Georgia Power

ENCLOSURE 3

PLANT HATCH - UNITS 1, 2
NRC DOCKETS 50-321, 50-366
OPERATING LICENSES DPR-57, NPF-5
REQUEST TO REVISE TECHNICAL SPECIFICATIONS:
SUPPRESSION POOL TEMPERATURE LIMIT
PAGE CHANGE INSTRUCTIONS

The proposed changes to the Plant Hatch Units 1 and 2 Technical Specifications (Appendix A to Operating Licenses DPR-57 and NPF-5) will be incorporated as follows:

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UNIT 1:	3.7-1	3.7-1
	3.7-1a	3.7-1a
	3.7-30	3.7-30
UNIT 2:	3/4 6-11	3/4 6-11
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LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

3.7. CONTAINMENT SYSTEMS

Applicability

The Limiting Conditions for Operation associated with containment systems apply to the operating status of the primary and secondary containment systems.

Objective

The objective of the Limiting Conditions for Operation is to assure the integrity of the primary and secondary containment systems.

Specifications

A. Primary Containment

1. Pressure Suppression Chamber

At any time that irradiated fuel is in the reactor vessel, and the nuclear system is pressurized above atmospheric pressure or work is being done which has the potential to drain the vessel, the pressure suppression chamber water level and water temperature shall be maintained within the following limits except while performing low-power physics tests at atmospheric pressure at power levels not to exceed 5 Mwt.

a. Minimum water level - 12 feet, 2 inches.

b. Maximum water level - 12 feet, 6 inches.

c. During normal power operation, the suppression chamber water temperature shall be maintained $\leq$ 100°F. If this temperature limit is exceeded, pool cooling shall be initiated immediately.

If the water temperature cannot be restored to $\leq$ 100°F within 24 hours, the reactor shall be shut down using normal shutdown procedures.

4.7. CONTAINMENT SYSTEMS

Applicability

The Surveillance Requirements associated with containment systems apply to the primary and secondary containment integrity.

Objective

The objective of the Surveillance Requirements is to verify the integrity of the primary and secondary containment.

Specifications

A. Primary Containment

1. Pressure Suppression Chamber

a. The pressure suppression chamber water level, water temperature and air temperature shall be measured and recorded daily.

b. The interior painted surfaces above the level 1 foot below the normal water line of the pressure suppression chamber shall be visually inspected once per operating cycle. In addition, the external surfaces of the pressure suppression chamber shall be visually inspected on a routine basis for evidence of corrosion or leakage.

c. Whenever there is indication that a significant amount of heat is being added to the pressure suppression pool, the pool temperature shall be continually monitored and also observed and logged every 5 minutes until the heat addition is terminated.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
d. During relief valve operation or testing of RCIC, HPCI, or other testing which adds heat to the suppression pool, the maximum water temperature shall not exceed 105°F. In connection with such testing, the pool temperature must be reduced within 24 hours to ≤ 100°F.	d. Whenever there is indication that there was relief valve operation with the temperature of the suppression pool exceeding 160°F and the reactor primary coolant system pressure greater than 200 psig, an external visual examination of the pressure suppression chamber shall be conducted before resuming power operation.
e. The reactor shall be scrammed from any operating condition when the suppression pool temperature reaches 110°F. Operation shall not be resumed until the pool temperature is reduced to below the normal power operation limit specified in c. above.	
f. During reactor isolation conditions the reactor pressure vessel shall be depressurized to < 200 psig at normal cooldown rates if the pool temperature reaches 120°F.	

3.7.A.1. Pressure Suppression Chamber (Continued)

The maximum pool temperature based on the consideration of complete condensation has been determined by evaluating the blowdown test data from the Mark I Full Scale Test Facility. Based on these analyses, a pool temperature of 195°F can provide complete steam condensation (conservatively assumes no pressurization of the air space over the pool). Analyses for Plant Hatch have shown that with an initial pool temperature of 110°F, the pool temperature following a blowdown will be below that needed for complete condensation. Therefore, the 100°F limit on operating pool temperature is justified.

