Technical Specification Change Request No. 10a

Replace pages 3/4 5-4, 3/4 5-5, and B 3/4 5-2 with the replacement pages 3/4 5-4, 3/4 5-5, and B 3/4 5-2 and B 3/4 5-3.

Reason for Proposed Change

The NRC, in their letter of July 25, 1977, requested Florida Power Corporation to determine if throttle valves are used to obtain the required flow distribution in the HPI and LPI Systems at Crystal River Unit 3. If throttle valves are used at CR#3, the NRC requested FPC to propose changes to the CR#3 Technical Specifications to incorporate the surveillance requirements given in the enclosure of their July 25, 1977, letter.

Since throttle valves are used at CR#3 to obtain the required flow distribution in the HPI and LPI Systems, we are submitting the attached proposed changes to the CR#3 Technical Specifications in accordance with the Commission's letter of July 25, 1977.

Safety Analysis Justifying Proposed Change

The throttle valves are utilized to: (1) prevent total pump flow from exceeding runout conditions when the HPI or LPI System is in its minimum resistance configuration; (2) provide a proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses. In view of the safety function associated with the proper setting of valves used to throttle flow in the HPI and LPI Systems, periodic verification of the correct position of each electrical and/or mechanical position stop for these throttle valves is justified. None of the requirements applicable to the safety analysis are diminished by the proposed surveillance requirements and no unreviewed safety question is involved.

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SURVEILLANCE REQUIREMENTS

4.5.2 Each ECCS subsystem shall be demonstrated OPERABLE:

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

b. By a visual inspection which verifies that no loose debris (rags, trash, clothing, etc.) is present in the containment which could be transported to the containment sump and cause restriction of the pump suction during LOCA conditions. This visual inspection shall be performed:

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

   2. Of the areas affected within containment at the completion of each containment entry when CONTAINMENT INTEGRITY is established.

c. By verifying the correct position of each mechanical position stop for the following swing check valves prior to placing the system back in service following inservice inspection or maintenance on the valves when the HPI System is required to be operable.

   HPI System - MUV-2, MUV-6, MUV-10

d. By verifying that the flow switches for the following throttle valves operate properly prior to placing the system back in service following inservice inspection or maintenance on the valves when the LPI System is required to be operable.

   LPI System - DHV-110, DHV-111

e. At least once per 18 months by:

   1. Verifying automatic isolation and interlock action of the DHR System from the Reactor Coolant System when the Reactor Coolant System pressure is $\geq$ 284 psig.

   2. Verifying the correct position of each mechanical position stop for each of the swing check valves listed in Specification 4.5.2.c.

   3. Verifying that the flow switches for the throttle valves listed in Specification 4.5.2.d operate properly.

SURVEILLANCE REQUIREMENTS (Continued)

4. A visual inspection of the containment emergency sump which verifies that the subsystem suction inlets are not restricted by debris and that the sump components (trash racks, screens, etc.) show no evidence of structural distress or corrosion.

5. Verifying a total leak rate $\leq$ 6 gallons per hour for the LPI system at:

   a) Normal operating pressure or hydrostatic test pressure $\geq$ 150 psig for those parts of the system downstream of the pump suction isolation valve, and

   b) $\geq$ 55 psig for the piping from the containment emergency sump isolation valve to the pump suction isolation valve.

f. At least once per 18 months, during shutdown, by

1. Verifying that each automatic valve in the flow path actuates to its correct position on a high pressure or low pressure safety injection test signal, as appropriate.

2. Verifying that each HPI and LPI pump test starts automatically upon receipt of a high pressure or low pressure safety injection test signal, as appropriate.

g. A flow balance test shall be performed during shutdown to confirm the following minimum injection flow rates following completion of HPI or LPI System modifications that alter system flow characteristics.

HPI System - Single Pump		LPI System - Single Pump
1.	Injection Leg $A_1 \geq$ 250gpm @600psig Injection Leg $A_2 \geq$ 250gpm @600psig	1. Injection Leg A $\geq$ 2800gpm
2.	Injection Leg $B_1 \geq$ 250gpm @600psig Injection Leg $B_2 \geq$ 250gpm @600psig	2. Injection Leg B $\geq$ 2800gpm

3/4.5.2 and 3/4.5.3 ECCS SUBSYSTEMS

The OPERABILITY of two independent ECCS subsystems with RCS average temperature >280°F ensures that sufficient emergency core cooling capability will be available in the event of a LOCA assuming the loss of one subsystem through any single failure consideration. Either subsystem operating in conjunction with the core flooding tanks is capable of supplying sufficient core cooling to maintain the peak cladding temperatures within acceptable limits for all postulated break sizes ranging from the double ended break of the largest RCS cold leg pipe downward. In addition, each ECCS subsystem provides long term core cooling capability in the recirculation mode during the accident recovery period.

With the RCS temperature below 280°F, one OPERABLE ECCS subsystem is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the limited core cooling requirements.

The Surveillance Requirements provided to ensure OPERABILITY of each component ensures, that, at a minimum, the assumptions used in the safety analyses are met and that subsystem OPERABILITY is maintained. The decay heat removal system leak rate surveillance requirements assure that the leakage rates assumed for the system during the recirculation phase of the low pressure injection will not be exceeded.

The purpose of these surveillance requirements is to provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses.

3/4.5.4 BORATED WATER STORAGE TANK

The OPERABILITY of the borated water storage tank (BWST) as part of the ECCS ensures that a sufficient supply of borated water is available for injection by the ECCS in the event of a LOCA. The limits on BWST minimum volume and boron concentration ensure that 1) sufficent water is available within containment to permit recirculation cooling flow to the core, and 2) the reactor will remain subcritical in the cold condition following mixing of the BWST and the RCS water volumes with all control rods inserted except for the most reactive control assembly. These assumptions are consistent with the LOCA analyses.

BASES (Continued)

The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics. The limits on contained water volume, and boron concentration ensure a pH value of between 7.2 and 11.0 of the solution sprayed within containment after a design basis accident. The pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion cracking on mechanical systems and components.