Mr. C. Randy Hutchinson
Vice President, Operations ANO
Entergy Operations, Inc.
1448 S. R. 333
Russellville, AR 72801

April 21 999

SUBJECT: ARKANSAS NUCLEAR ONE, UNIT NO. 2 - ISSUANCE OF AMENDMENT RE: DIESEL GENERATOR LOAD REJECT SURVEILLANCE REQUIREMENTS (TAC NO. MA1718)

Dear Mr. Hutchinson:

The Commission has issued the enclosed Amendment No. 204 to Facility Operating License No. NPF-6 for the Arkansas Nuclear One, Unit No. 2. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated April 30, 1998 (2CAN049802).

The amendment revises the single largest post-accident load capable of being supplied by the diesel generators and relocates this value to the Bases for TS Surveillance 4.8.1.1.2.c.3. TS Surveillance 4.8.1.1.2.c.3 has been revised to refer to "the single largest post-accident load" rather than a specific numerical value for diesel generator load reject testing. This change is consistent with the guidance provided in NUREG-1432, "Improved Standard Technical Specifications for 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,
original signed by:

M. Christopher Nolan, Project Manager, Section 1
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-368

Enclosures: 1. Amendment No. 204 to NPF-6
2. Safety Evaluation

cc w/encls: See next page

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

April 21, 1999

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Vice President, Operations ANO
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cc:

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

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-368

ARKANSAS NUCLEAR ONE, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 204
License No. NPF-6

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Entergy Operations, Inc. (the licensee) dated April 30, 1998, 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 Facility Operating License No. NPF-6 is hereby amended to read as follows:

   2. Technical Specifications

      The Technical Specifications contained in Appendix A, as revised through amendment No. 204 , are hereby incorporated in the 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 to be implemented within 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert A. Gramm, Chief, Section 1
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: April 21, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 204

FACILITY OPERATING LICENSE NO. NPF-6

DOCKET NO. 50-368

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove	Insert
3/4 8-3	3/4 8-3
B 3/4 8-2	B 3/4 8-2

SURVEILLANCE REQUIREMENTS (Continued)

c. At least once per 18 months during shutdown by:

1. Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service.

2. Verifying that the automatic sequence time delay relays are OPERABLE at their setpoint ± 10% of the elapsed time for each load block.

3. Verifying the generator capability to reject a load of greater than or equal to its associated single largest post-accident load, and maintain voltage at 4160 ± 500 volts and frequency at 60 ± 3 Hz.

4. Verifying the generator capability to reject a load of 2850 Kw without exceeding 75% of the difference between nominal speed and the overspeed trip setpoint, or 15% above nominal, whichever is lower.

5. Simulating a loss of offsite power by itself, and:

a) Verifying de-energization of the emergency busses and load shedding from the emergency busses.

b. Verifying the diesel starts from a standby condition on the undervoltage auto-start signal, energizes the emergency busses with permanently connected loads, energizes the auto-connected shutdown loads through the time delay relays and operates for ≥ 5 minutes while its generator is loaded with the shutdown loads.

6. Verifying that on a Safety Injection Actuation Signal (SIAS) actuation test signal (without loss of offsite power) the diesel generator starts on the auto-start signal and operates on standby for ≥ 5 minutes.

TS 4.8.1.2.c.3 demonstrates the EDG load response characteristics and capability to reject the largest single load without exceeding predetermined voltage and frequency while maintaining a specified margin to the overspeed trip. For ANO-2, the single load for each EDG is the Service Water pump, rated at 800 HP (636.9 KW).

Containment electrical penetrations and penetration conductors are protected by either de-energizing circuits not required during reactor operation or by demonstrating the OPERABILITY of primary and backup overcurrent protection circuit breakers during periodic surveillance. The 480 volt air frame protective devices utilize electro-mechanical overcurrent elements which are mounted on the protective device and, in some instances, protective relays to trip the protective device. Actuation of the overcurrent element or relay will trip the protective device. The molded case protective devices utilize magnetic or thermal-magnetic overcurrent elements which are contained in the protective device. Actuation of each overcurrent element will trip the protective device.

