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F. L. Clayton, Jr.
Senior Vice President
Flintridge Building

Alabama Power
the southern electric system

October 30, 1981

Docket No. 50-348
Docket No. 50-364

RECEIVED
NOV 0 9 1981
U.S. NUCLEAR REGULATORY COMMISSION

Director of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. S. A. Varga

Gentlemen:

Ref: Joseph M. Farley Nuclear Plant - Unit 2
NPF-8 License Condition 2.C.(17) and
Letter from F. L. Clayton, Jr. to S. A. Varga
dated September 30, 1981

As required by the Joseph M. Farley Unit 2 Full Power License, NPF-8 [paragraph 2.C.(17)], the design of a modified containment vent and purge system to reduce the use of the 18-inch purge valves during power operation was submitted by the referenced letter on September 30, 1981. Subsequent conversations with members of your staff have led to a revision of the proposed design. Attached is a description of the revised design. This modification is scheduled to be installed prior to startup following the first refueling.

If you have any questions, please advise.

Yours very truly,

F. L. Clayton, Jr.

F. L. Clayton, Jr.

FLCJr/CLB:de

Attachment

cc: Mr. R. A. Thomas (w/attachment)
Mr. G. F. Trowbridge (w/attachment)
Mr. J. P. O'Reilly (w/attachment)
Mr. E. A. Reeves (w/attachment)
Mr. W. H. Bradford (w/attachment)

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ATTACHMENT

Alabama Power Company is replacing the existing 18-inch Containment Mini-Purge Valves (valves 289, 290, 291, and 292 on Figure 1) with 8-inch butterfly valves (valves 289, 290, 291 and 292 on Figure 2). The containment isolation valve arrangement remains as shown in FSAR Chapter 6. All of the new 8-inch valves are actuated by an air-operated Bettis actuator. The actuator design is "air-to-open and spring-to-close" with the valve failing in the closed position. Both the valves and actuators will be qualified seismically and environmentally, have a design life of 40 years, and can withstand a cumulative radiation dose of $1x10^8$ rads (gamma). The seismic qualification will be accomplished by prototype testing prior to operation of the system. The valves will be capable of opening or closing against DBA, LOCA and Steamline Break conditions. The valve is designed to function at a pressure of 80 psig., a temperature of 381° F, a maximum differential pressure of 80 psi, 100% relative humidity, and exposed to containment spray (N_aOH and 10,000 PRM Boric acid). The closing time of the valve at design conditions will be less than or equal to 3.5 seconds. These valves will close upon receipt of a containment isolation signal (generated as a result of safety injection, high containment pressure, or high containment radiation) and will remain closed on safety injection reset as required by IEB 80-06.

The valves will comply with the following standards:

ASME Boiler and Pressure Vessel Code, 1980 Edition
Sections II, III, V, VIII, IX

ANSI B16.5 - 1977

ANSI N271 - 1976

ANSI N45.2.2

ANSI N45.2.6

MSS-SP-67, Butterfly Valves

IEEE 323, 1974

IEEE 344, 1975

This design was discussed with the NRC staff in March and April of this year. It complies with the requirements of Branch Technical Position CSB-6-4 and the Unit 2 SER, Supplement 5, Section 6.2.3.5. The new valves and design meet or exceed all assumptions presently used in accident analysis. The proposed modifications have no adverse impact on safety or any analysis.

