

Georgia Power Company
40 Business Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201
Telephone 205 877-7122



Georgia Power

the southern electric system

C. K. McCoy
Vice President, Nuclear
Vogtle Project

June 17, 1992

ELV-03718
001664

Docket Nos. 50-424
50-425

TAC M82135
M82136

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

Gentlemen:

VOGTLE ELECTRIC GENERATING PLANT
REQUEST TO REVISE TECHNICAL SPECIFICATIONS
3/4.6.1.7 AND 4.6.1.2f

By letter dated November 7, 1991, (ELV-01006) Georgia Power Company (GPC) proposed to amend the Vogtle Electric Generating Plant (VEGP) Unit 1 and Unit 2 Technical Specifications (TS) related to leakage testing requirements for the containment purge supply and exhaust isolation valves (TS 4.6.1.2f and 3/4.6.1.7). On April 21, 1992, during a telephone conversation with the NRC staff, GPC agreed to revise the subject amendment request to:

1. Clarify that the leakage limit of 0.06 La would continue to apply to the quarterly leakage test, and
2. Delete the proposed option which would have allowed a containment purge supply or exhaust penetration to be isolated by closing and deactivating the two operable inner or outer isolation valves, as applicable, in the event that a Type C leakage test exceeds the 0.06 La limit.

Therefore we are providing in enclosures 1, 2, and 3, a revised amendment request consistent with the above agreement.

Sincerely,

C.K. McCoy
C. K. McCoy

Enclosures:

1. Basis for Proposed Change
2. 10 CFR 50.92 Evaluation
3. Instructions for Incorporation

CKM/NJS/gmb

xc: (See next page)

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c(w): Georgia Power Company
Mr. W. B. Shipman
Mr. M. Sheibani
NORMS

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

State of Georgia
Mr. J. D. Tanner, Commissioner, Department of Natural Resources

ENCLOSURE 1

VOGTLE ELECTRIC GENERATING PLANT REQUEST TO REVISE TECHNICAL SPECIFICATIONS 3/4.6.1.7 and 4.6.1.2f

BASIS FOR PROPOSED CHANGE

Proposed Change

The Vogtle Unit 1 and Unit 2 Technical Specifications for the containment purge supply and exhaust isolation valves (Technical Specifications 3/4.6.1.7 and 4.6.1.2f) are proposed to be revised as follows:

1. Revise the surveillance requirements of Specification 3/4.6.1.7 such that the quarterly leak rate test may be performed outside of containment by pressurizing the space between the valves. A Type C local leak rate test (LLRT) will be performed at least once per 24 months (as required by 10 CFR 50, Appendix J) and whenever the quarterly leak rate test results exceed the acceptance criteria.
2. Revise the bases for Specification 3/4.6.1.7 to reference section 6.2.6 of the Final Safety Analysis Report (FSAR) and plant procedures, which will be revised to identify the acceptance criteria for the quarterly leakage test.
3. Revised surveillance requirement 4.6.1.2f to reference both the Type C LLRT and the quarterly leakage test for the containment purge supply and exhaust isolation valves.
4. In addition to the above, revise the limiting condition for operation (LCO) action requirements of Specification 3/4.6.1.7: to (1) provide an action statement consistent with the revised surveillance requirements, (2) provide for the case where purge supply and exhaust penetration leakage causes the combined leakage for all penetrations and valves subject to Type B and C testing to exceed 0.60 La, and (3) provide for an alternate method of penetration isolation in response to excess containment purge penetration leakage.

