

CHARLES H. CRUSE

Vice President
Nuclear Energy

Baltimore Gas and Electric Company
Calvert Cliffs Nuclear Power Plant
1650 Calvert Cliffs Parkway
Lusby, Maryland 20657
410 495-4455



November 2, 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
Responses to Requests for Additional Information for the Review of the Calvert
Cliffs Nuclear Power Plant, Units 1 & 2, Integrated Plant Assessment on
Scoping

REFERENCES:

- (a) Letter from Mr. C. H. Cruse (BGE) to NRC Document Control Desk, dated April 8, 1998, "Application for License Renewal"
- (b) Letter from Mr. D. L. Solorio (NRC) to Mr. C. H. Cruse (BGE), August 27, 1998, "Request for Additional Information for the Review of the Calvert Cliffs Nuclear Power Plant, Units 1 & 2, Integrated Plant Assessment Report for Scoping"

Reference (a) forwarded Baltimore Gas and Electric Company's (BGE's) application for license renewal. Reference (b) forwarded a question from NRC staff on the scoping process relevant to Reference (a). Attachment (1) provides our responses to the question contained in Reference (b).

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ATTACHMENT (1)

**RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION;
INTEGRATED PLANT ASSESSMENT ON SCOPING**

**Baltimore Gas and Electric Company
Calvert Cliffs Nuclear Power Plant
November 2, 1998**

ATTACHMENT (1)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION;
INTEGRATED PLANT ASSESSMENT ON SCOPING

NRC Question No. 10.1

Table 3-1 in Section 2.0 of Appendix A to the application (*Baltimore Gas and Electric Company's [BGE's] License Renewal Application [LRA]*) lists the Calvert Cliffs Nuclear Power Plant (CCNPP) systems and structures. Appendix A to the application contains the aging management review of certain systems and structures which are within the scope of license renewal. Aging management of many of the systems and structures listed in Table 3-1 are not apparently discussed in the application. These latter systems and structures may not be within the scope of license renewal or may have been addressed as part of other systems and structures. To assess whether BGE has identified CCNPP systems and structures within the scope of license renewal, the staff is sampling the following CCNPP systems and structures from Table 3-1, which are not apparently discussed in the application:

CCNPP	
<u>Designation</u>	
2	Electrical 125VDC Distribution
4	Electrical 4kV Transformers & Buses
5	Electrical 480V Transformers & Buses
48	Engineering Safety Features Actuation
58	Reactor Protective System (RPS)
	Transformer Foundation
	Switchgear Structure
	Well Water Pump House

For the above CCNPP systems and structures, please provide a brief description of their functions and indicate whether any of the functions are intended functions as defined in 10 CFR 54.4. For systems and structures with intended functions, that is, within the scope of license renewal, briefly describe where the system and structure components (such as bus, insulated cables and connections, insulators, and transmission conductors) are evaluated for aging management in the application.

BGE Response

For the purposes of this discussion, intended function means a function that satisfies the criteria of 10 CFR 54.4.

System 002

System 002 provides five intended functions, only one of which is passive. The functions are listed below:

- (1) Post-accident monitoring (PAM) (active function);
- (2) To provide 125 VDC vital auxiliary power to systems/components used to mitigate design basis events (active function);
- (3) To provide seismic integrity and/or protection of safety-related components (passive function);
- (4) To provide essential battery-backed power to support safe shutdown during a severe fire concurrent with a loss of offsite power (active function); and
- (5) Station blackout (active function).

ATTACHMENT (1)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION; INTEGRATED PLANT ASSESSMENT ON SCOPING

The passive components (bus cabinets and panels) associated with intended function (3) above are addressed in the electrical commodities Section 6.2 of the License Renewal Application (LRA.).

The System 002 bus cabinets are covered under Group 3. As noted, these bus cabinets are subject to wear and electrical stress. Preventive maintenance (PM) tasks provide the necessary aging management for the effects of these aging mechanisms. The System 002 panels are covered under Group 7. These panels are subject to wear and electrical stress. "Clean and Inspect" PM Task EPM02800 is credited with managing the effects of these aging mechanisms for these panels.

System 004

System 004 provides seven intended functions, only one of which is passive. The functions are listed below:

- (1) PAM (active function);
- (2) To provide 4kV vital auxiliary power to systems/components used to mitigate design basis events (active function);
- (3) To provide signals to Engineered Safety Features Actuation Signal (ESFAS) in the event of an undervoltage condition (active function);
- (4) To provide load shed verification signals to diesel generator feeder breaker control circuitry (active function);
- (5) To provide seismic integrity and/or protection of safety-related components (passive function);
- (6) To provide essential 4kV power to support safe shutdown during a severe fire concurrent with a loss of offsite power (active function); and
- (7) Station blackout (active function).

The passive components (bus cabinets) associated with intended function (5) above are addressed in the electrical commodities Section 6.2 of the LRA.

The System 004 bus cabinets are covered under Group 3. As noted, these bus cabinets are subject to wear, electrical stress, and fatigue. Preventive maintenance tasks provide the necessary aging management for the effects of these aging mechanisms.

System 005

System 005 provides five intended functions, only one of which is passive. The functions are listed below:

- (1) PAM (active function);
- (2) To provide 480V vital auxiliary power to systems/components used to mitigate design basis events (active function);
- (3) To provide reactivity control by interrupting the 480V AC power supply to the control element drive mechanism motor generator sets to ensure safe shutdown in the event of a postulated severe fire (active function);
- (4) To provide seismic integrity and/or protection of safety-related components (passive function); and

ATTACHMENT (1)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION; INTEGRATED PLANT ASSESSMENT ON SCOPING

- (5) Station blackout (active function).

