

Technical Specification Change Request No. 17

Replace pages V and B 3/4 4-13 with the attached pages V, 3/4 4-30a, and B 3/4 4-13.

Reason for Proposed Change

The Nuclear Regulatory Commission, in their letter of November 11, 1977, requested Florida Power Corporation to submit additional information concerning the overpressure protection system for Crystal River Unit 3. As part of this request, the NRC staff identified several concerns related to maintenance and operability of the pilot operated relief valve (PORV). Specifically, the NRC requested FPC to submit proposed technical specifications which stipulate that when the reactor coolant temperature is below the minimum value for which the reactor vessel can be fully pressurized (280°F) the PORV may be removed from service if: (1) the HPI pumps are out-of-service and all HPI injection valves are closed and power removed, or (2) the vessel head is removed. The attached CR#3 Technical Specification 3.4.9.3 is being proposed in response to the above stated NRC request.

Safety Analysis Justifying Proposed Change

The overall overpressure protection system at CR#3 for postulated overpressure events during shutdown conditions consists of (1) a steam or nitrogen bubble in the pressurizer which provides the control room operator sufficient time to terminate an event, and (2) the pilot operated relief valve located on the pressurizer which limits the RC pressure to within Appendix G limits. The two sub-systems are separate and independent and together they provide single failure protection against overpressurization.

If the pilot operated relief valve is removed from service for maintenance or testing during a plant cooldown or heatup, when the RC temperature is below 280°F, then one of the two redundant overpressure protection methods is eliminated. However, for all credible pressure increasing events analyzed by Florida Power Corporation, the control room operator has sufficient time to terminate the event and thereby maintain the RCS pressure within Appendix G limits. Removing power from all HPI pumps and closing and removing power from all HPI valves when the RC temperature is below 280°F and PORV is not operable will provide added assurance that erroneous HPI actuation does not occur. Therefore, Technical Specification 3.4.9.3, as proposed, will ensure that adequate overpressure protection of the RC System at CR#3 is maintained.

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Reactor Coolant System

Relief Valve

Limiting Condition for Operation

3.4.9.3 The pressurizer electromatic relief valve shall be OPERABLE with a lift setting of 550 PSIG.

Applicability: Modes 4, 5 and 6*

Action: With the pressurizer electromatic relief valve not OPERABLE, remove power from all high pressure injection pumps and close and remove power from all high pressure injection valves within one hour. The provisions of specification 3.0.4 are not applicable.

Surveillance Requirements

4.4.9.3 The pressurizer electromatic relief valve shall be demonstrated OPERABLE at least once per 7 days by verifying that the pressurizer relief isolation valve is open.

* With the reactor vessel head not removed.

REACTOR COOLANT SYSTEM (Continued)

BASES

All pressure-temperature limit curves are applicable up to the fifth effective full power year. The protection against non-ductile failure is assured by maintaining the coolant pressure below the upper limits of Figures 3.4-2, and 3.4-3, and 3.4-4.

The pressure and temperature limits shown on Figures 3.4-2 and 3.4-3 for reactor criticality and for inservice leak and hydrostatic testing have been provided to assure compliance with the minimum temperature requirements of Appendix G to 10 CFR 50.

The number of reactor vessel irradiation surveillance specimens and the frequencies for removing and testing these specimens are provided in Table 4.4-3 to assure compliance with the requirements of Appendix H to 10 CFR Part 50.

The limitations imposed on pressurizer heatup and cooldown and spray water temperature differential are provided to assure that the pressurizer is operated within the design criteria assumed for the fatigue analysis performed in accordance with the ASME Code requirements.

The OPERABILITY of the pilot operated relief valve ensures that sufficient overpressure protection is provided and that the RC System pressure stays within Appendix G limits when $T_{avg} < 280^{\circ}\text{F}$. The limitations imposed on the HPI System when the PORV is inoperable are provided to assure that erroneous HPI actuation does not occur in modes 4, 5 and 6 [when the reactor vessel head is not removed].

3/4.4.10 STRUCTURAL INTEGRITY

The inspection programs for ASME Code Class 1, 2 and 3 components, except steam generator tubes, ensure that the structural integrity of these components will be maintained at an acceptable level throughout the life of the plant. To the extent applicable, the inspection program for these components is in compliance with Section XI of the ASME Boiler and Pressure Vessel Code.

The internals vent valves are provided to relieve the pressure generated by steaming in the core following a LOCA so that the core remains sufficiently covered. Inspection and manual actuation of the internals vent valves 1) ensure OPERABILITY, 2) ensure that the valves are not stuck open during normal operation, and 3) demonstrates that the valves begin to open and are fully open at the forces equivalent to the differential pressures assumed in the safety analysis.