Basis

Information Notice No. 88-73, "Direction-Dependent Leak Characteristics of Containment Purge Valves," addressed an unexpected direction-dependent leakage characteristic of certain butterfly valves equipped with a tapered seat. Pressure from one direction tended to unseat the resilient seals (gaskets), whereas pressure from the opposite direction tended to seal the gaskets against the tapered valve seats. The preferred method of performing the quarterly

ENCLOSURE 1 (CONTINUED)

VOGTLE ELECTRIC GENERATING PLANT REQUEST TO REVISE TECHNICAL SPECIFICATIONS 3/4.6.1.7 and 4.6.1.2f

BASIS FOR PROPOSED CHANGE

testing at VEGP involves pressurizing the space between the inboard and outboard purge supply and exhaust isolation valves (hereafter referred to as a "between valve" test). This method of testing is preferred because the test connections are located outside of containment, and the test does not require the use of blind flanges, eliminating the need for containment entry, scaffolding inside containment, etc. However, this would result in the inboard valve being tested in the direction opposite that which the valve would experience under accident conditions.

Section III.C. "Type C tests," of Appendix J, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors," to 10 CFR 50 states that for containment isolation valve local leak rate testing, "pressure shall be applied in the same direction as that when the valve would be required to perform its safety function, unless it can be determined that the results from the tests for a pressure applied in a different direction will provide equivalent or more conservative results." As a result of Information Notice No. 88-73, it is uncertain that the preferred method of testing at VEGP can be considered to provide equivalent or more conservative results with respect to the inboard containment purge supply and exhaust isolation valves. However, in order to test these valves by pressurizing in the accident direction, containment entry is required. Since these tests must be performed at quarterly intervals as required by existing surveillance requirement 4.6.1.7.2, the necessity of making a containment entry each time the test must be performed works a hardship on plant personnel, especially from the standpoint of maintaining personnel exposure as low as reasonably achievable (ALARA). Figure 1 illustrates the typical arrangement of valves, test connections, and blind flanges for purge supply and exhaust penetrations.

The purpose of these quarterly tests is to identify excessive degradation of the resilient seals. The quarterly test, under the provisions of the proposed amendment, will provide indication of seal degradation by one of two ways as follows:

- o First, the quarterly "between valve" test results will be trended. If the current leakage exceeds the previous leakage by 10 percent of 0.06 La, the "between valve" test frequency will be increased to at least once per month. The value of 10 percent of 0.06 La is conservatively low and yet it is high enough to accommodate normal variation due to periodic cycling of the valves. Increasing the test frequency is an appropriate response to the potential degradation indication by the increased leakage.
- o If the current "between valve" test results exceed 35 percent of 0.06 La, then a Type C test must be performed within 24 hours. The limit of 35 percent of 0.06 La was chosen as a conservative value based on a comparison of historical leak rate test results for these valves. These test

ENCLOSURE 1 (CONTINUED)

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results included data obtained from "between valve" testing as well as Type C testing, and the limit is supported by the ratio of the "between valve" data to the Type C data as well as the absolute difference between the results of the two types of tests. A limit of 35 percent of 0.06 La is also conservative with respect to the Technical Specification limit of 0.06 La in that the "between valve" test measures the leakage through all four valves simultaneously as opposed to the Type C test, which measures leakage through only two valves at a time. (For a Type C test, the leakage of the two inboard valves is measured individually and the leakage data is added together; the leakage of the two outboard valves is measured simultaneously. The larger of these sums is used as the penetration leakage rate.) Therefore, the effect of testing all four valves associated with a penetration at the same time in combination with a limit of 35 percent of 0.06 La provides additional assurance against the fact that the inboard valves are being pressurized in a direction opposite the accident direction. A time frame of 24 hours will ensure that the Type C test is performed in a timely manner while providing sufficient time to set up and perform the test.

This approach is similar to that of ASME Section XI in that it incorporates the equivalent of an alert level and a required action level. Therefore, early detection of seal degradation is ensured while reducing radiation exposure to test personnel since containment entry to perform the quarterly test is not necessarily required. The requirements of 10 CFR 50, Appendix J continue to be met since these quarterly tests are in addition to and do not replace Appendix J testing.

