February 17, 1995

Mr. Jerry W. Yelverton
Vice President, Operations ANO
Entergy Operations, Inc.
Route 3 Box 137G
Russellville, Arkansas 72801

SUBJECT: ISSUANCE OF AMENDMENT NO. 176 TO FACILITY OPERATING LICENSE NO. DPR-51 - ARKANSAS NUCLEAR ONE, UNIT NO. 1 (TAC NO. M90627 AND M90740)

Dear Mr. Yelverton:

The Commission has issued the enclosed Amendment No. 176 to Facility Operating License No. DPR-51 for the Arkansas Nuclear One, Unit No. 1 (ANO-1). This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated August 30, 1994.

The amendment revises the TSs to address the installation of two battery chargers on each 125 vdc power train in lieu of the "swing" battery charger that is currently used.

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

Sincerely,

ORIGINAL SIGNED BY:
George Kalman, Senior Project Manager
Project Directorate IV-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-313

Enclosures: 1. Amendment No. 176 to DPR-51
2. Safety Evaluation

cc w/encls: See next page

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

February 17, 1995

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Vice President, Operations ANO
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Docket No. 50-313

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2. Safety Evaluation

cc w/encls: See next page

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214 South Morris Street
Oxford, Maryland 21654

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. DPR-51 is hereby amended to read as follows:

   2. Technical Specifications

      The Technical Specifications contained in Appendix A, as revised through Amendment No. 176 , 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.

FOR THE NUCLEAR REGULATORY COMMISSION

George Kalman, Senior Project Manager
Project Directorate IV-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment: Changes to the
Technical Specifications

Date of Issuance: February 17, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 176

FACILITY OPERATING LICENSE NO. DPR-51

DOCKET NO. 50-313

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

REMOVE PAGES	INSERT PAGES
56	56
57	57
100a	100a

3.7 Auxiliary Electrical Systems

Applicability

Applies to the auxiliary electrical power systems.

Objectives

To specify conditions of operation for plant station power necessary to ensure safe reactor operation and combined availability of the engineered safety features.

Specifications

3.7.1 The reactor shall not be heated or maintained above 200°F unless the following conditions are met (except as permitted by Paragraph 3.7.2):

A. Any one of the following combinations of power sources operable:

1. Startup Transformer No. 1 and Startup Transformer No. 2.

2. Startup Transformer No. 2 and Unit Auxiliary Transformer provided that the latter one is connected to the 22KV line from the switchyard rather than to the generator bus.

B. All 4160 V switchgear, 480 V load centers 480 V motor control centers and 120 V AC distribution panels in both of the ESAS distribution systems are operable and are being powered from either one of the two startup transformers or the unit auxiliary transformer.

C. Both diesel generator sets are operable each with:

1. a separate day tank containing a minimum of 160 gallons of fuel,

2. a separate emergency storage tank containing a minimum of 138 inches (20,000 gallons) of fuel,

3. a separate fuel transfer pump, and

4. a separate starting air compressor.

D. Both station batteries are operable and each is capable of supplying power to the 125V d-c distribution system. At least one battery charger associated with each station battery is operable.

E. At least 2 of 3 d-c control power sources to the 125V d-c switchyard distribution system are operable.

F. The off-site power undervoltage and protective relaying interlocks associated with required startup transformer power sources shall be operable per Table 3.5.1-1.

G. The selective load-shed features associated with Startup Transformer No. 2 shall be operable if selected for auto transfer.

3.7.2

A. The specifications in 3.7.1 may be modified to allow one of the following conditions to exist after the reactor has been heated above 200F. Except as indicated in the following conditions, if any of these conditions are not met, a hot shutdown shall be initiated within 12 hours. If the condition is not cleared within 24 hours, the reactor shall be brought to cold shutdown within an additional 24 hours.

B. In the event that one of the offsite power sources specified in 3.7.1.A (1 or 2) is inoperable, reactor operation may continue for up to 24 hours if the availability of the diesel generators is immediately verified.

C. Either one of the two diesel generators may be inoperable for up to 7 days in any month provided that during such 7 days the operability of the remaining diesel generator is demonstrated immediately and daily thereafter, there are no inoperable ESF components associated with the operable diesel generator, and provided that the two sources of off-site power specified in 3.7.1.A(1) or 3.7.1.A(2) are available.

