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April 29, 1996

1CAN049602

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

Subject: Arkansas Nuclear One - Unit 1
Docket No. 50-313
License No. DPR-51
Technical Specification Change Request Concerning Relocation of the
Variable Low Reactor Coolant System Pressure Trip Setpoint and Its
Associated Protective Limits to the Core Operating Limits Report

Gentlemen:

By letter dated November 7, 1991 (1CAN119102), Entergy Operations requested and received a technical specification change request to utilize a Core Operating Limits Report (COLR) per Generic Letter 88-16 at Arkansas Nuclear One, Unit 1 (ANO-1). Entergy Operations has subsequently determined that the variable low reactor coolant system (RCS) pressure trip setpoint of Table 2.3-1 is cycle-specific and proposes to relocate it and its associated protective limits of Figures 2.1-1 and 2.1-3 to the COLR. The proposed ANO-1 Technical Specification change request and the proposed additions to the ANO-1 Cycle 13 COLR for the current operating cycle are attached for your review.

The proposed change has been evaluated in accordance with 10CFR50.91(a)(1) using criteria in 10CFR50.92(c) and it has been determined that this change involves no significant hazards considerations. The bases for these determinations are included in the attached submittal.

Entergy Operations requests that the effective date for this change be within 30 days of issuance. Although this request is neither exigent nor emergency, your prompt review is requested prior to the next ANO-1 refueling outage (1R13) which is currently scheduled to begin September 17, 1996.

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Very truly yours,

Ronald L. Demase

IGD/nbm

Attachments

To the best of my knowledge and belief, the statements contained in this submittal are true.

SUBSCRIBED AND SWORN TO before me, a Notary Public in and for Hinds County and the State of Mississippi, this 29th day of April, 1996.

Janis R. Lee

Notary Public

My Commission Expires

NOTARY PUBLIC STATE OF MISSISSIPPI AT LARGE
MY COMMISSION EXPIRES: August 10, 1997
BONDED THRU HEIDEN-MARCHETTI, INC.

U. S. NRC

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ATTACHMENT

TO

1CAN049602

PROPOSED TECHNICAL SPECIFICATION

AND

RESPECTIVE SAFETY ANALYSES

IN THE MATTER OF AMENDING

LICENSE NO. DPR-51

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNIT ONE

DOCKET NO. 50-313

DESCRIPTION OF PROPOSED CHANGES

The proposed changes to the ANO-1 Technical Specifications include the following:

- Specification 2.1.3 including the associated bases is being revised to relocate Figures 2.1-1 and 2.1-3 and design nuclear power peaking factors from the technical specifications to the COLR. These figures are being combined in the COLR.
- Table 2.3-1 is being revised to relocate the variable low RCS pressure trip (VLPT) setpoint from the technical specifications to the COLR. The associated bases Figure 2.3-1 is being relocated to the COLR. Items "C" and "D" of the bases of specification 2.3.1 are also being revised to reflect the relocation of the VLPT setpoint and Figure 2.3-1.
- The list of figures is being revised to reflect the deletion of Figures 2.1-1, 2.1-3, and 2.3-1 from the technical specifications and for editorial purposes associated with the previously deleted Figures 2.1-2 and 2.3-2.
- Specification 6.12.3.1 is being revised to add the variable low RCS pressure-temperature protective limits and the VLPT setpoint as being documented in the COLR.

BACKGROUND

Generic Letter 88-16 dated October 4, 1988 (OCNA108809), "Removal of Cycle-Specific Parameter Limits from Technical Specifications," allowed licensees to remove cycle-specific parameters from technical specifications and place them in a COLR provided the limits are developed using an NRC-approved methodology. The change to utilize a COLR was previously requested and subsequently approved by the Staff as Amendment Number 159 (1CNA049202), dated April 14, 1992. Subsequent to the relocation of cycle-specific parameters from technical specifications to the COLR, it has been determined that the reload core designs are evolving such that it would be advantageous to begin treating the VLPT setpoint and its associated protective limits on a cycle-specific basis.

DISCUSSION OF CHANGE

Due to continued efforts to maximize fuel management, the predicted power distributions for future fuel cycles will differ to some extent from the power distributions based on previous fuel cycle designs. The differences can affect the variable low RCS pressure-temperature protective limits given in technical specification Figures 2.1-1 and 2.1-3 and the VLPT setpoint given in technical specification Table 2.3-1 and Figure 2.3-1. These specifications have been revised in the past in order to accommodate cycle-specific changes and are expected to change more frequently in the future.

The variable low RCS pressure-temperature protective limits define a locus of points for which the minimum steady-state departure from nucleate boiling ratio (DNBR) is greater than or equal to the departure from nucleate boiling analysis limit for the critical heat flux (CHF) correlation being used. These points are calculated for the maximum overpower condition and limiting reactor coolant pump operating configurations. These points are not error adjusted and are calculated at the core outlet temperature and pressure.

