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Georgia Power
the southern electric system

C. K. McCoy
Vice President, Nuclear
Vogtle Project

October 9, 1992

MSV-01162
3844

Docket No. 50-424
50-425

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Gentlemen:

VOGTLE ELECTRIC GENERATING PLANT
REPLY TO
NRC REQUEST FOR ADDITIONAL INFORMATION
CONCERNING GENERIC LETTER 89-10 PROGRAM

Pursuant to your letter of September 25, 1992 requesting additional information concerning the Vogtle Electric Generating Plant Generic Letter 89-10 program, the enclosure to this letter documents the Georgia Power Company response to each of the questions contained in the referenced NRC letter.

Should you require any additional information regarding this response, please contact my office.

Sincerely,

C.K. McC

C. K. McCoy

CKM/HET/lb

Enclosure

A064 1/1

Georgia Power

xc: Georgia Power Company
Mr. S. H. Chesnut
Mr. M. Sheibani
Mr. W. B. Shipman
NORMS

U. S. Nuclear Regulatory Commission
Mr. S. D. Ebneter, Regional Administrator
Mr. D. S. Hood, Licensing Project Manager, NRR
Mr. B. R. Bonser, Senior Resident Inspector, Vogtle

700775

ENCLOSURE

QUESTION 1:

Do the results of the 45 MOVs that you previously tested in response to NRC Bulletin 85-03 support your determination that the assumptions in the MOV sizing and switch setting calculations are appropriate? Your reply should also discuss these results with respect to the 54 MOVs that you plan to modify to increase their performance capability.

RESPONSE:

The forty-five MOVS dynamically tested in conjunction with the VEGP I&E Bulletin 85-03 program were tested utilizing MOVATS TMD based diagnostic equipment. These tests were performed prior to the issuance of GL 89-10, and the MOVATS equipment was the only viable MOV test system available at that time. The valves all operated successfully at the design basis differential pressure, or, in cases where the design basis differential pressure was not attainable, at the maximum differential pressure attained in the test. The data collected by the MOVATS equipment provided an effective means for evaluating available margins, however, it did not provide sufficient data to perform the in-depth evaluations necessary to verify the assumptions utilized in the calculations. Attempting to determine such parameters as valve factors, stem friction factors and rate-of-loading effects from the available data would involve a great deal of uncertainty and would not provide useful results.

With respect to the valves being modified during the upcoming outages, twelve of these valves were tested dynamically in conjunction with the 85-03 program. Each of these valves operated successfully under dynamic conditions. The fifty-four valves that are scheduled for modifications are being upgraded to provide additional margin to account for such factors as test equipment inaccuracy, torque switch repeatability and rate-of-loading. The additional margin will provide greater flexibility in performing valve set-ups utilizing diagnostic equipment and will hopefully reduce the need for dynamic testing in the future.

ENCLOSURE
(Continued)

QUESTION 2:

During the meeting of September 22, 1992, GPC provided the enclosed matrix of the schedule for testing MOVs under differential pressure and flow conditions. What criteria were used to develop this matrix and what alternatives were considered? Discuss the impact of rearranging the test matrix in a manner which would ensure that each MOV in the matrix, or its corresponding MOV in the other unit, is tested during the two refueling outages in 1993.

RESPONSE:

The valves to be dynamically tested were identified based on a prioritization process outlined in Attachment 1 to our Inspection Report response dated July 9, 1992. All of the priority 5 and 6 (high differential pressure, low margin) valves which were determined to be testable based on a preliminary review were scheduled for testing during the next two scheduled outages for each unit. The valves scheduled for the 1993 outages were selected because they were already scheduled to be modified and/or statically tested during these outages. The remaining priority 5 and 6 valves which are testable were scheduled for testing during the following outage for each unit.

In developing the test matrix, consideration was given to grouping the valves based upon valve type, manufacturer, size and ANSI rating. This would have essentially organized the valves in identical valve groups. A representative sample from each group would have been differential pressure tested and the test results would have been applied to the remainder of the valves in the group. This approach was ultimately abandoned in favor of prioritizing the valves with respect to the severity of each valve's operating requirements and each valve's calculated margin.

The feasibility of modifying the test matrix to accommodate testing either a Unit 1 or Unit 2 valve of each tag number in 1993 has been evaluated. As previously stated, the test matrix was originally developed with consideration given to testing valves in 1993 that were already scheduled for modification or periodic testing in order to optimize the use of resources. Modifying the matrix at this point to test one valve of each tag number would require a major rescheduling of work and would result in a significantly greater scope of work during the 1993 outages.

