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Docket No. 50-313

Mr. William Cavanaugh, III
Senior Vice President
Energy Supply
Arkansas Power & Light Company
P. O. Box 551
Little Rock, Arkansas 72203

Dear Mr. Cavanaugh:

Attached is our Safety Evaluation Report on NUREG-0737 Item II.E.1.2
Emergency Feedwater (EFW) Automatic Initiation and Flow Indication
for Arkansas Nuclear One, Unit No. 1 (ANO-1).

We have reviewed the information which you have submitted on Item
II.E.1.2 and your proposed EFW upgrade and found that ANO-1 meets
the current long term safety requirements.

Therefore, we consider NUREG-0737 Item II.E.1.2 is resolved for ANO-1.

Sincerely,

Original signed by

John F. Stolz, Chief
Operating Reactors Branch #4
Division of Licensing

Enclosure:
Safety Evaluation

cc w/enclosure:
See next page

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OFFICE	ORB#4:DL	C-ORB#4:DL					
SURNAME	GVissing;cf	JStolz					
DATE	7/21/82	7/24/82					

Arkansas Power & Light Company

cc w/enclosure(s):

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SAFETY EVALUATION
ARKANSAS NUCLEAR ONE - UNIT ONE
AUXILIARY FEEDWATER
AUTOMATIC INITIATION AND FLOW INDICATION
ACTION PLAN ITEM II.E.1.2

INTRODUCTION AND SUMMARY

To improve the reliability of Auxiliary Feedwater Systems (AFWS) at pressurized water reactor (PWR) facilities, the staff is requiring licensees to upgrade the system where necessary to ensure safety grade automatic initiation and flow indication. The criteria for this upgrading are contained in NUREG-0737 (Clarifications of TMI Action Plan Requirements), Section II.E.1.2.

The system known at Arkansas Nuclear One-Unit 1 (ANO-1) as the Emergency Feedwater System (EFW), and the Emergency Feed Initiation and Control (EFIC) logic designs were evaluated for the NRC by Franklin Research Center (FRC) as part of a technical assistance contract program. The results of the FRC evaluation are reported in the attached Technical Evaluation Report (TER - C5257 - 306).

Based on our review of the FRC TER, we conclude that the AFW automatic initiation and flow indication designs are acceptable.

EVALUATION

The attached TER provides a technical evaluation of the electrical, instrumentation, and control design aspects of the ANO-1 AFWS with regard to automatic initiation and flow indication. As noted in the TER, only status light indication is provided for the EFIC system when in a reset (bypass) mode following system initiation, that there is no provision for annunciation for this mode. Being that there is no effect on the trip logic if the trip condition does not exist, and that the EFW will have already initiated if the trip condition does exist and the reset operated, the manual reset switch does not prevent the system from performing as intended and as such the indication as provided is acceptable.

The ANO-1 Technical Specifications currently require that the EFW Actuation Control Logic be tested monthly on a rotational or staggered basis and calibrated on a refueling outage basis. In addition, the EFW flow indication is checked and calibrated at the refueling outage also. These Technical Specifications are acceptable.

The environmental qualification of safety related systems including EFW circuits and components is being reviewed by the Environmental Qualification Branch as part of their review of licensee responses to "Guidelines for Evaluating Environmental Qualification of Class 1E Electrical Equipment in Operating Reactors," issued to the licensee in NRR letter dated March 5, 1980.

In order to adequately determine from the control room the performance of the EFW, steam generator level instrumentation is used, in addition to flow indication. The requirements for this steam generator level instrumentation are specified in Regulatory Guide 1.97 Revision 2 (R.G. 1.97 - "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident"). The steam generator level instrumentation at ANO-1 is qualified, energized from station standby sources, battery backed and provides continuous indication. A full review of ANO-1 steam generator level instrumentation with regard to the provisions of R. G. 1.97 will be accomplished at a future date.

CONCLUSION

Based on our review of the Franklin Research Center TER, we conclude that the ANO-1 AFWS automatic initiation and flow indication systems comply with the staff's long-term safety grade requirements.