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June 1, 1984

Docket Nos. 50-348
50-364

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

Attention: Mr. S. A. Varga

Joseph M. Farley Nuclear Plant - Units 1 and 2
Request for Relief from Inservice Testing Requirements
For Accumulator and Refueling Water Storage Tank Check Valves

Gentlemen:

By letters dated November 16, 1979 and March 12, 1980, Alabama Power Company requested relief from certain requirements of the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components" for Farley Nuclear Plant, for Units 1 and 2 respectively. Additional information was provided to the NRC by letter dated November 28, 1983. Alabama Power Company committed to perform an evaluation of alternative methods to verify Accumulator Check Valves and Refueling Water Storage Tank to Containment Spray Pump Suction Check Valve operability by June 1, 1984. In letter dated January 26, 1984, the NRC granted relief from Section XI requirements until the end of the Unit 1 fifth refueling outage and the Unit 2 second refueling outage. Attachment 1 is Alabama Power Company's proposed plan for addressing the inservice testing of the above mentioned valves. Alabama Power Company requests permanent relief from the requirements of ASME Code, Section XI for the above mentioned check valves by December 3, 1984 to allow adequate preparation for the upcoming Unit 2 third refueing outage. Attachments 2 and 3 are the respective ASME Section XI code relief requests.

If there are any questions, please advise.

Yours very truly,

R. P. McDonald

RPM/BHW:ddr-D29
Attachments
cc: Mr. L. B. Long
Mr. J. P. O'Reilly
Mr. E. A. Reeves
Mr. W. H. Bradford



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**Attachment 1**
**J. M. Farley Nuclear Plant Units 1 and 2**
**Inservice Testing Program**

1. Accumulator Check Valves Q1(2)E21V032A,B,C and Q1(2)E21V037A,B,C

NRC Position: The Staff's position is that one of the six accumulator check valves be full stroke tested at each refueling outage.

APCo Response: APCo has determined that there is no adequate means for determining whether the check valve goes full open without plant modifications for the sole purpose of performing IST. APCo, in conjunction with Westinghouse, proposes to demonstrate that the required flowrate through the accumulator check valve is obtained by indirect testing. APCo proposes to perform a partial accumulator blowdown test at reduced pressure. The results of the blowdown test can be compared to the pre-operational tests for similarity. This will verify that the check valve passes the required flow based on Westinghouse supplied acceptance criteria.

This position is supported by Section XI of the ASME Code, Paragraph IWV-3522 which states:

> "For swing or tilting disk valves, if the test is made by use of fluid flow through the valve, the pressure differential for equivalent flow shall not be greater than that observed during the pre-operational test."

Westinghouse stated, "This [proposed method] is the only analytical means available to verify valve acceptability."

APCo requested that Westinghouse perform an analysis of the effects of accumulator injection with the reactor vessel internals in place. Westinghouse recommended that injections should be performed only every ten years when the vessel internals are removed.

Westinghouse further stated that:

> "Any increase in frequency could have an effect on the accumulator transient analysis. Since the accumulator and its associated piping are designed to accommodate and are analyzed for 25 accumulator discharges and 40

pressure tests in the 40-year life of the NSSS. Any increase in transients above these values must be made known to Westinghouse for proper analysis."

APCo proposes to perform the accumulator system blowdown test once during each ten year inservice inspection outage for each accumulator. Although this proposed testing adds to the refueling outage effort and increases the amount of airborne radiation within containment, APCo has determined this test will sufficiently demonstrate that the accumulator check valve will pass the intended flow. APCo therefore requests permanent relief from ASME Code Section XI for the inservice testing of the Accumulator Check Valves for Units 1 and 2 based upon a low pressure blowdown test of the accumulators for each unit every 10 years. Attachment 2 summarizes this relief request.

2. Refueling Water Storage Tank Containment Spray Pump Suction Check Valve Q1(2)E13V014

NRC Position: The Staff's position is that the refueling water storage tank (RWST) check valve be full stroke tested each refueling outage.

