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December 19, 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
CONTAINMENT PURGE VALVE OPERABILITY

Gentlemen:

During a December 15, 1980, telephone conversation, the NRC Staff requested additional information concerning the operability of the Farley Nuclear Plant - Unit 2 18-inch containment mini-purge valves. Alabama Power Company hereby submits the enclosed information in response to the Staff's request.

If you have any further questions, please advise.

Yours very truly,

F. L. Clayton, Jr.

RWS:rt

Enclosure

cc: Mr. R. A. Thomas
Mr. G. F. Trowbridge
Mr. L. L. Kintner (w/enclosure)
Mr. W. H. Bradford (w/enclosure)

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ENCLOSURE

NRC QUESTION ON CONTAINMENT PURGE
VALVE OPERABILITY

QUESTION:

Provide the seismic and environmental qualification information for the ASCO solenoid valves and the Bettis air actuators used on the 18-inch containment mini-purge valves.

RESPONSE:

The present solenoid valves, ASCO Model No. HTX8316C15E, were determined not to have sufficient qualification documentation. These solenoid valves are used on containment mini-purge isolation valves and perform their safety function prior to the effects due to the accident environment. In the unlikely event of failure, the isolation function of these valves would be maintained and such failure would not adversely affect other safety-related equipment. Furthermore, these solenoid valves have high temperature coils and contain no Buna-N or plastic parts. Complete qualification testing or analyses have not been performed on individual assemblies; however, separate qualification tests have been performed on individual constituent components of the valve assembly. Based on the fact that no materials which would experience deleterious effects due to the harsh environments are included in these valves, and that previous limited testing has successfully verified qualification, interim use of these valves has been determined to be acceptable until they can be replaced. These solenoid valves will be replaced with ASCO Model No. NP831654V valves which are designed and certified by the manufacturer to be environmentally and seismically qualified for the accident conditions postulated at Farley Nuclear Plant-Unit 2. The replacement valves meet the performance requirements of IEEE 323-74, IEEE 382-72, and IEEE 344-75. Replacement with valves having sufficient documentation will be completed by the end of the first refueling outage. If any problems arise beyond the control of Alabama Power Company which may impact this schedule, the NRC will be notified. A replacement program to fully support this schedule has been implemented and appropriate design changes and purchase orders already have been issued.

The air actuators used on the 18-inch mini-purge valves, Bettis Model No. T-312B-SR3-M3-12 have been determined by Bettis to be generically equivalent to Bettis actuator Model No. T-312B-SR3 which has been seismically qualified in accordance with IEEE 344-1971 requirements. The Bettis Model No. T-312B-SR3-M3-12 actuators have been environmentally qualified for inside containment following a design basis accident. This environmental qualification program was based on materials qualification rather than testing of an assembled prototype operator and included radiation levels in excess of 1×10^8 rads, 100% relative humidity, exposure to containment spray, and a temperature in excess of 300°F.

The only elastomeric parts on the Bettis operators are the actuator seals. Bettis recommends replacement of the actuator seal kits on a regular basis with intervals not to exceed five years. This five year replacement cycle is based on industry standards for minimizing maintenance work and associated equipment down time. Even though the replacement interval is not required to maintain a qualified material design life, Alabama Power Company will conform to the five year replacement schedule for the actuator seals.