In summary, the quarterly "between valve" tests will be subject to the following requirements:

- o The containment purge supply and/or exhaust penetration leakage must be less than 0.06 La and the combined leakage rate for all penetrations and valves subject to Type B and C tests must be less than 0.60 La.
- o Quarterly "between valve" test results will be trended. If the current leakage exceeds the previous test leakage by 10 percent of 0.06 La, then the "between valve" test frequency will be increased to at least once per month.
- o If the current "between valve" test leakage exceeds 35 percent of 0.06 La, then a Type C test must be performed within 24 hours. The value of 35 percent of 0.06 La is the required action limit referenced in proposed Technical Specification surveillance requirement 4.6.1.7.3.

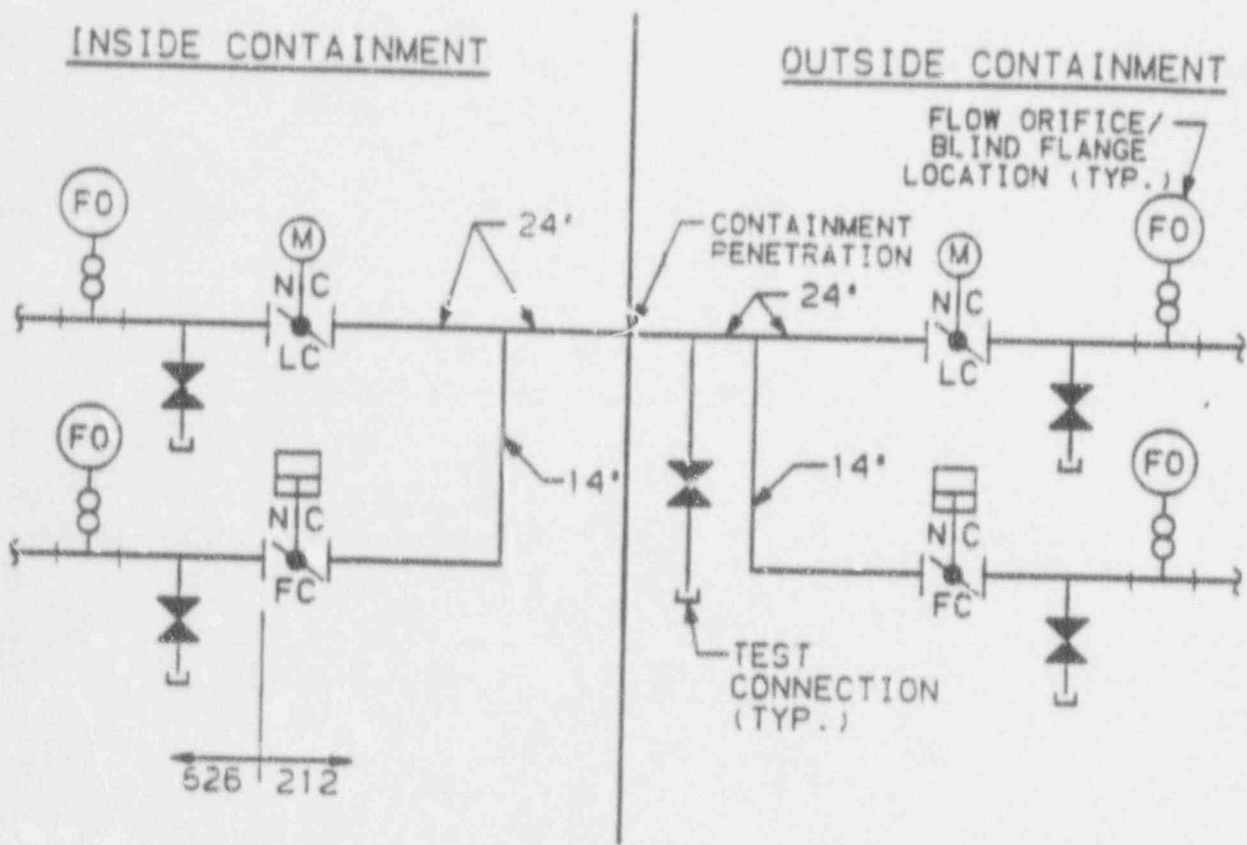
ENCLOSURE 1 (CONTINUED)

VOGTLE ELECTRIC GENERATING PLANT
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BASIS FOR PROPOSED CHANGE

These requirements will be placed in section 6.2.6 of the Vogtle FSAR and controlled by plant procedures. As more test data is obtained, the above restrictions may be further refined, subject to the provisions of 10 CFR 50.59.