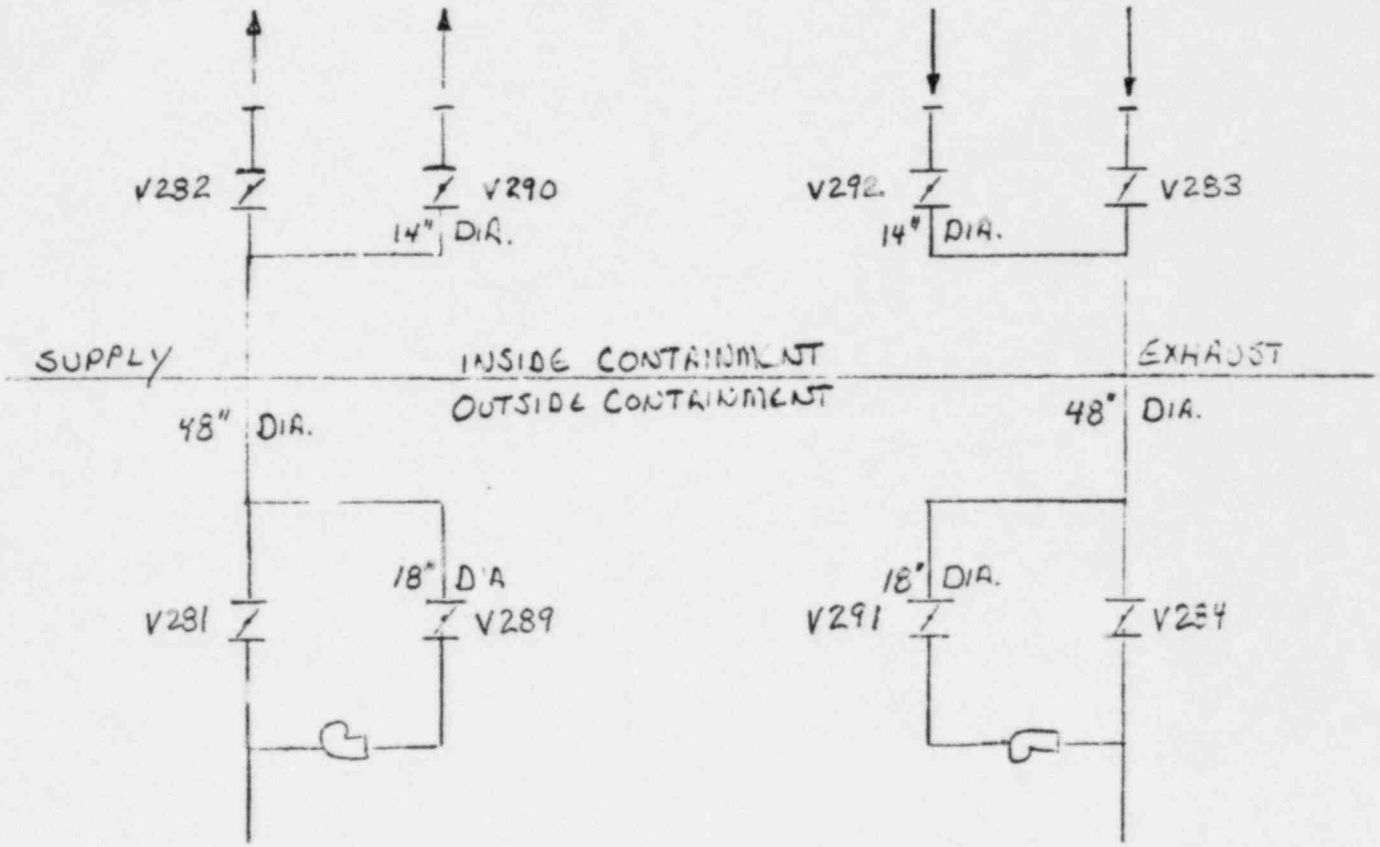

Figure 1

Existing 18-inch Purge System

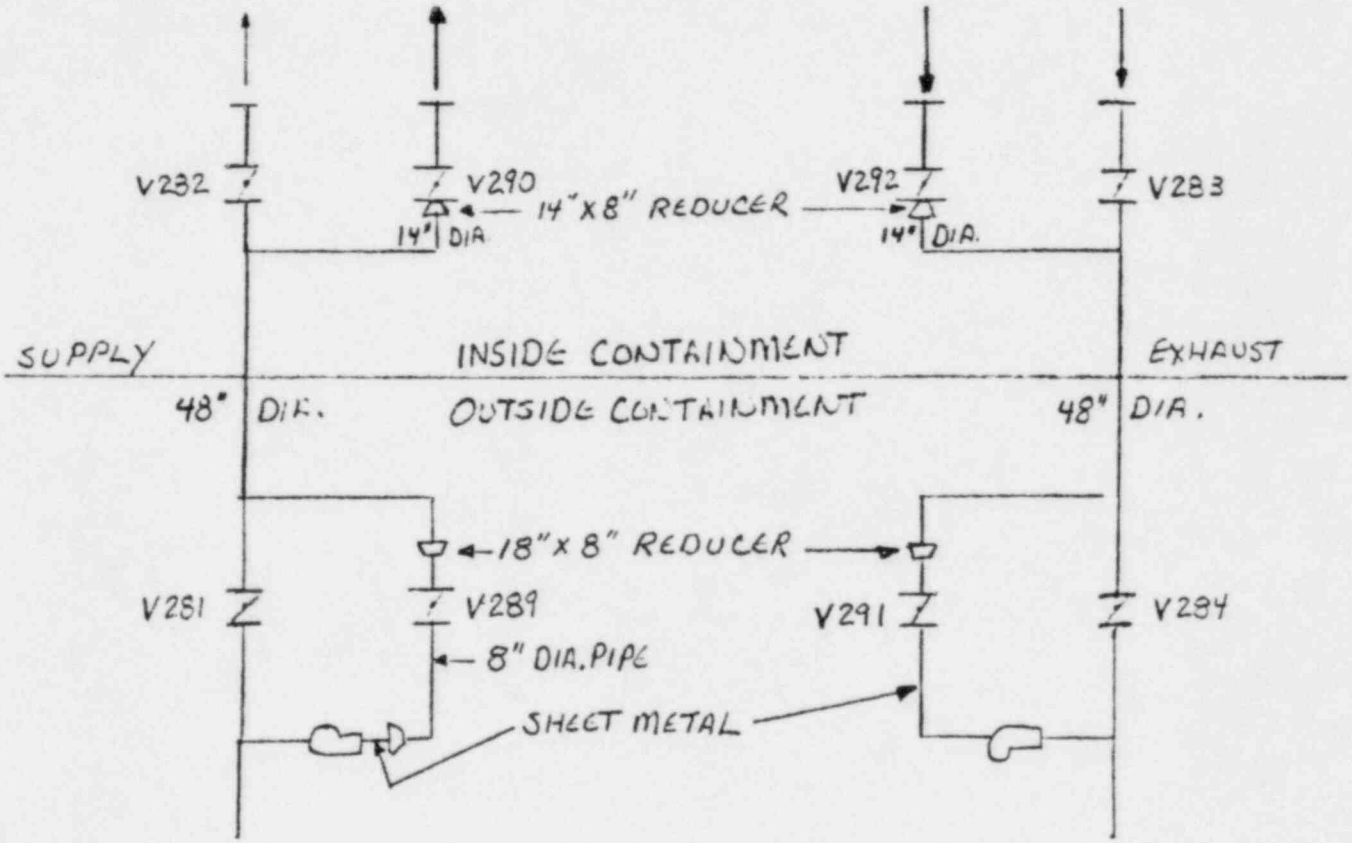

Figure 2

Proposed 8-inch Purge System