



CHARLES CENTER • P. O. BOX 1475 • BALTIMORE, MARYLAND 21203

ARTHUR E. LUNDVALL, JR.  
VICE PRESIDENT  
SUPPLY

September 26, 1985

Mr. T. T. Martin, Deputy Regional Administrator  
Region I  
U. S. Nuclear Regulatory Commission  
631 Park Avenue  
King of Prussia, PA 19406

Dear Mr. Martin:

This letter is submitted as a followup concerning an item discussed at the enforcement conference held on August 14, 1985, between members of your staff and BG&E plant management on the status of Post Accident Sampling at Calvert Cliffs. The outstanding item was the status of environmental qualification of the Containment High Range Radiation Monitors, specifically the installation of heat shrink tubing over the cable connectors inside containment.

These radiation monitors were installed in the Calvert Cliffs Unit Nos. 1 and 2 Containment Structures to meet the requirements of NUREG-0737, Item II.F.1, Attachment 3.

The complexity of evolution of environmental qualification requirements over the past six years necessitates a brief summary of the history as it relates to environmental qualification of these cable connectors.

This chronology is included as the enclosure to this letter.

In summary, it is our position that the history of the environmental qualification of these instruments is consistent with the NRC requirements in effect at the time each maintenance or modification action was completed. The present installation also complies with the current requirements of 10 CFR 50.49(k). Had any of these instruments been replaced, they would have been upgraded consistent with the requirement of 10 CFR 50.49(l).

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Nevertheless, on September 6, 1985, the connectors for both Unit 1 and 2 Containment High Range Radiation Monitors inside containment were fitted with Raychem heat shrink tubing. Our subsequent investigation of this issue has demonstrated that this conservative action was not necessary, as shown above.

Should you have any questions regarding this matter, please contact us.

Very truly yours,

A handwritten signature in cursive script, appearing to read "G. E. Lundwall".

AEL/LES/sjb

Enclosure

cc: D. A. Brune, Esquire  
G. F. Trowbridge, Esquire  
D. H. Jaffe, NRC  
T. Foley, NRC

# ENCLOSURE (I)

## History of Maintenance Actions of Containment High Range Radiation Monitor Connectors

<u>Time Frame</u>		<u>Action</u>	<u>NRC EQ Criteria</u>	<u>BG&amp;E Design EQ Criteria</u>	<u>Comments</u>
Unit 1	Unit 2				
December 1980	June 1981	A commercial grade, custom-modified (on-site) connector was installed with heat shrink tubing	NUREG-0588 (Category I)	Raychem heat shrink tubing was specified.	The originally specified connector (Amphenol) was not available due to long lead time (> 9 months).
June 1982	July 1982	Cabling to the monitor was replaced as recommended by the manufacturer. The new connector was available, so it was installed.	NUREG-0588 (Category I)	No heat shrink was specified in the engineering instructions or Technical Manual. The material specification under which the material was purchased included environmental qualification requirements. This documentation was considered acceptable.	The new connector was a relatively high cost, high quality connector. The heat shrink was deemed to be unnecessary. This better connector was being used in several applications at Calvert Cliffs.
July 1985		NRC Inspection Team discovered that no heat shrink was installed on Unit 1, and that the EQ file specified heat shrink was required for the original connector.	10CFR50.49 Para.(k) and (l)	The earlier equipment qualification would be acceptable as specified in 10 CFR 50.49(k).	Complete documentation is required for all Environmentally Qualified equipment. The files now specify that heat shrink tubing will be required for future installations. The sleeving is now installed.