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Docket Nos.: 50-348
50-364

10 CFR 50.90

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Joseph M. Farley Nuclear Plant
Technical Specifications Change Request
Pressure Temperature Limits Report

Ladies and Gentlemen:

By letter dated July 23, 1997, Southern Nuclear Operating Company (SNC) submitted a Technical Specifications (TS) change request associated with the relocation of the reactor coolant system (RCS) pressure-temperature (P-T) limits from the TS to the Pressure Temperature Limits Report (PTLR) in accordance with the guidance provided in Generic Letter (GL) 96-03, "Relocation of the Pressure Temperature Limit Curves and Low Temperature Overpressure Protection System Limits." By letter dated November 14, 1997, the NRC issued a Request for Information (RAI) requesting clarification of the methodology used associated with the Farley Nuclear Plant (FNP) TS amendment request. SNC responded to the NRC RAI by letter dated December 18, 1997.

Recently, additional questions have been asked by the NRC Staff in several conference calls. Enclosure 1 provides the NRC Staff questions and SNC responses. Enclosure 2 provides the revised technical specification pages. These changes must be incorporated with the technical specification pages forwarded by the December 18, 1997 submittal. In accordance with the requirements of 10 CFR 50.92, Enclosure 3 provides a significant hazards evaluation for the technical specification changes. Enclosure 4 provides a revision to the PTLR methodology submitted in the December 18, 1997 letter. This revision incorporates the latest NRC Staff requirements. The revised PTLRs for FNP Unit 1 and Unit 2 will be provided to the NRC Staff following approval of the PTLR Technical Specifications change.

SNC has determined that the proposed changes will not significantly increase the amount of any effluent which may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. A copy of these proposed changes is being sent to the Alabama State Designee in accordance with 10 CFR 50.91 (b)(1).

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If you have any questions, please advise.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY

Dave Morey

Dave Morey

Sworn to and subscribed before me this 12th day of February 1998

Martha Gayle Dow

Notary Public

My Commission Expires: November 1, 2001

TWS/REM/maf:LTOPTS.DOC

Enclosures:

1. Response to NRC Request for Additional Information Concerning the PTLR Technical Specification Amendment
2. Revised Technical Specification Pages
3. Significant Hazards Evaluation
4. Revised PTLR Methodology

cc: Mr. L. A. Reyes, Region II Administrator
Mr. J. I. Zimmerman, NRR Project Manager
Mr. T. M. Ross, Plant Sr. Resident Inspector
Dr. D. E. Williamson, State Department of Public Health

Enclosure 1

Response to NRC Request for Additional Information
Concerning the
PTLR Technical Specification Amendment

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1. The analysis assumes that the residual heat removal suction relief valves (RHRRV) open at the Technical Specification (TS) setpoint plus 10% for valve accumulation (450 psi + 45 psi = 495 psi). The submittal indicates that the surveillance procedures use 445 psi \pm 5 psi, which is lower than the TS required value. Please describe why it is acceptable to add the assumed setpoint drift to the surveillance procedure value rather than the TS value. Additionally, if the ASME code allows \pm 3% tolerance, why is \pm 5 psi used?

SNC Response: TS 3.4.10.3 states,

"At least one of the following overpressure protection systems shall be OPERABLE:

- a. Two RHR relief valves with:
 1. A lift setting of less than or equal to 450 psig, and
 2. The associated RHR relief valve isolation valves open; or
- b. The Reactor Coolant System (RCS) depressurized with an RCS vent of greater than or equal to 2.85 square inches."

Accordingly, an RHRRV setpoint greater than 450 psig is unacceptable. An RHRRV setpoint less than 450 psig is consistent with the TS and provides greater protection of the RCS in the unlikely event of a low temperature overpressure transient.

Following SNC's original PTLR submittal dated August 20, 1997, the calibration procedure for the RHRRVs was revised to reflect a setpoint of 436 psig with a tolerance of \pm 13 psi (\pm 3 %), consistent with the ASME Code for Class II valves. Addition of the setpoint tolerance of \pm 13 psi to the 436 psig value assures that the setpoint for the RHRRVs remains less than or equal to 450 psig as required by TS 3.4.10.3.

