4.1-3

MINIMUM FREQUENCIES FOR EQUIPMENT TESTS

EQUIPMENT TESTS	TEST	FREQUENCY	MAXIMUM TIME BETWEEN TEST (DAYS)
7. Deleted			
8. RCS Leak Detection	OPERABILITY	Weekly	8
9. Diesel Fuel Supply	Fuel Inventory[4]	Weekly	8
10. Turbine Stop and Governor Valves	OPERABILITY	Annually	365
11. Fuel Assemblies	Visual Inspection	Each REFUELING outage	N.A.
12. Guard Pipes	Visual Inspection	Each REFUELING outage	N.A.
13. Pressurizer PORVs	OPERABILITY	Each REFUELING cycle	N.A.
14. Pressurizer PORV Block Valves	OPERABILITY	Quarterly[5]	N.A.
15. Pressurizer Heaters	OPERABILITY[6]	Each REFUELING cycle	N.A.
16. Containment Purge and Vent Isolation Valves	OPERABILITY[7]	Each REFUELING cycle	N.A.

[4] See TS 4.1.d.

[5] Not required when valve is administratively closed.

[6] Test will verify OPERABILITY of heaters and availability of an emergency power supply.

[7] This test shall demonstrate that the valve(s) close in $\leq$ 5 seconds.