TS 3.8.2.3 Action "b" requires the performance of SR 4.8.2.3.a.1 within one hour and at least once per 8 hours thereafter for a loss of one of the required full capacity chargers. If any Category A limit in Table 4.8-2 is not met while a charger is inoperable, the associated battery bank shall be declared inoperable and ACTION "a" entered. The Category A limits in Table 4.8-2 specify the normal limits for electrolyte level, float voltage and specific gravity for each designated pilot cell. When TS 3.8.2.3 ACTION "b" is entered without the associated battery bank being on float (i.e. charger not connected to the bus), pilot cell float voltage is determined by measuring pilot cell voltage. The term "full capacity charger" as used in TS 3.8.2.3 is defined as a charger that is capable of supplying an output of ≥ 300 amperes.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 204 TO

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 April 30, 1998 (2CAN049802), Entergy Operations, Inc. (the licensee), submitted a request for changes to the Arkansas Nuclear One, Unit No. 2 (ANO-2), Technical Specifications (TS). The requested changes would revise Surveillance Requirement (SR) 4.8.1.1.2.c.3, "Diesel Generator Load Rejection Testing," to increase the value of the single largest post-accident load capable of being supplied by the diesel generators and relocate this value to the associated TS Bases. The proposed changes are based on the guidance contained in the "Improved Standard Technical Specifications for Combustion Engineering Plants," NUREG-1432, Revision 1, dated April 1995.

2.0 EVALUATION

The licensee stated that each emergency diesel generator (EDG) is provided with an engine overspeed trip to prevent damage to the engine. The surveillance test required by SR 4.8.1.1.2.c.4 demonstrates the EDG's capability to reject a full load without overspeed tripping or exceeding predetermined speed limits. The surveillance test required by SR 4.8.1.1.2.c.3 demonstrates the EDG's load response characteristics and capability to reject the largest single load without exceeding predetermined voltage and frequency and while maintaining a specified margin to the overspeed trip. For the ANO-2 EDGs, the largest single post-accident load is the associated service water (SW) pump. The current requirements for EDG load reject testing are specified in SR 4.8.1.1.2.c.3, which reads as follows:

> Verifying the generator capability to reject a load of ≥596 kw and maintain voltage at 4160 ± 500 volts and frequency at 60 ± 3 Hz.

Currently, SR 4.8.1.1.2.c.3 requires the licensee to verify the generator capability to reject a load of greater than or equal to 596 kilowatts (kW). As a result of a review of the calculation associated with the ANO-2 EDGs, it was discovered that the value currently specified in SR 4.8.1.1.2.c.3 (596 kW) represented the horsepower rating of the SW pump, assuming

100 percent efficiency. A revised calculation, utilizing design SW flow, the SW pump horsepower rating and manufacturer's stated efficiency of 92.5 percent, determined the appropriate EDG load to be 636.9 kW. The proposed change to SR 4.8.1.1.2.c.3 will require the licensee to verify the generator capability to reject a load greater than or equal to its associated single largest post-accident load rather than a specific kilowatt load value and maintain voltage at 4160 ± 500 volts and frequency 60 ± 3 Hz. The specific kilowatt value corresponding to the single largest post-accident load will be relocated to TS Bases 3/4.8, which is consistent with the requirements of NUREG-1432 for EDG load rejection testing. The proposed change for SR 4.8.1.1.2.c.3 reads as follows:

> Verifying the generator capability to reject a load of greater than or equal to its associated single largest post-accident load, and maintain voltage at 4160 ± 500 volts and frequency at 60 ± 3 Hz.

The proposed change for TS Bases 3/4.8 incorporates the following statement:

> TS 4.8.1.1.2.c.3 demonstrates the EDG load response characteristics and capability to reject the largest single load without exceeding predetermined voltage and frequency while maintaining a specified margin to the overspeed trip. For ANO-2, the single load for each EDG is the Service Water pump, rated at 800 HP (636.9 kW).

On the basis of its review, the staff finds the modified kilowatt loading of the single largest post-accident load (i.e., SW pump) and relocation of this value from TSs to the Bases section is primarily an administrative change that does not alter the requirements set forth in the existing TSs for EDG load reject testing. Overall, the proposed change will allow the licensee to make revisions under the 10 CFR 50.59 change process to accurately reflect the conservative value for the single largest post-accident load to comply with the requirement of the TS surveillance. In addition, this change is consistent with the guidance provided in NUREG-1432, "Improved Standard Technical Specifications for Combustion Engineering Plants." Therefore, the staff finds that the proposed TS change is 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

The amendment 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 (63 FR 56241, October 21, 1998). 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.

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: A. Pal

Date: April 21, 1999