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UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

FEB 16 1979

In Reply Refer To:
RII:JPO
50-348

Alabama Power Company
Attn: Mr. F. L. Clayton, Jr.
Senior Vice President
Post Office Box 2641
Birmingham, Alabama 35291

Gentlemen:

This Information Notice is provided as an early notification of a possibly significant matter. It is expected that recipients will review the information for possible applicability to their facilities. No specific action or response is requested at this time. If further NRC evaluations so indicate, an IE Circular, Bulletin or NRR Generic Letter will be issued to recommend or request specific licensee actions. If you have questions regarding the matter, please contact the Director of the appropriate NRC Regional Office.

James P. O'Reilly
Director

Enclosures:
1. IE Information Notice
No. 79-04
2. List of IE Information
Notices Issued in 1979

cc w/encl:
Mr. A. R. Barton
Executive Vice President
Alabama Power Company
Post Office Box 2641
Birmingham, Alabama 35291

Mr. H. O. Thrash
Manager-Nuclear Generation
Alabama Power Company
Post Office Box 2641
Birmingham, Alabama 35291

Mr. C. Biddinger, Jr.
Manager-Corporate Quality Assurance
Alabama Power Company
Post Office Box 2641
Birmingham, Alabama 35291

Mr. W. G. Hairston, III
Plant Manager
Farley Nuclear Plant
Drawer 470
Ashford, Alabama 36312

Mr. R. E. Hollands, Jr.
Quality Assurance Supervisor
Farley Nuclear Plant
Post Office Box U
Ashford, Alabama 36312

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

February 16, 1979

IE Information Notice No. 79-04

DEGRADATION OF ENGINEERED SAFETY FEATURES

Summary

On September 16, 1978, an unusual sequence of events occurred at Arkansas Nuclear One, Units 1 and 2. The events involved the electrical power sources and culminated in the spurious activation and degraded operation of Unit 2 Engineered Safety Features (ESF). Analysis of the course of the incident has identified three safety concerns in the electrical distribution system operation and design.

(1) The offsite power supply for ANO Unit 1 Engineered Safety Feature loads was deficient in that degraded voltage could have resulted in the unavailability of ESF equipment, if it were to be needed.

(2) The design of the ANO site electrical system that provides offsite power to Units 1 and 2 did not fully meet the Commission's Regulations, 10 CFR 50, Appendix A, General Design Criterion 17, because in certain circumstances a loss of one of the two offsite power circuits would also result in a loss of the other such circuit.

(3) Deficiencies existed in the operation of the Unit 2 inverters that convert DC to AC power for the uninterruptable 120 volt vital AC buses.

Description of Circumstances

Initially Unit 1 was operating at 100 percent power; Unit 2 was in hot standby performing hot functional testing in preparation for initial criticality and power operation.[1] Unit 1 auxiliary electrical loads were being supplied from the Unit 1 main generator via the unit auxiliary transformer. Unit 2 auxiliary electrical loads were being fed from the offsite grid through Startup Transformer No. 3. The normal operating status was interrupted by the failure of the Unit 1 Loop "A" Main Steam Line Isolation Valve (MSIV) air operator solenoid causing the MSIV to close as designed. The Unit 1 Reactor Protection System sensed conditions requiring reactor shutdown and tripped the reactor. The

[1]The Unit 2 Operating License did not permit criticality of power operation at the time of the incident.