D. Any 4160V, 480V, or 120V switchgear, load center, motor control center, or distribution panel in one of the two ESF distribution systems may be inoperable for up to 8 hours, provided that the operability of the diesel generator associated with the operable ESF distribution system is demonstrated immediately and all of the components of the operable distribution system are operable. If the ESF distribution system is not returned to service at the end of the 8 hour period, Specification 3.7.2.A shall apply.

E. With no operable battery charger associated with one station battery, operation is allowed to continue for a period of 8 hours provided at least one battery charger is operable on the opposite train, after which Specification 3.7.2.A shall apply.

F. One of the two station batteries and the associated distribution system may be inoperable for 8 hours provided that there are no inoperable safety related components associated with the remaining station battery which are redundant to the inoperable station battery and the operability of the diesel generator is verified immediately. If the battery is not returned to service at the end of the 8 hour period, Specification 3.7.2.A shall apply.

G. Two control power sources from the plant to the switchyard and the attendant distribution system may be inoperable for 8 hours, after which Specification 3.7.2.A shall apply.

H. If the requirements of Specification 3.7.1.G cannot be met, either:

(1) place all Startup Transformer No. 2 feeder breakers in "pull-to-lock" within 1 hour, restore the inoperable interlocks to operable status within 30 days, or submit within 30 days a Special Report pursuant to Specification 6.12.5 outlining the cause of the failure, proposed corrective action and schedule for implementation; or

(2) apply the action requirements of Table 3.5.1-1, Note 14.

e. Diesel fuel from the emergency storage tank shall be sampled and found to be within acceptable limits specified in Table 1 of ASTM D975-68 when checked for viscosity, water, and sediment.

5. Once every 31 days the pressure in the required starting air receiver tanks shall be verified to be ≥ 175 psig.

   Once every 18 months, the capacity of each diesel oil transfer pump shall be verified to be at least 10 gpm.

4.6.2 Station Batteries and Switchyard Batteries

1. The voltage, temperature and specific gravity of a pilot cell in each bank and the overall battery voltage of each bank shall be measured and recorded daily.

2. Measurements shall be made quarterly of voltage of each cell to the nearest 0.01 volt, of the specific gravity of each cell, and of the temperature of every fifth cell in each bank. The level of the electrolyte shall be checked and adjusted as required. All data, including the amount of water added to any cell, shall be recorded.

3. Once every 18 months, a performance discharge test shall be conducted in accordance with the manufacturer's instructions, the purpose of determining battery capacity.

4. Any battery charger which has not been loaded while connected to its 125V d-c distribution system for at least 30 minutes during every quarter shall be tested and loaded while connected to its bus for 30 minutes.

4.6.3 Emergency Lighting

The correct functioning of the emergency lighting system shall be verified once every 18 months.

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

ENTERGY OPERATIONS INC.

DOCKET NO. 50-313

ARKANSAS NUCLEAR ONE, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 176
License No. DPR-51

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

   A. The application for amendment by Entergy Operations, Inc. (the licensee) dated August 30, 1994, 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.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 176 TO

FACILITY OPERATING LICENSE NO. DPR-51

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNIT NO. 1

DOCKET NO. 50-313

1.0 INTRODUCTION

Entergy Operations Inc., by letter dated August 30, 1994, requested a revision to the Technical Specifications for Arkansas Nuclear One, Unit 1, (ANO-1). The proposed revision requires changes to Specifications 3.7.1.D, 3.7.2.E and 4.6.2.4 in order to facilitate a modification to the ANO-1 vital 125 volt dc power system. Specification 3.7.1.B was also revised in order to be consistent with the associated Action Statement 3.7.1.D.

In the proposed modification, the licensee will install two full capacity battery chargers on each power train, replacing the existing three station battery chargers for the two power trains. The licensee will replace the existing ANO-1 inverters with new inverters and add a "swing" inverter per power train to allow for greater flexibility during maintenance periods. Due to the different design of the new inverters, the primary source of power to the vital 120 instrument electrical system will be changed from rectified AC supply to inverted vital 125 volt DC supplied via the new battery chargers.

Due to manpower constraints and support system operability requirements during the 1R12 refueling outage, it is anticipated that the licensee will implement the modification in two steps. The green power train of vital instrument electrical power will be modified during 1R12. The modification will be completed on the red train during 1R13. During the interim period, the red train system will retain the current inverters and battery chargers. The swing battery charger will be modified to prevent its use on the green train. This interim configuration is similar to the completed modification in that both trains will have two battery chargers available for each train.

