OCTOBER 27 1978

Docket No.: 50-313

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Arkansas Power & Light Company
ATTN: Mr. William Cavanaugh, III
Executive Director, Generation and Construction Department
P. O. Box 551
Little Rock, Arkansas 72203

Gentlemen:

The Commission has issued the enclosed Order for Modification of License which amends Facility Operating License No. DPR-51 for Arkansas Nuclear One - Unit No. 1.

This Order requires the implementation of certain modifications to the electrical power systems by no later than October 31, 1978, and allows operation of ANO-1 until those modifications are complete.

A copy of this Order is being filed with the Office of the Federal Register for publication.

Sincerely,

Original Signed by

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Enclosure:
Order for Modification of License

cc w/enclosure: See next page

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
ARKANSAS POWER AND LIGHT COMPANY	)	Docket No. 50-313
	)	
Arkansas Nuclear One - Unit No. 1	)	

ORDER FOR MODIFICATION OF LICENSE

I.

The Arkansas Power & Light Company (the licensee), is the holder of Facility Operating License No. DPR-51 which authorizes the operation of the nuclear power reactor known as Arkansas Nuclear One - Unit No. 1 (the facility or ANO-1), at steady state power levels not in excess of 2568 megawatts thermal (rated power). The facility consists of a Babcock & Wilcox Company (B&W) designed pressurized water reactor (PWR) located at the licensee's site in Pope County, Arkansas.

II.

During our review of the electrical power systems at the ANO-1 facility which experienced an electrical trip on September 16, 1978, a question arose concerning the capability of the offsite power systems to handle the emergency and house loads in the event of a loss of coolant accident (LOCA). The licensee confirmed by letter dated October 25, 1978 that an undervoltage condition would be created in the startup transformers which would provide a degraded voltage to engineered safety features.

The concern is that in the event of a LOCA during which the startup transformer receives the house loads and the starting loads of the engineered safety features, the loads cause a voltage reduction. The plant electrical systems are capable of handling the normal plant loads and engineered safety feature loads once started. By the letter dated October 25, 1978, the licensee indicated that this event would result in all safety loads transferring to the diesel generators. However, after later discussions with the licensee's staff, we concluded and the licensee agreed that such an event would not result in the safety loads transferring to the diesel generators but would result in all safety loads remaining on the startup transformers with degraded voltage. Although there is margin in the sizing of equipment and the conditions of operation of such equipment, such a situation could result in blown fuses in engineered safety feature circuits which could result in disabling these safety loads in the event of a LOCA. In that case, those particular components would not perform even if the voltage subsequently returned to normal.

By the letter dated October 25, 1978, supplemented by letter dated October 27, 1978, the licensee has proposed facility modification and associated tests which would alleviate the above possible situation. Further, the licensee committed to implementing the modifications by October 31, 1978, subject to our approval.

The modification involves the connection of the load sequence circuitry used for loading the diesel generators such that they will also sequence safety loads onto the startup of transformers thereby alleviating the undervoltage situation. The licensee has proposed tests of the proposed modifications which would demonstrate the operability of the system yet not require the shutdown of the plant.

We have completed our review of the licensee's proposed facility modifications and find that they would correct an undervoltage situation of the startup transformers during the LOCA. We find that the proposed test of the proposed modifications will verify the operability of the modifications. We find the licensee's commitment to complete the modifications and tests to be reasonable and consistent with the time required to prepare designs, conduct reviews, prepare procedures and to perform the modifications and tests. Therefore, we conclude, based on our review, that the proposed facility modifications, tests and commitment of implementation are acceptable.

Until these modifications are completed the current design of the electrical power system may not be wholly in conformance with General Design Criterion (GDC) 17 of Appendix A to 10 CFR Part 50.

This was discussed with the licensee and by letter dated October 27, 1978, the licensee has proposed an interim modification which would alleviate the concern for degraded voltage at ANO-1 engineered safety features until completion of the proposed modifications and testing as proposed by letters dated October 25 and 27, 1978. These interim modifications remove one train of engineered safety feature equipment from the unit auxiliary transformer and connect it to the startup transformer shared with Unit 2. The shared transformer would be locked out from providing power to Unit 2 and thus dedicated to Unit 1 for this interim period.

The licensee has stated that by assigning the shared startup transformer to one train of Unit 1 engineered safety features equipment, no unacceptable degraded voltage conditions would occur as a result of a safety injection signal and main generation trip which are the loads imposed in the event of a LOCA.

We have reviewed the possible consequences of operating ANO-1 during the period until the facility modifications and tests are completed. We have reviewed the proposed interim modifications and find that they would alleviate the concern for degraded voltage at the startup transformers and are acceptable.

Therefore, based on our review we find this arrangement will provide an adequate power supply for safety systems at ANO-1 and that therefore continued operation for the period of time necessary to perform the modifications will not endanger life or property or the common defense and security.

The NRC staff believes that under the circumstances, the modifications proposed by the licensee are appropriate and should be confirmed by NRC Order.

III.

Copies of the following documents are available for inspection at the Commission's Public Document Room at 1717 H Street, N.W., Washington, D.C. 20555, and are being placed in the Commission's local public document room at Arkansas Polytechnic College, Russellville, Arkansas:

1. Letter from Mr. Daniel H. Williams (AP&L) to Mr. R. W. Reid (NRC), dated October 25, 1978; and

2. Letters from Mr. Daniel H. Williams (AP&L) to Mr. R. W. Reid (NRC), dated October 27, 1978.

IV.

Accordingly, pursuant to the Atomic Energy Act of 1954, as amended, and the Commission's Rules and Regulations in 10 CFR Parts 2 and 50, IT IS ORDERED THAT Facility Operating License No. DPR-51 is hereby amended as follows:

1. By October 31, 1978, the licensee shall:

   a. modify the electrical power systems such that the load sequence circuitry used for loading the diesel generators will also sequence safety loads onto the startup transformers in the manner described by the letter dated October 25, 1978; and

   b. provide test of the modifications as proposed by letter dated October 27, 1978, to assure operability of the proposed modifications.

2. Starting immediately upon receipt of this Order, and until the modifications set forth in Paragraph 1 are completed, the licensee shall provide interim modifications as proposed by letter dated October 27, 1978.

FOR THE NUCLEAR REGULATORY COMMISSION

Victor Stello, Jr., Director
Division of Operating Reactors
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland,
this 27thday of October 1978.