



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20566

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 159 TO

FACILITY OPERATING LICENSE NO. DPR-51

ENERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNIT NO. 1

DOCKET NO. 50-313

1.0 INTRODUCTION

By letter dated November 7, 1991, as supplemented March 19, 1992, Entergy Operations, Inc. (the licensee) proposed changes to Technical Specifications (TS) for Arkansas Nuclear One, Unit No. 1 (ANO-1). The changes would revise specifications that have cycle-specific parameter limits, removing the values of those limits and referencing the Core Operating Limits Report (COLR) for the values of those limits. 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 the TS. Guidance on the proposed changes was developed by NRC and provided to all power reactor licensees and applicants by Generic Letter (GL) 88-16, "Removal of Cycle-Specific Parameter Limits from Technical Specifications," dated October 4, 1988.

2.0 EVALUATION

The proposed changes to the TS are in accordance with the guidance provided by GL 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 NRC-approved methodologies that maintain 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 3.5.2.4.1

The quadrant power tilt limit for this specification is specified in the COLR.

(b) Specification 3.5.2.5.3

The control rod position limits for operation with 4, 3, and 2 pumps are specified in the COLR for this specification.

(c) Specification 3.5.2.5.4

The axial power shaping rods (APSRs) position limit for this specification is specified in the COLR.

(d) Specifications 3.5.2.6.2 and 3.5.2.6.3

The reactor power imbalance limit for these specifications is specified in the COLR.

The bases of these specifications have been revised by the licensee to include appropriate references to the COLR. In particular, the maximum linear heat rate defined by the LOCA analyses to support the analysis for the reactor power imbalance limit is specified in the COLR. Based on its review, the staff concludes that the changes to the bases are acceptable.

- (3) Specification 6.12.3 is revised to include the COLR under the reporting requirements of the Administrative Controls section of the IS. This specification requires that the COLR be submitted, upon issuance, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector. The report provides the values of cycle-specific parameter limits that are applicable for the current fuel cycle. Furthermore, this specification requires that NRC-approved methodologies be used in establishing the values of these limits for the relevant specifications and that the values be consistent with all applicable limits of the safety analysis. The approved methodologies are the following:

- (a) Babcock & Wilcox, Topical Report BAW-10122A, Rev. 1, "Normal Operating Controls," May 1984.
- (b) Babcock & Wilcox, Topical Report BAW-10116-A, "Assembly Calculations and Fitted Nuclear Data," May 1977.
- (c) Babcock & Wilcox, Topical Report BAW-10117P-A, "Babcock & Wilcox Version of PDQ User's Manual," January 1977.
- (d) Babcock & Wilcox, Topical Report BAW-10118A, "Core Computational Techniques and Procedures," December 1979.
- (e) Babcock & Wilcox, Topical Report BAW-10124A, "FLAME 3 - A Three-Dimensional Nodal Code for Calculating Core Reactivity and Power Distributions," August 1976.

- (f) Babcock & Wilcox, Topical Report BAW-10125A, "Verification of Three-Dimensional FLAME Code," August 1976.
- (g) Babcock & Wilcox, Topical Report BAW-10119P-A, "Power Peaking Nuclear Reliability Factors," February 1979.

[Methodology for Specifications:

3.5.2.4 (Quadrant Tilt)

3.5.2.5 (Control Rod Positions)

3.5.2.6 (Reactor Power Imbalance)

Note: Specification 3.5.2.5 is applicable to regulating rod positions and APSR positions. Applies to References a-g.]

- (h) Babcock & Wilcox, Topical Report BAW-10103A, Rev. 3, "ECCS Analysis of B&W's 177-FA Lowered Loop NSS," July 1977.
- (i) Babcock & Wilcox, Topical Report BAW-10162P-A, "TACO3 Fuel Pin Thermal Analysis Computer Code," November 1989.
- (j) Babcock & Wilcox, Topical Report BAW-1915PA, "Bounding Analytical Assessment of NUREG-0630 Models on LOCA kW/ft Limits With Use of FLECSET," November 1988.
- (k) Babcock & Wilcox, Topical Report BAW-10104PA, Rev. 5, "B&W ECCS Evaluation Model," November 1988

[Methodology for Specifications:

3.5.2 Bases (LOCA Limited Maximum Allowable Linear Heat Rate figure)

Note: Applies to References h-k]

Finally, Specification 6.12.3 requires that all changes in cycle-specific parameter limits be documented in the COLR before each reload cycle or remaining part of a reload cycle and submitted upon issuance to NRC, prior to operation with the new parameter limits.

As part of the implementation of GL 88-16, the staff has also reviewed a sample COLR provided by the licensee and concludes that the format and content of the sample COLR are acceptable.

On the basis of its review, the NRC staff concludes that the licensee provided an acceptable response to the items in GL 88-16 on modifying cycle-specific parameter limits in TS. Because plant operation 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 this change is administrative in nature and that there is no impact on plant safety as a consequence. Accordingly, the staff finds that the proposed changes are acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Arkansas State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to 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 or a change to a surveillance requirement. The 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 this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) (57 FR 709). This amendment also involves changes in recordkeeping, reporting or administrative procedures or requirements. Accordingly, with respect to these items, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR §51.22(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.

5.0 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.

Principal Contributor: T. Huang

Date: April 14, 1992