For an initial suppression pool temperature of 110°F and assuming that one loop of the RHR system is available for containment cooling (2 RHR and 2 RHR service water pumps) adequate net positive suction head (NPSH) is maintained for the core spray, RHR, and HPCI pumps. Therefore, the 100°F limit on operating pool temperature is justified.

Limiting pressure suppression chamber water temperature to 120°F during RCIC, HPCI or relief valve operation when decay heat and stored energy are removed from the primary system by discharging reactor steam directly to the suppression chamber assures adequate margin for controlled blowdown anytime during RCIC operation.

Using a 50°F rise (Table 5.2-1 FSAR) in the pressure suppression chamber water temperature and an initial temperature of < 120°F, the 195°F limit is not exceeded.

If a loss-of-coolant accident were to occur when the reactor water temperature is below 330°F, containment pressure will not exceed the 62 psig maximum pressure even if no condensation were to occur. The maximum allowable pressure suppression chamber water temperature, whenever the reactor is above 212°F, shall be governed by this specification. Thus specifying combinations of water volume and temperature requirements applicable for reactor-water temperatures above 212°F provides additional margin above that available at 330°F.

Should it be necessary to drain the pressure suppression chamber, this should only be done when there is no requirement for core standby cooling systems operability, as explained in basis 3.5.G.

2. Primary Containment Integrity

Discussed under Bases for Specification 3.7.A., Primary Containment.

3. Reactor Building to Pressure Suppression Chamber Vacuum Relief System

The purpose of the reactor building to pressure suppression chamber vacuum relief system is to equalize pressure so that the structural integrity of the containment is assured.

The vacuum relief system from the reactor building to the pressure suppression chamber consists of two 100-percent vacuum relief lines, each of which has an air operated valve and a vacuum breaker (check valve) in series. Operation of either line will maintain the pressure differential less than 2 psid, the external design pressure. Reference Section 5.2.3.6.2 of the FSAR.

SUPPRESSION CHAMBER

LIMITING CONDITION FOR OPERATION

3.6.2.1 The suppression chamber shall be OPERABLE with the pool water:

a. Volume between 87,300 ft^3, and 90,550 ft^3, equivalent to a level between 12 ft 2 in. and 12 ft 6 in., and a

b. Maximum temperature of 100°F during OPERATIONAL CONDITION 1 or 2, except that the maximum temperature may be permitted to increase to:

1. 105°F during testing which adds heat to the suppression chamber during OPERATIONAL CONDITION 1 or 2,

2. 120°F with the main steam line isolation valves closed following a scram from OPERATIONAL CONDITION 1 or 2.

c. Level instrumentation channels alarms adjusted to actuate at:

1. High water level of ≤ 12 ft 6 in.

2. Low water level of ≥ 12 ft 2 in.

APPLICABILITY: CONDITIONS 1, 2 and 3.

ACTION:

a. With the suppression chamber water volume outside the above limits, restore the volume to within the limits within 1 hour or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. In OPERATIONAL CONDITION 1 or 2 with the suppression chamber water temperature > 100°F, except as permitted above, initiate suppression pool cooling and restore the temperature to ≤ 100°F within 24 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

c. In OPERATIONAL CONDITION 1 or 2 with the suppression chamber water temperature > 105°F during testing which adds heat to the suppression chamber, stop all testing, initiate suppression pool cooling and restore the temperature to ≤ 100°F within 24 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

d. In OPERATIONAL CONDITION 1 or 2 with THERMAL POWER > 1 percent of RATED THERMAL POWER and the suppression chamber water temperature > 110°F, place the reactor mode switch in the Shutdown position.

e. With the suppression chamber water temperature > 120°F and the main steam isolation valves closed following a scram from OPERATIONAL CONDITION 1 or 2, depressurize the reactor pressure vessel to < 200 psig at normal cooldown rates.

