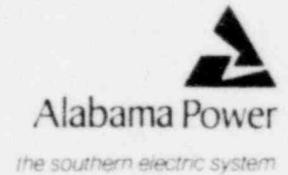


Alabama Power Company
600 North 18th Street
Post Office Box 2641
Birmingham, Alabama 35291
Telephone 205 250-1000

F. L. CLAYTON, JR.
Senior Vice President



November 21, 1980

Docket No. 50-364

Director, Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Phillips Building, Room 116
7920 Norfolk Avenue
Bethesda, Maryland 20014

Attention: Mr. A. Schwencer

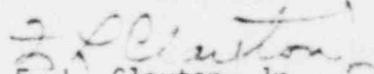
JOSEPH M. FARLEY NUCLEAR PLANT - UNIT 2
REACTOR SYSTEMS BRANCH QUESTION 210.2

Gentlemen:

Enclosed is the additional information requested by the NRC Staff concerning Reactor Systems Branch Question 210.2.

If you have any questions concerning this item, please advise.

Yours very truly,


F. L. Clayton, Jr.

BDM:rt

Enclosure

cc: Mr. R. A. Thomas
Mr. G. F. Trowbridge
Mr. L. L. Kintner
Mr. W. H. Bradford

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ENCLOSURE

REQUEST

Provide further consideration to the possibility of a small break LOCA and the time frame available to mitigate the consequences of such an accident during plant startup or shutdown when certain safety injection signals are blocked.

RESPONSE

In Alabama Power Company's letter to the NRC (F. L. Clayton, Jr. to A. Schwencer) dated September 22, 1980, a response was provided to Reactor Systems Branch Question 210.2 regarding the postulated event of a LOCA during plant startup or shutdown when certain safety injection signals are blocked. The following is a discussion of the alarms and time frames available for mitigation of a spectrum of small break LOCAs. It can be concluded from this information that the core can be maintained in a safe condition for these breaks.

ALARMS AVAILABLE

The following alarms provide main control board indication to the operator that a loss of reactor coolant system inventory accident is underway.

1. Low-pressurizer level deviations - At 5% below programmed pressurizer level an alarm will sound. For Farley Unit 2 this alarm will sound at a level of 16.4% since this is 5% below the no-load programmed operating level of 21.4%.
2. Low-pressurizer level heater cutoff at 15%.

SPECTRUM OF SMALL BREAKS CONSIDERED

1. One-inch diameter equivalent breaks and smaller -

Based on the inadequate core cooling study contained in WCAP-9753, breaks of this size will exhibit extremely long transients prior to core uncover from the initiation of break flow (e.g., approximately 2.5 hours for a four-loop plant), for full power initial conditions. The pressurizer level transient for such a break indicates that all of the previously discussed alarms would have sounded within about five minutes from the break flow initiation, leaving ample time for the operator to activate the safety injection systems manually.

2. Two-inch diameter equivalent breaks -

Calculations show that a two-inch diameter equivalent break with no safety injection would result in no core uncover in a

three-loop plant for approximately 22 minutes. Within the first 1.5 minutes of the transient, all of the previously described alarms would have sounded leaving the operator slightly more than 20 minutes to initiate safety injection manually.

3. Four-inch equivalent breaks and larger -

Breaks of this size will cause pressure inside containment to reach the high containment pressure setpoint. Since the high containment pressure safety injection setpoint signal is not blocked during startup or shutdown, it is concluded that safety injection will be actuated automatically for such breaks.