In addition, the proposed Technical Specification amendment would provide for an alternate means of isolating the purge penetrations in the event of excessive leakage through an isolation valve. Isolating the affected penetration via blind flanges will assure that containment leakage is maintained within limits while allowing for maintenance to be performed on the inoperable valve associated with the affected penetration. Furthermore, the revised action statements provide for a graded response depending on the severity of the leakage. In the event that excessive valve leakage causes the combined leakage to exceed 0.60 La (the leakage limit of Specification 3/4.6.1), the revised action statements are consistent with the provisions of LCO 3.6.1.1.



CONTAINMENT PURGE SUPPLY/EXHAUST PENETRATION
TYPICAL ARRANGEMENT

FIGURE 1

ENCLOSURE 2

VOGTLE ELECTRIC GENERATING PLANT REQUEST TO REVISE TECHNICAL SPECIFICATIONS 3/4.6.1.7 AND 4.6.1.2f

10 CFR 50.92 EVALUATION

Pursuant to 10 CFR 50.92, GPC has evaluated the proposed amendment and has determined that operation of the facility in accordance with the proposed amendment would not involve a significant hazards consideration. The basis for this determination is as follows:

1. The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated. The proposed change involves the requirements that ensure that containment integrity and containment leakage limits are maintained. The proposed change does not involve or have any effect on any initiating event for any accident previously evaluated. Operation under the provisions of the proposed amendment will continue to ensure that containment integrity and leakage limits are maintained. The requirements of 10 CFR 50, Appendix J will continue to be met. Therefore, the probability or consequences of any accident previously evaluated will not be affected.
2. The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated. The change does not introduce any new equipment into the plant or require any existing equipment to be operated in a manner different than that in which it was designed to be operated. Containment integrity and leakage limits will continue to be maintained under the proposed surveillance requirements. With regard to isolating the affected penetration, the provision for the use of blind flanges is a part of the existing design, and is consistent with existing Technical Specification 3.6.3, "Containment Isolation Valves."
3. The proposed change does not involve a significant reduction in a margin of safety. Containment integrity and leakage limits will continue to be maintained in a manner that is consistent with the safety analysis. The acceptance criteria for the quarterly tests will be based on a conservative fraction of the leakage limits. If the acceptance criteria for the quarterly test cannot be met, the test frequency will be increased or a Type C LLRT will be performed in a timely manner, as required. Therefore, containment purge penetration leakage will continue to be monitored in an effective manner while reducing radiation exposure to personnel involved in testing as well as reducing personnel hazards associated with the use of scaffolding, etc. The introduction of an alternate method of isolating the penetration (i.e., blind flanges) plus the additional action to provide for the event that total combined leakage exceeds 0.60 La is consistent with existing Technical Specification 3.6.3, "Containment Isolation Valves," and 3.6.1.1, "Containment Integrity." Based on the above, there will be no reduction in the margin of safety.

ENCLOSURE 2 (CONTINUED)

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10 CFR 50.92 EVALUATION

Based on the preceding analysis, GPC has determined that the proposed change to the Technical Specifications will not significantly increase the probability or consequences of an accident previously evaluated, create the possibility of a new or different kind of accident from any accident previously evaluated, or involve a significant reduction in a margin of safety. GPC therefore concludes that the proposed change meets the requirements of 10 CFR 50.92 (c) and does not involve a significant hazards consideration.