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2CAN120106

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

Subject: Arkansas Nuclear One - Unit 2
Docket No. 50-368
License No. NPF-6
Corrections to the ANO-2 Power Uprate License Application

Gentlemen:

In a letter dated December 19, 2000 (2CAN120001), Entergy Operations, Inc. submitted a license application for Arkansas Nuclear One, Unit 2 (ANO-2) to increase the authorized power level from 2815 megawatts thermal to 3026 megawatts thermal. The NRC staff discovered minor editorial discrepancies between some of the technical specification pages submitted with the license application and the official copy maintained by the NRC (i.e., the authority file). These discrepancies are discussed in Attachment 1. Corrected pages are provided where necessary.

In addition, other minor corrections/clarifications have been made to two of the technical specification pages, the title of Core Operating Limits Report (COLR) Figure 2, and the list of Operating License/Technical Specifications changes on page 13 of 16 of the attachment to the license application. Attachment 1 also provides a discussion of each of these changes and includes corrected pages where necessary.

Attachment 2 contains a Technical Specifications Bases change that was discussed, but not submitted for approval, in a response to a staff question in Entergy's letter dated October 31, 2001 (2CAN100102). Entergy had planned to process the change in accordance with the station's Technical Specifications Bases Control Program and requirements of Title 10 of the Code of Federal Regulations, Part 50.59 (10CFR50.59), "Changes, tests and experiments," following the issuance of the safety evaluation report. However, the staff requested to approve the change as part of the license application.

These corrections are administrative in nature and are provided for clarification. The determination of no significant hazards considerations as documented in the

December 19, 2001, license application is unaffected by these corrections and remain bounding.

This submittal contains no regulatory commitments.

I declare under penalty of perjury that the foregoing is true and correct. Executed on December 6, 2001.

Very truly yours,



Glenn R. Ashley
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GRA/dwb
Attachments/enclosures

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Attachment 1

Corrections to License, Technical Specifications and COLR Pages

Corrections to License, Technical Specifications and COLR Pages

The following changes are provided to correct minor editorial discrepancies between some of the technical specification pages submitted with the license application and the official copy maintained by the NRC (i.e., the authority file). A brief discussion is provided for each discrepancy and corrected pages are provided where necessary.

In addition, the following other minor corrections/clarifications are included: 1) editorial corrections to two of the technical specification pages, 2) a correction to the title of Core Operating Limits Report (COLR) Figure 2, and 3) corrections to the list of Operating License/Technical Specifications changes on page 13 of 16 of the attachment to the license application. Each item is discussed and corrected pages are provided where necessary.

License Page 3

Paragraph (4) - The NRC authority file contains no comma after 70; therefore, the comma has been deleted.

Paragraph (6) - The authority file contains a comma following the word "possess" therefore, a comma has been inserted.

Paragraph c. - The lower case "c" has been changed to an upper case "C" to be consistent with the authority file.

Paragraph c. (2) - Since it is impossible to predict the next sequential amendment number when the staff issues this amendment, "226" has been deleted following "Amendment No." Also, subsequent to submittal of the license amendment request on December 19, 2000, the wording in the second sentence of this section changed from "EOI" to "The licensee." The wording has been revised accordingly. Additionally, the Amendment number and date have been removed from the left margin per the staff's request. That information is used internally by Entergy and does not appear on the authority file copy.

A corrected page is enclosed.

Technical Specification Page 1-1, Definition 1.3

The license application contained a revision to change the definition of RATED THERMAL POWER from 2815 mwt to 3026 MWt. It was noted that "mwt" was changed to "MWt." The authority file already contains the correct nomenclature of "MWt."

Therefore, a corrected page is not enclosed because the proposed technical specification page was correct as submitted. Only the marked up page and the explanation in the attachment was incorrect.

Technical Specification Page 3/4 1-25

In order to be consistent with the technical specification format, the word "operable" should be presented in all caps each time it is used. Therefore, the word "operable" is revised to "OPERABLE" in step 3.1.3.6 a. of the Limiting Condition for Operation and step a.2.a) of the ACTION.

A corrected page is enclosed.

Technical Specification Page 3/4 1-26

The word "Inoperable" should not be capitalized in step a.2.b) located at the top of the page; therefore, "Inoperable" is revised to "inoperable."

A corrected page is enclosed.

Technical Specification Page 3/4 3-17

Item 6.b, Allowable Value - the word "between" was inadvertently omitted prior to 5.111%. The allowable value has been corrected to read "between 5.111% and 6.889% indicated level."

A corrected page is enclosed.