In lieu of testing one valve of each tag number the test matrix has been reviewed to determine the feasibility of testing a representative sample of each valve design included in the matrix during the 1993 outages. The valves included in the test matrix were organized into valve groups based on valve type, manufacturer, size and ANSI rating. Attachment 1 outlines the ten groups which resulted from organizing the valves in the manner outlined above. Reviewing each valve group against the current test schedule indicated that the existing test matrix could be modified to

QUESTION 2: (Continued)

RESPONSE:

accommodate testing valves from each group in the 1993 outages with minimal impact. In order to ensure that a representative sample from each group is tested in the 1993 outages the following changes will be made to the test schedule:

1. None of the eight, Westinghouse, 12 in., 1525 lb., gate valves are currently scheduled for testing in 1993. The test schedule will be revised to reflect testing a total of 2 of these valves during the 1993 outages.

2. Only one of twelve Velan, 1.5 in., 1500 lb., globe valves is currently scheduled for testing in 1993. The test schedule will be revised to reflect testing a total of 2 of these valves during the 1993 outages.

These changes will add a total of three valves to the 1993 outage test scopes and will provide test data on each valve design included in the test matrix.

QUESTION 3:

Has GPC developed procedures to provide acceptance criteria for MOV test results to provide assurance, before the tested MOV is returned to service, that the MOV can perform its safety functions under design basis conditions?

RESPONSE:

Procedures are currently being developed to support differential pressure testing beginning in the spring 1993 outage. The site procedure will control the collection of data and will include the requirement that an evaluation of several key parameters be performed to insure operability prior to closing the Maintenance Work Order (MWO) and returning the valve to service. Included in the procedure will be the requirement that the test results be forwarded to engineering for a final evaluation in a timely manner. Engineering is currently in the process of developing a procedure to control the detailed evaluation of the test data and its use in validating the analytical methodology utilized in the design review. If the review performed on site indicates that a problem may exist, the test data will be forwarded to engineering for review and dispositioning prior to closing the MWO and declaring the valve operable.

ENCLOSURE
(Continued)

QUESTION 4:

What procedures are in place to ensure that information from the MOV tests are applied to other similar MOVs in both Vogtle units.

RESPONSE:

The total population of valves included in the VEGP GL 89-10 program have been grouped according to valve type, manufacturer, size and ANSI rating. There are a total of twenty-eight groups and each group essentially constitutes a block of identical valves. The engineering procedure being developed to cover the detailed review of the differential pressure test data and its ultimate use in validating the analytical methodology utilized in the design review will reference this grouping. Any potential problems that are identified on site relative to differential pressure test results will be referred to engineering for review and dispositioning prior to closing the MWO. If engineering's review confirms that a problem does exist it will automatically trigger a review of all of the valves included in that specific valve group for both units.

QUESTION 5:

Attachment 1 to Mr. McCoy's letter of July 9, 1992, indicated that MOVs will not be tested if at least 50% of design basis differential pressure cannot be achieved. What is the basis for excluding MOVs that can be tested under a significant amount of differential pressure, although less than 50% of design basis conditions?

RESPONSE:

There is not currently an approved methodology for extrapolating reduced differential pressure test results to design basis conditions. Due to the conservative assumptions made in the differential pressure calculations there are very few valves that can actually be tested at the maximum calculated design basis differential pressure. In almost all cases some type of extrapolation will be required to apply the actual test results to the calculated design basis conditions. The further away from design basis the test conditions are the greater the uncertainty in the extrapolation process. Fifty percent of the design basis differential pressure was selected as a minimum value for performing a meaningful extrapolation of the actual test results to design basis conditions. However, it should be noted that after performing the preliminary review of the priority 5 and 6 valves it was determined that if a valve was testable under dynamic conditions, it was testable at greater than fifty percent of the design basis differential pressure. If a valve was excluded from testing it was because the valve could not be manipulated under any dynamic conditions (e.g., pump suction valves) or the differential pressure attainable was significantly less than fifty percent (e.g., thermal barrier valves).