As stated in technical specification 2.1.2, the DNBR shall be maintained greater than the limits specified for the appropriate CHF correlation. Maintaining DNBR greater than this safety limit is ensured by maintaining the RCS pressure and core outlet temperature within the variable low RCS pressure-temperature protective limits of Figures 2.1-1 and 2.1-3. It should be noted that the safety limits given in technical specification 2.1.2 are not changing; only the associated protective limits which ensure that the safety limits of technical specification 2.1.2 are not exceeded may change. Therefore, the variable low RCS pressure-temperature protective limits of Figures 2.1-1 and 2.1-3 are being relocated to the COLR.

The current VLPT setpoint of Table 2.3-1 and Figure 2.3-1, in conjunction with the low pressure and high temperature trip setpoints, defines the worst case combination of RCS pressure and core outlet temperature conditions that may exist at steady state conditions to preclude departure from nucleate boiling for the limiting fuel pin in the core. The VLPT setpoint assures automatic enforcement of the core protection limits assuming conservative power peaking conditions and bounding measurement instrumentation uncertainties. The VLPT setpoint of Table 2.3-1 and Figure 2.3-1 is being relocated to the COLR. The other trip setpoints indicated on Figure 2.3-1 are unaffected by this change and will continue to be maintained in Table 2.3-1.

For the upcoming fuel cycle 14 and future reload fuel cycle designs, it is anticipated that the variable low RCS pressure-temperature protective limits and the VLPT setpoint will be required to be revised in order to assure the current margin of safety is maintained. These cycle-specific COLR limits and setpoint will be developed using the previously reviewed and NRC-approved methodology, BAW-10179P-A. Technical specifications will continue to require operation within both the core protective and operational limits, and the approved CHF correlation DNBR safety limit will continue to be met. The Staff approved a similar change for the three Oconee nuclear units on January 5, 1993.

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

An evaluation of the proposed change has been performed in accordance with 10CFR50.91(a)(1) regarding no significant hazards considerations using the standards in 10CFR50.92(c). A discussion of these standards as they relate to this amendment request follows:

Criterion 1 - Does Not Involve a Significant Increase in the Probability or Consequences of an Accident Previously Evaluated.

The removal of the cycle-dependent variable low RCS pressure-temperature protective limits and the VLPT setpoint from technical specifications and placing them into the COLR has no impact on plant safety and is considered to be administrative in nature. The proposed change does not affect the safety analyses, physical design, or operation of the plant. Technical specifications will continue to require operation within the core protective and operational limits for each reload cycle as calculated by the approved reload design methodologies. The appropriate actions required if limits are violated will remain in the technical specifications. The reload report presents the results of cycle-specific evaluations of accident analyses and transients addressed in the ANO-1 Safety Analysis Report. The cycle-specific 10CFR50.59 evaluation of the reload report demonstrates that changes in fuel cycle design and the corresponding COLR do not involve a significant increase in the probability or consequences of an accident previously evaluated.

Therefore, this change does not involve a significant increase in the probability or consequences of any accident previously evaluated.

Criterion 2 - Does Not Create the Possibility of a New or Different Kind of Accident from any Previously Evaluated.

The proposed change to relocate the variable low RCS pressure-temperature protective limits and the VLPT setpoint from the technical specifications to the COLR is administrative in nature. No change to the design configuration or method of operation of the plant is made by this proposed change, and therefore, no new transient initiator has been created. Technical specifications will continue to require operation within the required core protective and operating limits and appropriate actions will be taken if the limits are exceeded. Because plant operation will continue to be limited by the cycle-specific COLR limits that are established using NRC-approved methodologies, these relocations will have no impact on plant safety.

Therefore, this change does not create the possibility of a new or different kind of accident from any previously evaluated.

Criterion 3 - Does Not Involve a Significant Reduction in the Margin of Safety.

Existing technical specification operability and surveillance requirements are not reduced by the proposed change to relocate the variable low RCS pressure-temperature protective limits and the VLPT setpoint to the COLR. The proposed changes are administrative in nature and do not relate to or modify the safety margins defined in and maintained by the technical specifications. The cycle-specific COLR limits for future reload fuel cycles will continue to be developed based on NRC-approved methodologies. Each future reload undergoes a 10CFR50.59 evaluation to assure that operation of the plant within the cycle-specific limits will not involve a significant reduction in a margin of safety.

Therefore, this change does not involve a significant reduction in the margin of safety.

Based upon the reasoning presented above and the previous discussion of the amendment request, Entergy Operations proposes that the requested change does not involve a significant hazards consideration.