Technical Specification Page 3/4 5-7

Surveillance Requirement 4.5.4 - The authority file indicates the word "demonstrated" is spelled correctly. Entergy's electronic file copy is missing the letter "r." It has been corrected. Since the authority file indicates the word is spelled correctly, the change bar has been removed from the right margin opposite the word demonstrated.

A corrected page is enclosed.

Core Operating Limits Report, Figure 2

The phrase WITH BOTH CEACs INOPERABLE was inadvertently added to the end of the title. The only change to the title was intended to be insertion of the word INWARD between AFTER and CEA. The title should read REQUIRED POWER REDUCTION AFTER INWARD CEA DEVIATION. The title has been corrected.

A corrected page is enclosed.

Page 13 of 16 of the Attachment to 2CAN120001

The following changes are made to the list of Operating License/Technical Specifications changes. The following two items (i.e., bullet numbers 7 and 8 of the list) should not appear in the list because they are actually changes related to the COLR, not Operating License/Technical Specifications changes:

- Modify the Moderator Temperature Coefficient limit consistent with the accident analysis.
- Modify the linear heat rate limit consistent with the accident analysis.

Additionally, the following item should be added to the list of bullet items. It was discussed in other portions of the attachment to letter 2CAN120001; however, it was inadvertently omitted from the list on page 13 of 16:

- The refueling water tank low level trip setpoint and allowable value at the recirculation action signal setpoint, is revised to eliminate redundant requirements for both volume and indicated level, leaving indicated level as the controlling requirement.

A corrected page is not enclosed.

Enclosure to Attachment 1 of Letter 2CAN120106

**Corrected Pages for Proposed Revisions to License, Technical Specifications and COLR
(6 pages)**

- (4) EOI, pursuant to the Act and 10 CFR Parts 30, 40 and 70 to receive, possess and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
- (5) EOI, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive possess and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (6) EOI, pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This amended license shall be deemed to contain and is subject to conditions specified in the following Commission regulations in 10 CFR Chapter I; Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

EOI is authorized to operate the facility at steady state reactor core power levels not in excess of 3026 megawatts thermal. Prior to attaining this power level EOI shall comply with the conditions in Paragraph 2.C.(3).

(2) Technical Specifications

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

Exemptive 2nd paragraph of 2.C.2 deleted per Amendment 20, 3/3/81.

(3) Additional Conditions

The matters specified in the following conditions shall be completed to the satisfaction of the Commission within the stated time periods following issuance of the license or within the operational restrictions indicated. The removal of these conditions shall be made by an amendment to the license supported by a favorable evaluation by the Commission.

2.C.(3)(a) Deleted per Amendment 24, 6/19/81.

REACTIVITY CONTROL SYSTEMS

REGULATING AND GROUP P CEA INSERTION LIMITS

LIMITING CONDITION FOR OPERATION

3.1.3.6 The regulating CEA groups and Group P CEAs shall be maintained within the following limits:

a. One or more CEACs OPERABLE:

1. The regulating CEA groups and Group P CEAs shall be limited to the withdrawal sequence and to the insertion limits specified in the CORE OPERATING LIMITS REPORT. CEA insertion between the Long Term Steady State Insertion Limits and the Transient Insertion Limit is restricted to:

a) ≤ 5 Effective Full Power Days per 30 Effective Full Power Day interval, and

b) ≤ 14 Effective Full Power Days per calendar year.

2. CEA insertion between the Short Term Steady State Insertion Limit and the Transient Insertion Limit shall be restricted to ≤ 4 hours per 24 hour interval.

b. Both CEACs inoperable:

Regulating CEA Group 6 may be inserted no further than 127.5 inches withdrawn which is the Transient Insertion Limit when both CEACs are inoperable. All other CEAs must be maintained fully withdrawn.

APPLICABILITY: MODES 1* and 2*#

ACTION:

a. With the regulating CEA groups or Group P CEAs inserted beyond the Transient Insertion Limit, except for surveillance testing pursuant to Specification 4.1.3.1.2, within two hours of exceeding the Transient Insertion Limit either:

1. Restore the regulating CEA groups or Group P CEAs to within the limits, or

2. Reduce THERMAL POWER as follows:

a) One or more CEACs OPERABLE:

1) Reduce THERMAL POWER to less than or equal to that fraction of RATED THERMAL POWER which is allowed by the CEA group position specified in the CORE OPERATING LIMITS REPORT, or

2) Be in at least HOT STANDBY within 8 hours of exceeding the Transient Insertion Limit.

* See Special Test Exceptions 3.10.2 and 3.10.4

With $K_{eff} \geq 1.0$.

