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Dockets Nos. 50-321
and 50-366

Mr. J. T. Beckham, Jr.
Vice President - Nuclear Generation
Georgia Power Company
P. O. Box 4545
Atlanta, Georgia 30302

Dear Mr. Beckham:

SUBJECT: OPERABILITY OF CONTAINMENT PURGE AND VENT VALVES

In order to complete our review of the Hatch Plant Units 1 and 2 purge and vent valves operability, we need responses to the enclosed request for information. In our previous letter of July 7, 1982, we provided NRC staff guidance and requests for information relevant to the ongoing generic review of the containment purge and vent issue. Kindly respond within 30 days of receipt of this letter. This request for information was approved by the Office of Management and Budget under clearance number 3150-0065 which expires May 31, 1983.

Sincerely,

Original signed by

John F. Stolz, Chief
Operating Reactors Branch #4
Division of Licensing

Enclosures:
Request for Information

cc w/enclosures:
See next page

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DATE	11/9/82	11/9/82	11/10/82				

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REQUEST FOR INFORMATION - HATCH UNITS 1 AND 2

Operability Qualification of
Purge and Vent Valves

Demonstration of operability of the containment purge and vent valves and the ability of these valves to close during a design basis accident is necessary to assure containment isolation. This demonstration of operability is required to meet Containment Systems Branch Position BTP 6-4 provided to you in our November 29, 1978 letter and supplemented in our September 27, 1979 letter.

1. For each purge and vent valve covered in the scope of this review, the following documentation demonstrating compliance with the "Guidelines for Demonstration of Operability of Purge and Vent Valves" should be submitted for staff review:

   A. Dynamic Torque Coefficient Test Reports (Butterfly valves only) - including a description of the test setup.

   B. Operability Demonstration or In-situ Test Reports (when used)

   C. Stress Reports

   D. Seismic Reports for Valve Assembly (valve and operator) and associated parts.

   E. Sketch or description of each valve installation showing the following (Butterfly valves only):

      1. direction of flow
      2. disc closure direction
      3. curved side of disc, upstream or downstream (asymmetric discs)
      4. orientation and distance of elbows, tees, bends, etc. within 20 pipe diameters of valve
      5. shaft orientation
      6. distance between valves

   F. Demonstration that the maximum combined torque developed by the valve is below the actuator rating.

2. The licensee should respond to the "Specific Valve Type Questions" (Attachment 1) which relate to his valve.

3. Analysis, if used, should be supported by tests which establish torque coefficients of the valve at various angles. As torque coefficients in butterfly valves are dependent on disc shape, aspect ratio, angle of closure flow direction and approach flow, these things should be accurately represented during tests. Specifically, piping installations (upstream and downstream of the valve) during the test should be representative of actual field

installations. For example, non-symmetric approach flow from an elbow upstream of a valve can result in fluid dynamic torques of double the magnitude of those found for a valve with straight piping upstream and downstream.

4. In-situ tests, when performed on a representative valve, should be performed on a valve of each size/type which is determined to represent the worst case load. Worst case flow direction, for example, should be considered.

5. For two valves in series where the second valve is a butterfly valve, the effect of non-symmetric flow from the first valve should be considered if the valves are within 15 pipe diameters of each other.

6. If the licensee takes credit for closure time vs. the buildup of containment pressure, he must demonstrate that the method is conservative with respect to the actual valve closure rate. Actual valve closure rate is to be determined under both loaded and unloaded conditions (if valves close faster at all angles of opening under loaded conditions, no load closure time may be used as conservative) and periodic inspection under tech. spec. requirements should be performed to assure closure rate does not increase with time or use.

Attachment 1
Specific Valve Type Questions

The following questions apply to specific valve types only and need to be answered only where applicable. If not applicable, state so.

A. Torque Due to Containment Backpressure Effect (TCB)

For those air operated valves located inside containment, is the operator design of a type that can be affected by the containment pressure rise (backpressure effect) i.e., where the containment pressure acts to reduce the operator torque capability due to TCB. Discuss the operator design with respect to the air vent and bleeds. Show how TCB was calculated (if applicable).

B. Where air operated valve assemblies use accumulators as the fail safe feature, describe the accumulator air system configuration and its operation. Discuss active electrical components in the accumulator system, and the basis used to determine their qualification for the environmental conditions experienced. Is this system seismically designed? How is the allowable leakage from the accumulators determined and monitored?

C. For valve assemblies requiring a seal pressurization system (inflatable main seal), describe the air pressurization system configuration and operation including means used to determine their qualification for the environmental condition experienced. Is this system seismically designed?

D. Where electric motor operators are used to close the valve has the minimum available voltage to the electric operator under both normal or emergency modes been determined and specified to the operator manufacturer to assure the adequacy of the operator to stroke the valve at accident conditions with these lower limit voltages available? Does this reduce voltage operation result in any significant change in stroke timing? Describe the emergency mode power source used.

E. Where electric motor and air operator units are equipped with handwheels, does their design provide for automatic re-engagement of the motor operator following the handwheel mode of operation? If not, what steps are taken to preclude the possibility of the valve being left in the handwheel mode following some maintenance, test etc. type operation?

F. For electric motor operated valves have the torques developed during operation been found to be less than the torque limiting settings?