2. The P/T limit curves include an adjustment to include the static and dynamic head associated with the operation of the reactor coolant pumps (RCPs). Only one RCP is assumed to be operating below 110°F and three RCPs are assumed above 110°F. Do the TSs prohibit operating with more than one RCP below 110°F? If not, why? Additionally, please verify that the values chosen for the static and dynamic head include the effects of the running RHR pumps.

SNC Response: The technical specification pages are being revised to limit the operation of more than one reactor coolant pump below 110°F. The revised technical specification pages are included in Enclosure 2. Additionally, the corrections to the P/T limits associated

Response to NRC RAI Concerning the
PTLR Technical Specification Amendment

with the operation of the reactor coolant pumps include the static and dynamic effects of the two operating RHR pumps.

3. Is there any possibility that pressurization could occur below 70°F, where the P/T limits and setpoints are calculated, if the temperature instrumentation drift or uncertainty is considered? The submittal indicates that no additional margin for instrumentation uncertainty is needed for the enable temperature because there is 8°F margin. Please state the temperature instrument uncertainty, the technique used to derive the instrument uncertainty, and verify that it is less than 8°F.

SNC Response: Based on use of wide range cold leg temperature, the indicated temperature uncertainty is $\pm 21^\circ\text{F}$ while cooling down. At cold conditions less than 100°F, prior to RCP startup, the best indicator of RCS vessel temperature is the RHR heat exchanger discharge temperature. This indicated temperature uncertainty is $\pm 10^\circ\text{F}$ or less. These uncertainties were developed using the Westinghouse setpoint uncertainty methodology for Protection Systems which is consistent with ISA 67.04, employs a square root sum of the squares (SRSS) approach, and reflects Farley-specific equipment and calibration practices. This methodology has been previously employed for other projects for the Farley Nuclear Plants, such as RTD Bypass Elimination, Steam Generator Level Tap Relocation, and VANTAGE 5 Fuel Upgrade, which have been approved by the NRC Staff.

Incorporation of the 21°F temperature uncertainty into the temperature at which the RHR relief valves must be operable results in a change in the applicability statement of Technical Specification 3.4.10.3 to require the RHR relief valves to be operable when one of the RCS cold leg temperatures is less than 325°F. The revised technical specification pages are included in Enclosure 2. The revised Significant Hazards Evaluation is provided in Enclosure 3.

Incorporation of the 10°F temperature uncertainty into the minimum boltup temperature results in a proposed minimum boltup temperature of 75°F (the original minimum boltup temperature included a 5°F margin).

4. The methodology submitted indicates that, "if the projected RCS pressure exceeds the Appendix G allowable pressure for the corresponding temperature, changes to the RHRRV characteristics, e.g., may be required" and that these changes may require NRC approval (emphasis added). Although there are a number of ways that could be used to resolve the issue, the methodology must clearly state that if the projected RCS pressure exceeds the

Response to NRC RAI Concerning the
PTLR Technical Specification Amendment

Appendix G allowable pressure using the methodology presented and referenced in the TS that the issue must or shall be resolved with NRC review and approval.

SNC Response: The methodology has been revised to incorporate the requested change. The methodology, with the changes marked, is provided in Enclosure 4.

5. Generic Letter 96-03 includes an LCO that requires the accumulators to be isolated when the accumulator pressure is greater than or equal to the maximum RCS pressure for existing cold leg temperature allowed in the PTLR. The proposed changes to the technical specifications do not include this LCO.

SNC Response: During conversations with the NRC staff, a question was raised regarding failure of SNC to include a TS that requires the accumulators to be isolated from the RCS during low temperature operation to preclude inadvertent injection of an accumulator into a water-solid RCS. By NRC Safety Evaluation Report dated July 31, 1979, the NRC found FNP's commitment to isolate the accumulators with power removed from the isolation valves whenever the plant is on RHR cooling to be an acceptable means for precluding the inadvertent injection. The model Technical Specifications included in GL 96-03 were based on the Improved Standard Technical Specifications which have not been implemented for FNP. The requirement to isolate the accumulators when the accumulator pressure is greater than or equal to the maximum RCS pressure for the cold leg temperature allowed in the PTLR will be incorporated in the FNP Technical Specifications upon implementation of the Improved Standard Technical Specifications.