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September 25, 1998

U. S. Nuclear Regulatory Commission  
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant  
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318  
Response to Request for Additional Information for the Review of the Calvert  
Cliffs Nuclear Power Plant, Units 1 & 2, Integrated Plant Assessment Report for  
the Radiation Monitoring System

- REFERENCES:
- (a) Letter from Mr. C. H. Cruse (BGE) to NRC Document Control Desk, dated May 23, 1997, "Request for Review and Approval of System and Commodity Reports for License Renewal"
  - (b) Letter from Mr. D. L. Solorio (NRC) to Mr. C. H. Cruse (BGE), dated August 6, 1998, "Request for Additional Information for the Review of the Calvert Cliffs Nuclear Power Plant, Units 1 & 2, Integrated Plant Assessment Report for Radiation Monitoring System"
- 11  
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Reference (a) forwarded four Baltimore Gas and Electric Company system and commodity reports for license renewal. Reference (b) forwarded questions from NRC staff on one of those four reports, the Integrated Plant Assessment Report for the Radiation Monitoring System. Attachment (!) provides our responses to the questions contained in Reference (b).

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**ATTACHMENT (1)**

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**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION;  
INTEGRATED PLANT ASSESSMENT REPORT FOR THE RADIATION MONITORING  
SYSTEM**

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**Baltimore Gas and Electric Company  
Calvert Cliffs Nuclear Power Plant  
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## ATTACHMENT (1)

### RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION; INTEGRATED PLANT ASSESSMENT REPORT FOR THE RADIATION MONITORING SYSTEM

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#### NRC Question No. 1

In Section 5.14.1.1, System Level Scoping, the process Radiation Monitoring System (RMS) includes the following radiation monitors: plant main vent, waste gas discharge, liquid waste processing discharge, condenser air removal discharge, steam generator blowdown tank discharge, steam generator blowdown recovery, and atmosphere (other than the control room ventilation). In Section 5.14.1.2, Component Level Scoping, all of the above radiation monitors are excluded for the consideration of component level scoping. Provide the justification for eliminating each of the above radiation monitors from the scope of the license renewal.

#### BGE Response

The radiation monitors that monitor the plant main vent (other than the wide range noble gas monitors), waste gas discharge, liquid waste processing discharge, condenser air removal discharge, steam generator blowdown tank discharge, steam generator blowdown recovery, and atmosphere (other than the control room ventilation and the containment isolation valves to the containment atmosphere monitors) are non-safety-related and do not perform any of the system intended functions based on 10 CFR 54.4(a)(1), (2), (3) and (b). Note that while the non-safety-related plant main vents radiation monitors are not in scope, the safety-related wide range effluent gas radiation monitors that monitor the plant main vents are in scope (see Figure 5.14-3 on page 5.14-6). Note also that while the non-safety-related containment atmosphere radiation monitors are not in scope, the containment penetration, including the safety-related containment isolation valves, are in scope (see Figure 5.14-4 on page 5.14-7).

#### NRC Question No. 2

Section 5.14.1.2 states that the shaded areas of Figure 5.14-1 through 5.14-8 indicate which portions of the RMS are within the scope of license renewal. Figure 5.14-1 through 5.14-8 do not have sufficient illustration to explain which components the shaded areas represent. Provide a legend for Figures 5.14-1 through 5.14-8 that defines the components listed within them. Additionally, provide definitions for those acronyms used in these figures that are not already defined in other parts of your license application.

#### BGE Response

Included below are legends for the acronyms and symbols used in Figures 5.14-1 through 5.14-8.