REACTIVITY CONTROL SYSTEMS

LIMITING CONDITION FOR OPERATION

ACTION: (Continued)

b) Both CEACs inoperable:

Be in at least HOT STANDBY within 8 hours of exceeding the Transient Insertion Limit.

- b. With the regulating CEA groups or Group P CEAs inserted between the Long Term Steady State Insertion Limit and the Transient Insertion Limit for intervals > 5 EFPD per 30 EFPD interval or > 14 EFPD per calendar year, either:
1. Restore the regulating groups or Group P CEAs to within the Long Term Steady State Insertion Limit within two hours, or
 2. Be in at least HOT STANDBY within the next 6 hours.
- c. With the regulating CEA groups or Group P CEAs inserted between the Short Term Steady State Insertion Limit and the Transient Insertion Limit for intervals > 4 hours per 24 hour interval, operation may proceed provided any subsequent increase in thermal power is restricted to $\leq 5\%$ of rated thermal power per hour.

SURVEILLANCE REQUIREMENTS

- 4.1.3.6 The position of each regulating CEA group and Group P CEAs shall be determined to be within the Transient Insertion Limits at least once per 12 hours except during time intervals when the PDIL Alarm is inoperable, then verify the individual CEA positions at least once per 4 hours. The accumulated times during which the regulating CEA groups or Group P CEAs are inserted beyond the Long Term Steady State Insertion Limit or the Short Term Steady State Insertion Limit but within the Transient Insertion Limit shall be determined at least once per 24 hours.

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
4. MAIN STEAM AND FEEDWATER ISOLATION (MSIS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Steam Generator Pressure - Low	≥ 751 psia (2)	≥ 738.6 psia (2)
5. CONTAINMENT COOLING (CCAS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Containment Pressure - High	≤ 18.3 psia	≤ 18.490 psia
c. Pressurizer Pressure - Low	≥ 1650 psia	≥ 1618.9 psia
6. RECIRCULATION (RAS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Refueling Water Tank - Low	6.0 ± 0.5% indicated level	between 5.11% and 6.88% indicated level
7. LOSS OF POWER		
a. 4.16 kv Emergency Bus Undervoltage	(4)	2300 ± 699 volts with a 0.64 ± 0.34 second time delay
b. 460 volt Emergency Bus Undervoltage	423 ± 2.0 volts with an 8.0 ± 0.5 second time delay	423 ± 4.0 volts with an 8.0 ± 0.8 second time delay

EMERGENCY CORE COOLING SYSTEMS

REFUELING WATER TANK

LIMITING CONDITION FOR OPERATION

3.5.4 The refueling water tank shall be OPERABLE with:

- a. An available borated water volume of between 384,000 and 503,300 gallons
- b. Between 2500 and 3000 ppm of boron,
- c. A minimum solution temperature of 40°F, and
- d. A maximum solution temperature of 110°F

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the refueling water tank inoperable, restore tank to OPERABLE status within 1 hour or be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.5.4 The RWT shall be demonstrated OPERABLE:

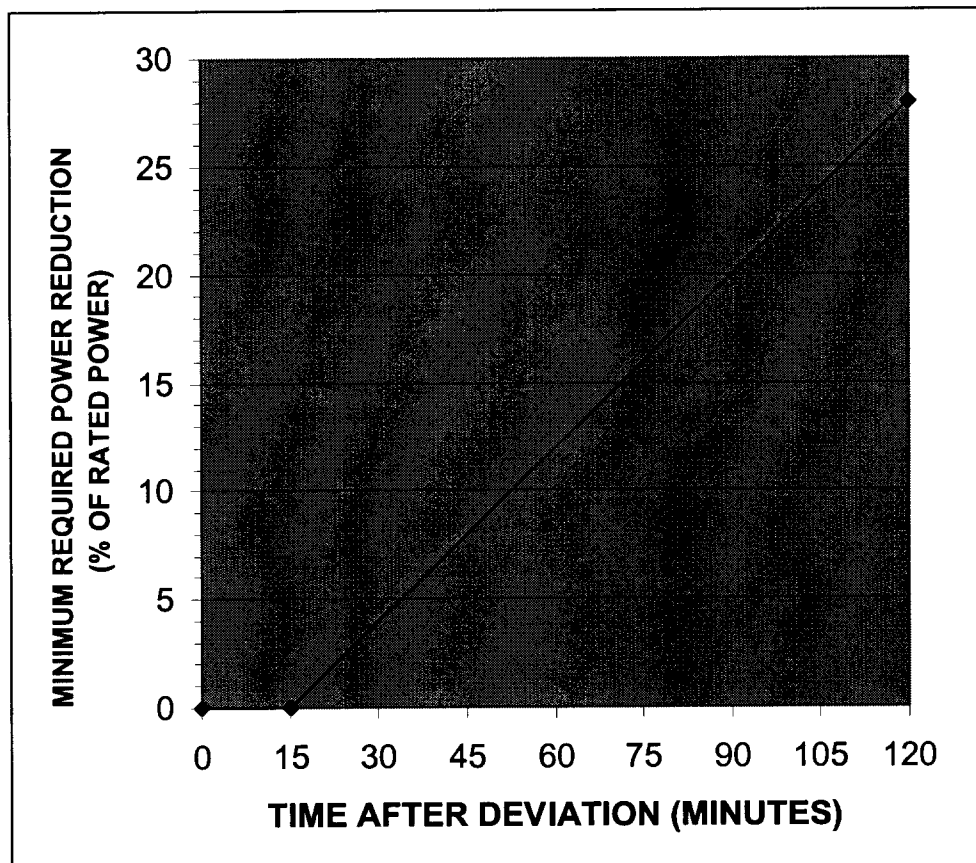
- a. At least once per 7 days by:
 1. Verifying the contained borated water volume in the tank, and
 2. Verifying the boron concentration of the water.
- b. At least once per 24 hours by verifying the RWT temperature.

