UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATING TO AMENDMENT NO. 92 TO FACILITY

OPERATING LICENSE NO. NPF-16

FLORIDA POWER & LIGHT COMPANY

ST. LUCIE, UNIT 2

DOCKET NO. 50-389

1.0 INTRODUCTION

By letter dated December 29, 1997, as supplemented June 15, 1998, Florida Power & Light Company (FPL) requested changes to the St. Lucie Unit 2 Technical Specifications (TS) to modify specifications for selected cycle-specific reactor physics parameters to refer to the Core Operating Limits Report (COLR) for limiting values. Specifically, the cycle-specific parameters for moderator temperature coefficient (MTC), full-length control element assembly (CEA) position misalignment greater than 15 inches, regulating CEA insertion limits, linear heat rate, total planar radial peaking factor (F_{xy}^T), total integrated radial peaking factor (F_r^T), axial shape index, and refueling boron concentration. The proposed changes also include the addition of the COLR to the Definitions section and to the reporting requirements of the Administrative Controls section of TS.

The June 15, 1998, supplement provided clarifying information that did not change the scope of the December 29, 1997 application and the initial proposed no significant hazards consideration determination.

2.0 EVALUATION

The licensee's proposed changes to the TS are in accordance with the guidance provided by NRC Generic Letter 88-16 and are addressed below.

(1) The Definition section of the TS was modified to include a definition of the COLR that requires cycle/reload-specific parameter limits to be established on a unit-specific basis in accordance with an NRC approved methodology that maintains the limits of the safety analysis. The definition notes that plant operation within these limits is addressed by individual specifications.

(2) The following specifications were revised to replace the values of cycle-specific parameter limits with a reference to the COLR that provides these limits:

(a) Specification 3.1.1.4

The LCO [limiting condition for operation] for the MTC has been revised to refer to the limits specified in the COLR. The maximum positive limit still remains in the TS.

(b) Specification 3.1.3.1

The time constraints for full power operation with the misalignment of one full length CEA by more than 15 inches from any other CEA in its group are relocated to the COLR. The power dependent insertion limit, in surveillance requirement 4.1.3.1.4, has been relocated to the COLR.

(c) Specification 3.1.3.6

The regulating CEA group withdrawal sequence and insertion limits for this specification are relocated to the COLR.

(d) Specification 3.2.1

The linear heat rate limits for this specification are relocated to the COLR. The axial shape index vs. fraction of maximum allowable power level and the allowable combinations of thermal power and F_r^T, F_{xy}^T, are relocated to the COLR.

(e) Specification 3.2.2

The F_{xy}^T limit for this specification is relocated to the COLR.

(f) Specification 3.2.3

The F_r^T limits for this specification are relocated to the COLR. The axial shape index operating limits with four reactor coolant pumps operating are relocated to the COLR.

(g) Specification 3.2.5 (Table 3.2-2)

The axial shape index limits for this specification are relocated to the COLR.

(h) Specification 3.9.1

The boron concentration limit of all filled portions of the reactor coolant system and the refueling canal when the reactor vessel head is unbolted or removed is relocated to the COLR. An editorial change in the associated surveillance requirement (4.9.1.1) was made necessary by the relocation of the boron concentration limit for specification 3.9.1.

These changes to the TS are acceptable in that operation of the facility will continue to be controlled consistent with 10 CFR 50.36 by inclusion of TS 6.9.1.11, which lists NRC approved methologies that will be used to determine values for the relocated cycle-specific parameters and ensure that operation is within applicable safety limits.

In addition, the bases of affected specifications have been modified by the licensee to include appropriate reference to the COLR. Based on our review, we conclude that the changes to these bases are acceptable.

(3) Specification 6.9.1.11 was added to the reporting requirements of the Administrative Controls section of the TS. This specification requires that the COLR, including any mid cycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC. Pursuant to 10 CFR 50.4(b)(1), this report would be submitted to the Nuclear Regulatory Commission, Document Control Desk, the appropriate Regional Office, and the NRC Resident Inspector. The COLR provides the values of cycle-specific parameter limits that are applicable for the current fuel cycle. Furthermore, these specifications require that the values of these limits be established using NRC approved methodologies and be consistent with all applicable limits of the safety analysis. The approved methodologies are listed in the specification.