#### Acronym Legend:

AE - Analysis Element (Sensing)	NO - Normally Open
DL - Data Log Point	PDT - Pressure Differential Transmitter
E/E - Voltage to Voltage Signal Converter	PI - Pressure Indicator (Display)
E/I - Voltage to Current Signal Converter	RE - Radiation Element (Sensing)
EFF - Effluent	RI - Radiation Indicator (Display)
FAI - Fails As Is	RIC - Radiation Indicator (Controller)
FC - Fails Closed	RR - Radiation Recorder (Display)
FIS - Flow Indication Switch	SIAS - Safety Injection Actuation Signal
FO - Fails Open	SV - Solenoid Valve
FE - Flow Element (Sensing)	TC - Temperature Controller
FI - Flow Indicator (Display)	TE - Element (Sensing)
FT - Flow Transmitter	XI - Sample Timer (Display)






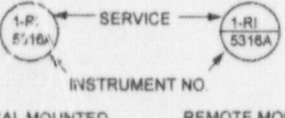
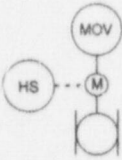









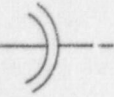



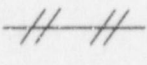
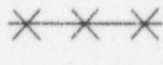
## ATTACHMENT (1)

### RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION; INTEGRATED PLANT ASSESSMENT REPORT FOR THE RADIATION MONITORING SYSTEM

HS - Hand Switch  
 MOV - Motor-Operated Valve  
 NC - Normally Closed  
 NDE - Normally De-Energized

ZS - Position Switch  
 1C10 - Electric Panel Identification  
 Number

#### Symbol Legend:

 <p><b>A</b> - High Efficiency Particulate  <b>C</b> - Charcoal</p> <p style="text-align: right;">- Filter</p>	 <p style="text-align: right;">- Valves</p>	
<p>Audible           Visible </p> <p>O - Open          HH - Very High          H - High          L - Low          LL - Very Low          C - Closed</p> <p style="text-align: right;">- Alarm Annunciator</p>	 <p>NE - Normally Energized          NDE - Normally De-Energized</p> <p style="text-align: right;">- Solenoid Valve</p>	
 <p style="text-align: center;">SERVICE</p> <p style="text-align: center;">INSTRUMENT NO.</p> <p style="text-align: right;">- Instruments</p>	 <p style="text-align: right;">- Motor Operated Valve</p>	
 <p style="text-align: right;">- Flow Gage</p>	 <p style="text-align: right;">- Flow Orifice</p>	 <p style="text-align: right;">- Drain Trap</p>
 <p style="text-align: right;">- Control Valve</p>	 <p style="text-align: right;">- Pump</p>	 <p style="text-align: right;">- Pipe Cap</p>
 <p style="text-align: right;">- Hose Connection</p>	 <p style="text-align: right;">- Pipe Reducer</p>	 <p style="text-align: right;">- Drain Funnel</p>
 <p style="text-align: right;">- Containment Penetration</p>	 <p style="text-align: right;">- Data Log Point</p>	 <p style="text-align: right;">- Quick Disconnect Pipe Coupling</p>
 <p style="text-align: right;">- Instrument Electrical Line</p>	 <p style="text-align: right;">- Instrument Air Line</p>	 <p style="text-align: right;">- Electric Heat Tracing</p>

ATTACHMENT (1)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION;  
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1 - RE - 5317A - Radiation Element	F - Filter	1 - AE - 5415 - Microprocessor
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**NRC Question No. 3**

Are there any parts of the systems, structures, and components that are inaccessible for inspection? If so, describe what aging management program will be relied upon to maintain the integrity of the inaccessible areas. If the aging management program for the inaccessible areas is an evaluation of the inaccessible areas based on conditions found in surrounding accessible areas, please provide information to show that conditions would exist in accessible areas that would indicate the presence of or result in degradation to such inaccessible areas. If different aging effects or aging management techniques are needed for the inaccessible areas, please provide a summary to address the following elements for the inaccessible areas: (1) Preventive actions that will mitigate or prevent aging degradation; (2) Parameters monitored or inspected relative to degradation of specific structure and component intended functions; (3) Detection of aging effects before loss of structure and component intended functions; (4) Monitoring, trending, inspection, testing frequency, and sample size to ensure timely detection of aging effects and corrective actions; (5) Acceptance criteria to ensure structure and component intended functions; (6) Operating experience that provides objective evidence to demonstrate that the effects of aging will be adequately managed.

**BGE Response**

All parts of the RMS at Calvert Cliffs that are within scope for License Renewal are accessible for testing and inspection, as needed, for managing the plausible aging effects.