f. With one suppression chamber water level instrumentation channel inoperable, restore the inoperable channel to OPERABLE status within 30 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

g. With both suppression chamber water level instrumentation channels inoperable, restore at least one inoperable channel to OPERABLE status within 6 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.1 The suppression chamber shall be demonstrated OPERABLE:

a. By verifying the suppression chamber water volume to be between 12 ft 2 in. and 12 ft 6 in. at least once per 24 hours

b. At least once per 24 hours in OPERATIONAL CONDITION 1 or 2 by verifying the suppression chamber water temperature to be ≤ 100°F.

c. At least once per 5 minutes in OPERATIONAL CONDITION 1 or 2 during testing which adds heat to the suppression chamber, by verifying the suppression chamber water temperature ≤ 105°F.

d. At least once per 60 minutes when THERMAL POWER > 1 percent of RATED THERMAL POWER and suppression chamber water temperature > 100°F, by verifying suppression chamber water temperature < 110°F.

SURVEILLANCE REQUIREMENTS (Continued)

e. At least once per 30 minutes following a scram from OPERATIONAL CONDITION 1 or 2 with the main steam line isolation valves closed, and suppression chamber water temperature > 100°F, by verifying suppression chamber water temperature < 120°F.

f. By an external visual examination of the suppression chamber after there has been indication of safety/relief valve operation with the suppression chamber water temperature ≥ 160°F and reactor coolant system pressure > 200 psig.

g. At least once per 18 months by a visual inspection of the accessible interior and exterior of the suppression chamber.

h. By verifying two suppression chamber water level instrumentation channels (2T48-R607A,B) OPERABLE by performance of a:

1. CHANNEL CHECK at least once per 24 hours,

2. CHANNEL FUNCTIONAL TEST at least once per 31 days, and

3. CHANNEL CALIBRATION at least once per 6 months.

3/4.6.2 DEPRESSURIZATION SYSTEMS

The specifications of this section ensure that the primary containment pressure will not exceed the maximum allowable internal pressure of 62 psig during primary system blowdown from full operating pressure.

The suppression chamber water provides the heat sink for the reactor coolant system energy release following a postulated rupture of the system. The suppression chamber water volume must absorb the associated decay and structural sensible heat released during reactor coolant system blowdown from 1040 psig. Since all of the gases in the drywell are purged into the suppression chamber air space during a LOCA, the pressure of the liquid must not exceed 62 psig, the suppression chamber maximum pressure. The design volume of the suppression chamber, water and air, was obtained by considering that the total volume of reactor coolant to be condensed is discharged to the suppression chamber and that the drywell volume is purged to the suppression chamber.

Using the minimum or maximum water levels given in the specification, containment pressure during the design basis accident is approximately 57.5 psig which is below the maximum allowable internal pressure of 62 psig. Maximum water level results in a downcomer submergence of 4 ft 4 in. and the minimum water level results in a submergence approximately 4 in. less. The Mark I Full Scale Test Facility tests were performed at several submergence levels which bound this variance, all with complete condensation. Thus, with respect to the downcomer submergence, this specification is adequate.

The maximum pool temperature based on the consideration of complete condensation has been determined by evaluating the blowdown test data from the Mark I Full Scale Test Facility. Based on these analyses, a pool temperature of 195°F can provide complete steam condensation (conservatively assumes no pressurization of the air space over the pool). Analyses for Plant Hatch have shown that with an initial pool temperature of 110°F, the pool temperature following a blowdown will be below that needed for complete condensation. Therefore, the 100°F limit on operating pool temperature is justified.

For an initial suppression pool temperature of 110°F and assuming that one loop of the RHR system is available for containment cooling (2 RHR and 2 RHR service water pumps), adequate net positive suction head (NPSH) is maintained for the core spray, RHR, and HPCI pumps. Therefore, the 100°F limit on operating pool temperature is justified.

When it is necessary to make the suppression chamber inoperable, this shall only be done as provided in Specification 3.5.4.