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November 19, 1999

OG-1777

Project No. 683

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attention: Mr. David B. Matthews, Deputy Director
Division of Reactor Program Management

Subject: B&WOG Generic License Renewal Program Topical Report BAW-2251,
"Demonstration of the Management of Aging Effects for the Reactor
Vessel"

Reference: Letter from Christopher I. Grimes to David J. Firth, October 27, 1999,
entitled Generic License Renewal Program Topical Report Entitled,
"Demonstration of the Management of Aging Effects for the Reactor
Vessel," BAW-2251, June 1996

Gentlemen:

On October 27, 1999, the B&WOG received a request from the NRC staff to reconsider the position that the reactor vessel monitoring pipes are not subject to aging management review since they do not support the reactor vessel pressure boundary. The B&WOG stated in BAW-2251A that the monitoring pipes serve as a leak detection device in the event of reactor coolant egress past the inner O-ring. The inner O-ring serves as the inner barrier to the primary pressure boundary with the outer O-ring providing defense-in-depth. The NRC staff cites in the letter to the B&WOG that the O-rings are consumables and that O-rings are not pressure retaining items in accordance with ASME Section III, NB-2121, NC-2121, and ND-2121. The B&WOG specified in BAW-2251 that the O-rings are not subject to aging management review since they are replaced each refueling outage (i.e., consumables). However, the B&WOG does not agree with the staff's argument that the O-rings do not support the primary pressure boundary in accordance with NB-2121, NC-2121, and ND-2121.

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ASME Section III, NB-2121 (b) states that Material Specification requirements specified by NB-2120 “do not apply to material for items not associated with the pressure retaining function of a component such as shafts, stems, trim, spray nozzles, bearings, bushings, springs and wear plates, *nor to* seals, packing, gaskets, valve seats, and ceramic insulating material and special alloys used as seal material in electrical penetration assemblies.” If seals, packing, gaskets, valve seats, and ceramic insulating materials and special alloys used as seal material in electrical penetration assemblies are not pressure retaining items there would be no need to include “*nor to*” prior to their introduction in NB-2121(b). As is the case with all of the Class 1 bolted connections in the B&W designed components, gasket parameters are considered in the design of the reactor vessel closure with regard to establishing the minimum cross-sectional area of the reactor vessel closure studs.

As discussed in the RAI response contained in Appendix G to BAW-2251A [Letter from D.J. Firth to Mr. David B. Matthews, July 27, 1998, OG-1716], the RV closure that contains the O-rings is designed to ensure that flange rotation during heatup and cooldown will not cause flange separation greater than the amount of O-ring gasket recovery. Both the inner and outer O-rings will remain compressed during and after flange rotation to ensure a leak-tight joint. The B&WOG maintains the position that the inner O-ring does support the primary pressure boundary since O-ring parameters are included in the reactor vessel closure analysis to determine the minimum cross-sectional area of the closure studs. As such, the monitoring pipes do not directly support the reactor vessel pressure boundary function and are not subject to aging management review.

However, it is recommended that the monitoring pipes be removed from the scope of BAW-2251A and addressed on a plant-specific basis at the time of application. The corresponding changes to BAW-2251A are as follows:

Section 2.1.1.1 Upper Shell Assembly, Page 2-3, Line 19

Revise the last sentence in the paragraph as follows “The monitoring pipes are described in Section 2.5.2.”

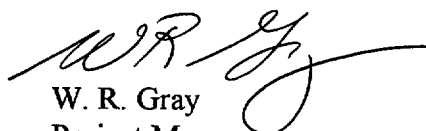
Section 2.5.2 Monitoring Pipes, Page 2-10, Line 15

Delete the last sentence and replace with the following text “These monitoring pipes are not within the scope of this report.”

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Please call me at 804-832-2783 if you need any additional information.

Sincerely,



W. R. Gray
Project Manager
B&W Owners Group Services

WRG/mcl

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|----|---------------|---------------------------|
| c: | R.K. Anand | -US NRC/NRR |
| | R.L. Gill | -Duke Energy Corporation |
| | G.D. Robison | -Duke Energy Corporation |
| | J.D. Gilreath | -Duke Energy Corporation |
| | D.E. Whitaker | -Duke Energy Corporation |
| | G.G. Young | -Entergy Operations, Inc. |
| | R.W. Clark | -Entergy Operations, Inc. |
| | D.F. Spond | -Entergy Operations, Inc. |
| | D.J. Masiero | -GPU Nuclear, Inc. |
| | G.L. Lehmann | -GPU Nuclear, Inc. |
| | Z.B. Fu | -GPU Nuclear, Inc. |
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| | M.A. Rinckel | -Framatome Technologies |
| | R.N. Edwards | -Framatome Technologies |
| | S. Fyfitch | -Framatome Technologies |
| | M.J. DeVan | -Framatome Technologies |
| | B.C. Cardona | -Framatome Technologies |