The list of documents in TS 6.9.1.11 describing the acceptable FPL analytical methods includes topical report NF-TR-95-01, "Nuclear Physics Methodology for Reload Design of Turkey Point & St. Lucie Nuclear Plants," dated January, 1995. This report was approved as an acceptable reference for determining COLR parameters for Units 3 and 4 of the Turkey Point plants in Amendment 174 to License No. DPR-31 and in Amendment 168 to License No. DPR-41, respectively, dated June 9, 1995, and for St. Lucie Unit 1 in Amendment 150 to DPR-67, dated April 1, 1997. Since NF-TR-95-01 did not include any benchmark data for St. Lucie Unit 2, FPL included Supplement 1 (August 1997) as an attachment to this COLR request. This supplement provides comparisons of the results of calculations performed by FPL using the methodology described in NF-TR-95-01 with operating data from St. Lucie Unit 2. The staff has reviewed the comparisons to zero power physics test measurements and at power operating data from St. Lucie Unit 2, Cycles 8 and 9. These comparisons included critical boron concentration, MTC, control rod worth, differential boron worth, boron letdown curves, and axial power distributions. We conclude that the good agreement between the predictions and the measurements reported demonstrates FPL's capability to apply the Westinghouse licensed methodology presented in NF-TR-95-01 to perform reload core design for St. Lucie Unit 2. Therefore, NF-TR-95-01 is an acceptable reference in TS 6.9.1.11 for St. Lucie Unit 2. All approved methods used to determine COLR parameters are appropriately listed in Section 6.9.1.11 of the TS in accordance with Generic Letter 88-16. Use of the approved methodologies will ensure that all applicable limits (fuel thermal, mechanical, core thermal-hydraulic, and nuclear limits such as shutdown margin, transient and accident analysis limits) of the safety analysis are met.

In addition to the revisions needed to implement the COLR, we also reviewed the following proposed changes. The phrase "core power distribution" is replaced with "linear heat rate" in TS 4.2.1.3 and 4.2.1.4 to more accurately reflect the parameter addressed by these surveillance requirements. Based on our review, we conclude that the changes to these specifications are administrative and, therefore, are acceptable.

3.0 STAFF CONCLUSION

On the basis of our review of the above items, we conclude that the licensee provided an acceptable response to those items addressed in the NRC guidance in Generic Letter 88-16 on modifying cycle-specific parameter limits in TS. Because plant operation of St. Lucie 2 continues to be limited in accordance with the values of cycle-specific parameter limits that are established using NRC-approved methodologies, the NRC staff concludes that these changes to the TS are acceptable. We have also reviewed the proposed administrative changes to TS 4.2.1.3 and 4.2.1.4 and conclude that they are acceptable.

The staff reviewed Supplement 1 to topical report NF-TR-95-01 provided as an enclosure to this licensing request. Based on this review, we conclude that the good agreement between predictions and Unit 2 data demonstrates FPL's capability to apply the methodology presented in NF-TR-95-01 to perform reload core design for St. Lucie Unit 2. Therefore, topical report NF-TR-95-01 is an acceptable reference in TS 6.9.1.11 for St. Lucie Unit 2.

As part of the implementation of Generic Letter 88-16, the staff has also reviewed the COLR for Cycle 10 that was provided by the licensee. On the basis of this review, the staff concludes that the format and content of the St. Lucie Unit 2 COLR are acceptable. Although Section 3.0 of the St. Lucie Unit 2, Cycle 10 COLR contains a list of approved methods, Generic Letter 88-16 requires all approved methods used to determine COLR parameters to be listed in the TS. The approved methods for St. Lucie Unit 2 are appropriately listed in Section 6.9.1.11 of the TS in accordance with Generic Letter 88-16.

4.0 STATE CONSULTATION

Based upon a letter dated March 8, 1991, from the State of Florida to Deborah A. Miller, NRC, the State of Florida has no comments.

5.0 ENVIRONMENTAL CONSIDERATION

This amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding (63 FR 6985). The amendment also changes reporting or record keeping requirements. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and (c)(10). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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