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Georgia Power
the southern electric system

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United States Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region II - Suite 2900
101 Marietta Street, Northwest
Atlanta, Georgia 30323

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Attention: Mr. James P. O'Reilly

We are in receipt of I&E Bulletin 84-03, entitled "Refueling Cavity Water Seal." In response to that Bulletin we have reviewed the design and installation procedure regarding refueling cavity seals for the Vogtle Electric Generating Plant (VEGP). Based upon our review we have determined that VEGP design mitigates the possibility of failure of these seals.

Our conclusions are based upon the following:

1. The seal assembly is of the passive mechanical type, which uses a compressible gasket as the sealing medium (similar to a flat faced flange). Therefore, the VEGP seal assembly is not subject to active failure mechanisms.

2. The seal consists of eight separate assemblies, each of which independantly seals a section of the cavity vent between the inservice inspection ports; there is no overlap. Unlike inflatable pneumatic seal assemblies, which generally consist of one continuous plate (torus) covering the entire opening around the vessel, these separate assemblies are not subject to significant distortion or displacement which could induce seal leakage.

3. The gaskets will be replaced prior to each use to ensure that the mechanical properties including leak tightness of the seal assemblies is maintained during the refueling operation.

Any leakage of the seal resulting from undetected damage to the gasket or assymetric torquing of the holddown bolts during seal installation would be directed to the reactor cavity sump. The cavity sump is monitored by redundant nonsafety-grade level switches and a single safety-grade level transmitter. Seal leakage in excess of the sump pumps' capacity (100 gpm) would be alarmed in the control room when the sump reaches the high level.

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Although failure of the entire cavity seal is not considered probable, an evaluation was performed assuming a failure of an 8-inch section of the gasket between two adjacent holddown bolts. The results of this evaluation are summarized as follows:

1. The initial flowrate into the reactor cavity sump would be approximately 175 gpm.

2. The refueling canal is normally filled by using a residual heat removal (RHR) pump aligned to the refueling water storage tank. Therefore, makeup capacity will be in excess of leakage for the duration of the event.

3. Assuming fuel is being transferred when the seal fails, and no makeup to the refueling canal from the spent fuel pool or any other source, it would take over 15 hours to lower the refueling canal water level (ten feet) enough to expose the top of the assembly being transferred. This is sufficient time to place the assembly in a safe condition.

4. The top of the fuel assemblies in the spent fuel pool are at the same elevation as the refueling cavity water seal. Therefore, seal failure would not result in uncovering the stored spent fuel assemblies.

5. The refueling cavity can be drained down to the level of the refueling cavity seal in under two hours by using one RHR pump to return the water to the refueling water storage tank.

Based on the above, it is Georgia Power Company's position that the current VEGP design is capable of mitigating a failure of the refueling cavity seal without uncovering fuel. Therefore, no corrective action relative to I&E Bulletin 84-03 is considered necessary.

This response contains no proprietary information and may be placed in the NRC Public Document Room.

Yours truly,

D. O. Foster

REF/DOF/tdm

D. O. Foster states that he is the Vice President and Project General Manager of the Vogtle Electric Generating Plant and is authorized to execute this oath on behalf of Georgia Power Company and that to the best of his knowledge and belief the facts set forth in this letter are true.

GPC: H. O. Foster

Sworn and subscribed before me this 5th day of December, 1984.

Jewel W. Chandler
Notary Public, State of Georgia at Large
My Commission Expires: 10/26/88

Notary Public, Georgia, State at Large
My Commission Expires Oct. 26, 1988

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