Existing Figure 2 of the Cycle 15 COLR will be replaced with the following figure:

FIGURE 2

REQUIRED POWER REDUCTION AFTER INWARD CEA DEVIATION *

*When core power is reduced to 60% of rated power per this limit curve, further reduction is not required



Attachment 2

Revision to Technical Specification Bases Section 3/4.5.4

Revision to Technical Specification Bases Section 3/4.5.4

In response to a request for additional information from the NRC staff, Entergy submitted a letter dated October 31, 2001 (2CAN100102). In the response to NRC Question 1, Entergy informed the staff that the following sentence would be added to refueling water tank technical specification bases section 3/4.5.4:

An RWT indicated level between 100% and 91.7%, in combination with the RAS {recirculation actuation signal} setpoint, ensures that the analysis assumptions with respect to available borated water volume are maintained.

Although the proposed change to bases section 3/4.5.4 was discussed, it was not submitted for approval. Entergy had planned to process the change in accordance with the station's Technical Specifications Bases Control Program and requirements of Title 10 of the Code of Federal Regulations, Part 50.59 (10CFR50.59), "Changes, tests and experiments," following the issuance of the safety evaluation report. However, during a teleconference on November 26, 2001, the staff requested submittal of the proposed bases page so the bases change would be approved as part of the license application.

The information has been added to bases section 3/4.5.4 (page 3/4 5-3) as the last sentence of paragraph 1 on bases page 3/4 5-3. The proposed page is enclosed. A marked up change is also enclosed for information.

Future changes to section 3/4.5.4 will be made in accordance with the Technical Specifications Bases Control Program and pursuant to 10CFR50.59.

Enclosure to Attachment 2 of Letter 2CAN120106

**Proposed Change to Technical Specification Bases Section 3/4.5.4
(1 page)**

EMERGENCY CORE COOLING SYSTEMS

BASES

The available water volume limits represent the analytically assumed maximum and minimum volume of water that can be transferred from the refueling water tank to containment via the emergency core cooling system and containment spray before pump suction is switched to the sump. An RWT indicated level between 100% and 91.7%, in combination with the RAS setpoint, ensures that the analysis assumptions with respect to available borated water volume are maintained.

The limits on water volume and boron concentration of the boric acid sources, when mixed with the trisodium phosphate, ensures a long term pH value of ≥ 7.0 for the solution recirculated within containment after a LOCA. This pH limit minimizes the evolution of iodine and helps to inhibit stress corrosion cracking of austenitic stainless steel components in containment during the recirculation phase following an accident.

EMERGENCY CORE COOLING SYSTEMS

BASES

The available contained water volume limits represent the analytically assumed maximum and minimum volume of water that can be transferred from the refueling water tank to containment via the emergency core cooling system and containment spray before pump suction is switched to the sump. Includes an allowance for water not usable because of tank discharge line location or other physical characteristics. An RWT indicated level between 100% and 91.7%, in combination with the RAS setpoint, ensures that the analysis assumptions with respect to available borated water volume are maintained.

The limits on contained water volume and boron concentration of the boric acid sources, when mixed with the trisodium phosphate, ensures a long term pH value of ≥ 7.0 for the solution recirculated within containment after a LOCA. This pH limit minimizes the evolution of iodine and helps to inhibit stress corrosion cracking of austenitic stainless steel components in containment during the recirculation phase following an accident.