

May 30, 2006

Mr. Jeffrey S. Forbes
Site Vice President
Arkansas Nuclear One
Entergy Operations, Inc.
1448 S. R. 333
Russellville, AR 72802

SUBJECT: ARKANSAS NUCLEAR ONE, UNIT 2 (ANO-2) - ISSUANCE OF AMENDMENT
RE: MODIFICATION OF TECHNICAL SPECIFICATION 3.1.1.5, MINIMUM
TEMPERATURE FOR CRITICALITY (TAC NO. MC8539)

Dear Mr. Forbes:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 264 to Renewed Facility Operating License No. NPF-6 for ANO-2. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated September 19, 2005. The amendment changes the current Limiting Condition for Operation (LCO) for TS 3.1.1.5 by raising the minimum temperature for criticality from the current value of 525 °F to 540 °F, to change the current Action statement for LCO 3.1.1.5 to reflect this change, and to replace the current statement in Surveillance Requirement 4.1.1.5 with wording consistent with NUREG-1432, "Standard Technical Specifications-Combustion Engineering Plants."

A copy of our related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA/

Drew Holland, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-368

Enclosures: 1. Amendment No. 264 to NPF-6
2. Safety Evaluation

cc w/encls: See next page

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Accession Nos.: (Amd) **ML060830023** (TS)**ML061500260** (Pkg)**ML060830026**

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ENTERGY OPERATIONS, INC.

DOCKET NO. 50-368

ARKANSAS NUCLEAR ONE, UNIT NO. 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 264
Renewed License No. NFP-6

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Entergy Operations, Inc. (the licensee) dated September 19, 2005, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 2.c.(2) of Renewed Facility Operating License NFP-6 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 264 , are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective as of its date of issuance and shall be implemented within 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

David Terao, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: May 30, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 264

RENEWED FACILITY OPERATING LICENSE NO. NPF-6

DOCKET NO. 50-368

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove
3/4 1-6

Insert
3/4 1-6

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 264 TO

RENEWED FACILITY OPERATING LICENSE NO. NPF-6

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNIT NO. 2

DOCKET NO. 50-368

1.0 INTRODUCTION

By letter dated September 19, 2005 (Agencywide Documents Access and Management System Accession No. ML060680651), Entergy Operations, Inc. (the licensee), requested changes to the Technical Specifications (TSs) for Arkansas Nuclear One, Unit No. 2 (ANO-2).

The proposed changes would revise TS 3.1.1.5, "Minimum Temperature for Criticality." The request proposes to change the current Limiting Condition for Operation (LCO) for TS 3.1.1.5 by raising the minimum temperature for criticality from the current value of 525 °F to 540 °F, to change the current Action Statement for LCO 3.1.1.5 to reflect this change, and to replace the current statement in Surveillance Requirement (SR) 4.1.1.5 with wording consistent with NUREG-1432, *Standard Technical Specifications-Combustion Engineering Plants*. Changes will be made to the ANO-2 TS Bases in accordance with the TS Bases Control Program (ANO-2 TS 6.5.14).

2.0 REGULATORY EVALUATION

There are no accident analyses that dictate the minimum temperature for criticality, but all low power safety analyses must assume an initial temperature limit. The regulatory requirement for the specification of a reactor coolant system (RCS) minimum temperature for criticality is set forth in 10 CFR 50.36(c)(2)(ii) Criterion 2. In accordance with 10 CFR 50.91(a)(1), the licensee's license amendment request provides the NRC with the licensee's analysis regarding the issue of no significant hazards with regard to the proposed changes. The applicable criteria for demonstrating that the proposed amendment involves no significant hazards considerations are stated in 10 CFR 50.92(c)(1)-(3).

3.0 TECHNICAL EVALUATION

In support of this amendment, the licensee provided its evaluation of the technical implications of the proposed change to the minimum temperature for criticality at ANO-2. The minimum temperature for criticality represents the limiting temperature at which the core design is verified to satisfy the limits on the most positive moderator temperature coefficient (MTC) specified in the TS/core operating limits report. These MTC limits, specified as TS LCO 3.1.1.4 and TS LCO 3.2.6 in the ANO-2 TS, would not change as a result of the proposed change to the

minimum temperature for criticality. The NRC staff concludes that because the proposed TS change of minimum temperature for criticality does not affect the NRC-approved analytical methods used to determine core operating limits, and because the MTC will continue to be verified over the appropriate temperature range, the current transient analyses results are bounding and remain valid. Furthermore, the reactor protective instrumentation will continue to function within its normal operating range and accuracies.

The change to the Action Statement for LCO 3.1.1.5 affects only the value at which the action is initiated, namely at 540 °F rather than 525 °F. The action remains the same.

The current SR does not require that the minimum temperature for criticality be monitored after criticality is achieved, unless the temperature drops below 535 °F. The proposed addition of a frequency to monitor the temperature after the reactor is critical is consistent with the frequency in SR 4.2.6, which requires the RCS cold leg temperature to be monitored at least once per 12 hours. The 12 hour frequency takes into account the indications and alarms that are continually available in the Control Room to the Operator. This change is consistent with the Revised Standard TSs for Combustion Engineering Plants contained in NUREG-1432, and the NRC staff concludes that it is acceptable.

Therefore, with the proposed change, the requirement in the current SR 4.1.1.5 to check temperature at least once per 30 minutes when the reactor is critical and the RCS T_{avg} is less than 535 °F is no longer applicable. If RCS T_{avg} were to fall below the TS limit of 540 °F, the Action Statement for LCO 3.1.1.5 would require restoration of the temperature to within its limit or shutdown of the reactor.

Furthermore, the current SR 4.1.1.5 to monitor temperature within 15 minutes prior to achieving criticality is redundant, because standard operating practice includes verification that TSs are satisfied prior to entering the Mode of applicability. The current Mode of applicability is Mode 1 and 2 with k_{eff} greater than or equal to 1.0. Prior to entering Mode 2 and becoming critical, the minimum temperature for criticality limit (as now proposed 540 °F) has to be met. Currently, administrative controls are in place to verify the temperature every 15 minutes during the approach to criticality.

The NRC staff therefore concludes it is acceptable to replace the current requirement of the ANO-2 SR as proposed. Changes will be made to the ANO-2 TS Bases in accordance with the TS Bases Control Program (ANO-2 TS 6.5.14).

4.0 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.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. 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 (70 FR 72672, December 6, 2005). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the 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 this amendment will not be inimical to the common defense and security or the health and safety of the public.

Principal Contributor: Y. Orechwa

Date: May 30, 2006

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cc:

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September 2005