APCo Response: APCo proposes to verify the RWST check valve is operable by performing a containment spray system flow test on one train of the containment spray system. The system is designed such that one train of containment spray is adequate to perform the safety function. By demonstrating that the design flow through the check valve is obtained, the capability of the check valve disc to adequately move up and out of the flow path is proven.

The method APCo plans to use for performing the test is similar to that used during pre-operational testing of the containment spray system and, therefore, can only be performed during a refueling outage. In order to prevent an actual containment spray, the spray header isolation valve is closed. The valve bonnet and internals are temporarily removed from the upstream check valve; then a temporary flushing header containing an isolation

valve is routed from the location of the upstream check valve to the refueling cavity. The containment spray pump is then started and the RWST contents are pumped directly into the refueling cavity. Testing in the above configuration will provide the necessary flowrate to ensure that the containment spray system check valve passes the intended flow.

As stated above, this test can only be performed during a refueling outage when the refueling canal is being filled. Due to the possible leakage or damage that may result from disassembling the upstream check valve to install the temporary header, the time and expense of running the temporary connections to the refueling cavity and the additional manpower required during the critical path of refueling activities, APCo proposes to perform the containment spray check valve flow test once every ten years during the inservice inspection outage.

APCo has expended considerable effort evaluating alternative means to perform the proposed NRC testing. Engineering studies have been completed by APCo design organizations, and all methods to perform the full stroke testing require substantial plant modifications (approximately one million dollars). It is APCo's understanding that the intent of the Inservice Inspection Program is not to require plant modifications on operating plants. APCo therefore requests permanent relief from the ASME Code, Section XI inservice testing requirements of the RWST containment spray pump suction check valve for Farley Nuclear Plant, Units 1 and 2 based upon the 10 year flow test specified above. Attachment 3 summarizes this request.

Attachment 2

COMPONENT: CODE CLASS: 1

Accumulator Check Valves

EXAMINATION REQUIREMENT:

IWV-3410(b)(1) of the 1974 ASME Section XI states: "Normally closed valves that cannot be operated during normal plant operation shall be specifically identified by the Owner and shall be full-stroke exercised during each cold shutdown;"

BASIS FOR RELIEF:

APCo has determined that there is no adequate means for determining whether the check valve goes full open without plant modifications for the sole purpose of performing IST. For a more detailed explanation, see APCo's response, Item 1 of Attachment 1.

ALTERNATIVE EXAMINATION:

APCo, in conjunction with Westinghouse, proposes to demonstrate that the required flowrate through the accumulator check valve is obtained by indirect testing. APCo proposes to perform a partial accumulator blowdown test at reduced pressure. The results of the blowdown test can be compared to the pre-operational tests for similarity. This will verify that the check valve passes the required flow based on Westinghouse supplied acceptance criteria. For a more detailed explanation, see APCo's response, Item 1 of Attachment 1.

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Attachment 3

COMPONENT: CODE CLASS: 2

RWST to Containment Spray Pump Suction Check Valve

EXAMINATION REQUIREMENT:

IWV-3520 of the 1974 ASME Section XI states: "Check valves shall be exercised to the position required to fulfill their function unless such operation is not practical during plant operation. If only limited operation is practical during plant operation, the check valve shall be part-stroke exercised during plant operation and full stroked during each cold shutdown."

BASIS FOR RELIEF:

Demonstrating design flow through the containment spray system check valve will verify that the check valve would perform its intended safety function. For a more detailed explanation, see APCo's response, Item 2 of Attachment 1.

ALTERNATIVE EXAMINATION:

As an alternative, a design flow test through the containment spray system check valve, similar to that used during pre-operational testing, will be performed. This test demonstrates that the design flowrate necessary through the check valve to perform its intended safety function can be obtained. For a more detailed explanation, see APCo's response Item 2 of Attachment 1. Partial stroking of the check valve is performed during plant operation.