The passive components (bus cabinets) associated with intended function (4) above are addressed in the electrical commodities Section 6.2 of the LRA.

The System 005 bus cabinets are covered under Group 3. As noted, these bus cabinets are subject to wear, electrical stress, and fatigue. "Clean and Inspect" PM Task EPM 05900 is credited with managing the effects of these aging mechanisms.

System 048

System 048 provides 16 intended functions, only 2 of which are passive. The functions are listed below:

- (1) Processing of input signals and initiation of Safety Injection (Safety Injection Actuation Signal) (active function);
- (2) Processing of input signals and initiation of Containment Spray (Containment Spray Actuation Signal) (active function);
- (3) Processing of input signals and initiation of Containment Isolation (Containment Isolation Signal) (active function);
- (4) Processing of input signals and initiation of Safety Injection Recirculation (Recirculation Actuation Signal) (active function);
- (5) Processing of input signals and initiation of Containment Radiation Signal (active function);
- (6) Processing of input signals and initiation of Steam Generator Isolation (Steam Generator Isolation Signal) (active function);
- (7) Processing of input signals and initiation of Loss-of-Coolant Incident sequencer (active function);
- (8) Processing of input signals and initiation of Chemical and Volume Control Isolation (Chemical And Volume Control Isolation Signal) (active function);
- (9) To provide seismic integrity and/or protection of safety-related components (passive function);
- (10) PAM (active function);
- (11) Processing of input signals and initiation of shutdown sequencer (active function);
- (12) To process sensed signals for RPS trips and actuation of Auxiliary Feedwater actuation (active function);
- (13) To provide load shedding in the event of an undervoltage condition (active function);
- (14) Processing of input signals and initiation of reactor trip (anticipated transient without scram) (active function);
- (15) Processing of input signals and initiation of turbine trip (Diverse Turbine Trip) (active function);
- (16) To maintain pressure boundary (passive function).

ATTACHMENT (1)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION; INTEGRATED PLANT ASSESSMENT ON SCOPING

The passive components (panels) associated with intended function (9) above are addressed in the "Electrical Commodities" Section 6.2 of the LRA.

The System 048 panels are covered under Group 7. As noted, these panels are subject to wear and electrical stress. "Clean and Inspect" PM Tasks IPM13000 and IPM130001 are credited with managing the effects of these aging mechanisms.

The components associated with intended function (16) above are the instrument lines and valves associated with the containment pressure transmitters and are included in the Section 6.4 (Instrument Lines) of the LRA. The transmitters are excluded from the requirement for an aging management review.

System 058

System 058 provides 10 intended functions, only 3 of which are passive. The functions are listed below:

- (1) Initiate reactor trip (active function);
- (2) PAM (active function);
- (3) Provide pressurizer pressure signals to ESFAS (active function);
- (4) Provide steam generator pressure signals to ESFAS and Auxiliary Feedwater Actuation Signal Logic (active function);
- (5) Provide Reactor Coolant System temperature signals to indicators and subcooled margin monitor (active function);
- (6) Provide Diverse Turbine Trip on conditions indicative of an anticipated transient without scram (active function);
- (7) To maintain electrical continuity and/or provide protection of the electrical system (passive function);
- (8) To provide seismic integrity and/or protection of safety-related components (passive function);
- (9) To maintain the pressure boundary of the system (passive function); and
- (10) Environmental qualification function (active function).

The components associated with intended function (7) above were all identified as active. This set of components included coils, trip units, fuses, relays, power supplies, and indicating lights.

The components associated with intended function (8) above include the RPS trip switchgear cabinets and panels addressed in the "Electrical Commodities" Section 6.2 of the LRA.

The RPS trip switchgear cabinets are covered under Group 2. These cabinets are subject to wear, electrical stress, and fatigue. "Reactor Trip Circuit Breaker Inspection" PM Task EPM 58500 is credited with managing the effects of these aging mechanisms. The RPS panels are covered under Group 7. These panels are subject to wear and electrical stress. "Clean and Inspect" PM Tasks IPM13118 and IPM13119 are credited with managing the effects of these aging mechanisms.

ATTACHMENT (1)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION; INTEGRATED PLANT ASSESSMENT ON SCOPING

The components associated with intended function (9) above were scoped in other systems. The pressure boundary maintaining components requiring aging management review associated with the steam generator pressure transmitters were scoped in the Feedwater System. The cold and hot leg resistance temperature detector wells are addressed in the Reactor Coolant System.

The cables associated with systems 002, 004, 005, 048, and 058 are addressed in Section 6.1 (Cables) of the LRA.

Structural Components

The structural components listed in the request for additional information, transformer foundation, switchgear structure, and well water pump house have no intended functions; i.e., they have no functions that meet the criteria of 10 CFR 54.4. The following is a description of their functions:

Transformer Foundations	To provide a means of anchoring and supporting plant transformers and to maintain those transformers on a level orientation**
Switchgear Structure	House 13kV switchgear associated with 13kV plant service*
Well Water Pump House	To house and protect the well water carbon filters and pretreated water booster pumps from the weather

* Switchgear structure as used here are the 13kV switchgear houses along the Plant West Road. There are 4kV switchgear structures, 480V load center switchgear structures, and 480V control and motor control centers in the scope of License Renewal. These are addressed in the "Electrical Commodities" Section 6.2 of the LRA.

** Plant transformers include the following 10 transformers:

- (a) Two main unit transformers that step up generator output to 500kV;
- (b) Two 500kV-13kV plant service transformers; and
- (c) Six 13kV-4kV unit service transformers.

All of these are outside and do not meet the scoping criteria of 10 CFR 54.4 for License Renewal.