ATTACHMENT 1

TAG NUMBER	DESCRIPTION	VALVE TYPE	MANUFACTURER	SIZE	ANSI RATING
1/2HV8105	CHARG PMP TO REAC COOL SYS ISO	GATE	WESTINGHOUSE	3.0	2035#
1/2HV8106	CHARG PMP TO REAC COOL SYS ISO	GATE	WESTINGHOUSE	3.0	2035#
1/2HV3009	STM GEN OUTLET TO AUX TURBINE	GATE	ANCHOR DARLING	4.0	900#
1/2HV3019	STM GEN OUTLET TO AUX TURBINE	GATE	ANCHOR DARLING	4.0	900#
1/2HV5106	AUX FEED PMP TURB VALVE	GATE	ANCHOR DARLING	4.0	900#
1/2HV8801A	BORON INJECT TANK DISCH ISOLAT	GATE	WESTINGHOUSE	4.0	1525#
1/2HV8801B	BORON INJECT TANK DISCH ISOLAT	GATE	WESTINGHOUSE	4.0	1525#
1/2HV8802A	RLS HOT LEG LOOP 1/4 HDR ISO	GATE	WESTINGHOUSE	4.0	1525#
1/2HV8802B	RLS HOT LEG LOOP 2/3 HDR ISO	GATE	WESTINGHOUSE	4.0	1525#
1/2HV8835	SIS COLD LEG LOOP IN HDR ISO	GATE	WESTINGHOUSE	4.0	1525#
1/2HV8821A	SIP TRNA TO RCS COLD LEG ISO	GATE	WESTINGHOUSE	4.0	900#
1/2HV8821B	SIP TRNB TO RCS COLD LEG ISO	GATE	WESTINGHOUSE	4.0	900#
1/2HV8701A	RESID HT REMOV LOOP 1 IN ISO	GATE	WESTINGHOUSE	12.0	1525#
1/2HV8701B	RESID HT REMOV LOOP 1 IN ISO	GATE	WESTINGHOUSE	12.0	1525#
1/2HV8702A	RESID HT REMOV LOOP 4 IN ISO	GATE	WESTINGHOUSE	12.0	1525#
1/2HV8702B	RESID HT REMOV LOOP 4 IN ISO	GATE	WESTINGHOUSE	12.0	1525#
1/2HV8116	CHG PUMP A DISCHARGE	GLOBE	VELAN	1.0	1500#
1/2HV8103A	RCP 1 SEAL WATER INLET	GLOBE	VELAN	1.5	1500#
1/2HV8103B	RCP 2 SEAL WATER INLET	GLOBE	VELAN	1.5	1500#
1/2HV8103C	RCP 3 SEAL WATER INLET	GLOBE	VELAN	1.5	1500#
1/2HV8103D	RCP 4 SEAL WATER INLET	GLOBE	VELAN	1.5	1500#
1/2HV8814	SI PUMP TR A MINIFLO TR A ISOL	GLOBE	VELAN	1.5	1500#
1/2HV8920	SI PUMP TR B MINIFLO TR A ISOL	GLOBE	VELAN	1.5	1500#
1/2FV5154	AUX FEED PMP P4002 MINIFLOW	GLOBE	FISHER	2.0	900#
1/2FV5155	AUX FEED PMP P4003 MINIFLOW	GLOBE	FISHER	2.0	900#
1/2HV8110	CHARG PUMP MINIFLO ISOLATION	GLOBE	VELAN	2.0	1500#
1/2HV8111A	CHARG PUMP MINIFLO ISOLATION	GLOBE	VELAN	2.0	1500#
1/2HV8111B	CHARG PUMP MINIFLO ISOLATION	GLOBE	VELAN	2.0	1500#
1/2HV8813	SI PUMPS COMMON MINIFLOW ISOLATION	GLOBE	VELAN	2.0	1500#
1/2HV5120	AUX FEED PMP P4001 DISCH TRN C	GLOBE	FISHER	4.0	900#
1/2HV5122	AUX FEED PMP P4001 DISCH TRN C	GLOBE	FISHER	4.0	900#
1/2HV5125	AUX FEED PMP P4001 DISCH TRN C	GLOBE	FISHER	4.0	900#
1/2HV5127	AUX FEED PMP P4001 DISCH TRN C	GLOBE	FISHER	4.0	900#
1/2HV5132	AUX FEED PMP P4002 DISH TRN B	GLOBE	FISHER	4.0	900#
1/2HV5134	AUX FEED PMP P4002 DISH TRN B	GLOBE	FISHER	4.0	900#
1/2HV5137	AUX FEED PMP P4003 DISH TRN A	GLOBE	FISHER	4.0	900#
1/2HV5139	AUX FEED PMP P4003 DISH TRN A	GLOBE	FISHER	4.0	900#