The staff has reviewed the proposed changes and provides the following evaluation.

2.0 EVALUATION

Change 1: Revise Specification 3.7.1.D to require at least one battery charger associated with each station battery to be operable.

The licensee contends that the subject change is necessary in order to reflect the changes in the electrical system configuration following the completion of the interim and post modification.

The existing Limiting Conditions for Operations (LCO) 3.7.1.D for Unit 1, specifies that at least two of the three battery chargers must be energized and operable for normal plant operation. The 1E 125 VDC system consists of two independent, physically and electrically separated 125 volt batteries designated D06 and D07 which provide DC power to the 125 VDC control centers and distribution panels. Three battery chargers are supplied to the two power trains with two chargers serving as normal supplies to the DC control centers. The third battery charger serves as a standby or "swing" battery charger to one of the two DC power trains.

The staff agrees that the subject change to specify one battery charger to be operable per dc power train is administrative in nature. The original intent of the specification, that is, to have one battery charger operable for each battery, has not been affected by the subject change. Therefore, the subject change is acceptable.

Change 2: Revise Specification 3.7.2.E to allow continued operation for a period of 8 hours when only one battery charger on one vital 125 volt DC train is operable.

The licensee requests the change in order to clarify the conditions necessary for allowable outage time (AOT) for the interim and post modification.

The existing specification states that two battery chargers may be inoperable for 8 hours after which Specification 3.7.2.A goes in effect. It is implied based on the present plant configuration and Specification 3.7.1.D that at least one battery charger must be operable and in service on the opposite electrical train. The change revises the wording of the specification so that the AOT, i.e., the 8 hour period, is permitted when the two new battery chargers associated with one station battery are inoperable provided at least one battery charger is operable on the opposite train.

The staff finds that the subject change is consistent with the existing Technical Specifications requirement. Given no source of charging power to the affected battery, the AOT period is permitted only if one battery charger is operable on the opposite train. If Change 1 above is approved, the subject change is necessary for editorial and administrative purposes. Since the subject change does not affect the original intent of the specification, we recommend that Change 2 be approved.

Change 3: Revise Specification 4.6.2.4 to delete the specific requirement to load the third battery charger while connected to each bus for at least 30 minutes every quarter.

The licensee requests that the change be made since the swing battery charger will be removed upon completion of the interim and post modification to the electrical system.

The existing specification requires that the third battery charger, which is configured to operate as a swing unit to serve one of the two DC power trains, to be loaded while connected to each bus for at least 30 minutes every quarter. The remaining text of the specification requires that any battery charger which has not been loaded in the quarter shall be tested and loaded while connected to its bus for 30 minutes.

Given the elimination of the swing battery charger function by the subject modification the staff agrees that the change is appropriate. The remaining text of the specification ensures that all battery chargers are connected to their associated DC busses and loaded for 30 minutes each quarter. Since the revised specification is consistent with the original surveillance requirement with no reduction in testing frequency or acceptance criteria, the change is acceptable.

Change 4: Revise Specification 3.7.1.B to require all 120 volt vital AC distribution panels to be operable and powered from either one of the two startup transformers or the unit auxiliary transformer.

The licensee requests that the change be granted in order to make the LCO consistent with the associated Action Statement.

The existing specification does not address the operability of the 120 volt vital AC distribution system. However, the associated Action Statement, Specification 3.7.2.D, specifies an allowable outage time of 8 hours if any 120 volt distribution panel is inoperable, provided that the operability of the diesel generator associated with the operable emergency safeguard features distribution system is immediately demonstrated and all components of the distribution system are operable.

The staff finds that the change to include the 120 volt vital AC distribution panels in the scope of Specification 3.7.1.B to be a conservative and prudent clarification and it adds consistency between the LCO and its associated Action Statement. Therefore, the subject change is acceptable.

3.0 TECHNICAL CONCLUSION

We have reviewed the licensee's submittal and have concluded that the subject changes do not reduce any of the testing requirements, acceptance criteria or the original intent in the subject Technical Specifications. Therefore, we find that the subject changes are acceptable.

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 (60 FR 3439). 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 the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: R. Jenkins

Date: February 17, 1995