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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 Report for
the Auxiliary Feedwater System

REFERENCES:

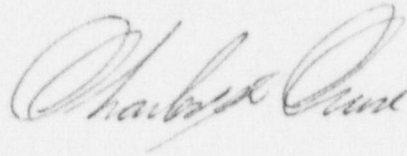
- (a) Letter from Mr. C. H. Cruse (BGE) to NRC Document Control Desk, dated October 22, 1997, "Request for Review and Approval of System and Commodity Reports for License Renewal"
- (b) Letter from Mr. David L. Solorio (NRC) to Mr. Charles H. Cruse (BGE), August 21, 1998, "Request for Additional Information for the Review of the Calvert Cliffs Nuclear Power Plant, Units 1 & 2, Integrated Plant Assessment Report for the Auxiliary Feedwater System"

Reference (a) forwarded four Baltimore Gas and Electric Company system and commodity reports for license renewal. Reference (b) forwarded questions from NRC staff on the scoping section of one of those four reports, the Integrated Plant Assessment Report for the Auxiliary Feedwater System. Attachment (1) provides our responses to the questions contained in Reference (b).

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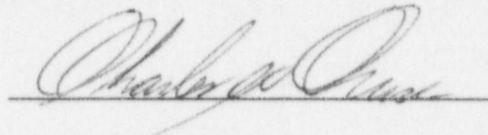
Should you have further questions regarding this matter, we will be pleased to discuss them with you.

Very truly yours,



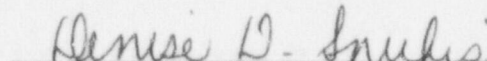
STATE OF MARYLAND :
: TO WIT:
COUNTY OF CALVERT :

I, Charles H. Cruse, being duly sworn, state that I am Vice President, Nuclear Energy Division, Baltimore Gas and Electric Company (BGE), and that I am duly authorized to execute and file this response on behalf of BGE. To the best of my knowledge and belief, the statements contained in this document are true and correct. To the extent that these statements are not based on my personal knowledge, they are based upon information provided by other BGE employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.



Subscribed and sworn before me, a Notary Public in and for the State of Maryland and County of Calvert, this 2nd day of November, 1998.

WITNESS my Hand and Notarial Seal:


Notary Public

My Commission Expires:

2/1/2002
Date

CHC/KRE/dlm

Attachment: (1) Response to Request for Additional Information; Integrated Plant Assessment Report for the Auxiliary Feedwater System

cc: R. S. Fleishman, Esquire
J. E. Silberg, Esquire
S. S. Bajwa, NRC
A. W. Dromerick, NRC
H. J. Miller, NRC

C. I. Grimes, NRC
D. L. Solorio, NRC
Resident Inspector, NRC
R. I. McLean, DNR
J. H. Walter, PSC

ATTACHMENT (1)

BALTIMORE GAS AND ELECTRIC COMPANY

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION;

INTEGRATED PLANT ASSESSMENT REPORT FOR THE AUXILIARY FEEDWATER SYSTEM

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

ATTACHMENT (1)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION; INTEGRATED PLANT ASSESSMENT REPORT FOR THE AUXILIARY FEEDWATER SYSTEM

NRC Question No. 5.1.1

The licensee's simplified drawing (Figure 5.1-1) and the description of the portion of the Auxiliary Feedwater (AFW) System that is within the scope of license renewal in Section 5.1.1.2 (of *Baltimore Gas and Electric Company's [BGE's] License Renewal Application [LRA]*), including the list of the 47 device types on page 5.1-6, were compared with Figure 10-13, "Auxiliary Feedwater - Unit 2," (also labeled Drawing 84-312, Revision 2) obtained from the Calvert Cliffs Nuclear Power Plant Updated Final Safety Analysis Report. Several components identified in Figure 10-13 are not listed as "device types" in Section 5.1.1.2. These components include the local temperature indicators on the two AFW turbines, the steam traps on the piping from the main steam supply lines to each AFW turbine, and the steam supply stop and control valves to each AFW turbine. Nor was the exhaust piping from the AFW turbines to the roof exhausts identified in Section 5.1, "Auxiliary Feedwater."

Are these instruments and components within the scope of license renewal? If not, explain why these instruments and components are not within the scope of license renewal. If so, provide a cross-reference to where these components are addressed in the LRA or explain why the scoping process as described in Section 2.0 of LRA did not identify these components/instruments?

BGE Response

The scoping of the four areas in question are as follows:

- Local temperature indicators on the two AFW turbines — These components are not within the scope of License Renewal. The temperature indicators shown on Calvert Cliffs Drawing 84312 are the inboard and outboard turbine oil reservoir temperature indicators. These items are non-safety-related and as such have no intended functions for license renewal.
- Steam traps on the piping from the main steam supply lines to each AFW turbine — The indicated items are not "steam traps" per se, but are steam drain arrangements. These "components" are within the scope of license renewal; however, they are within the scope of the Main Steam System (Section 5.12 of the LRA), not the AFW System. The boundary between these two systems, as evaluated, is at the AFW pump turbine throttle/stop valves (see below). All the steam "drains" are upstream of these valves; hence, they are included with the Main Steam System.
- Steam supply stop and control valves to each AFW turbine — These components are within the scope of license renewal. The components described as "Stop & CV" on Drawing 84312 are the AFW pump turbine throttle/stop valves. These valves are included under the listing for "Control Valve and Control Valve Operator" in Section 5.1.1.2 of the LRA.
- Exhaust piping from the AFW turbines to the roof exhausts — These components are not within the scope of license renewal. The piping is non-safety-related and has no intended functions for license renewal.

NRC Question No. 5.1.2

The simplified drawing Figure 5.1-1 and the system interface discussion in Section 5.1.1.1 do not provide sufficient detail or are unclear regarding the transitions between the AFW System and the interfacing systems.

For example, in Section 5.1.1.1, under System Interfaces, the interface for the Main Steam System is defined as "The turbine throttle valves through the governor valves to the turbine inlet." However,

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Figure 5.1-1 shows the interface for the Main Steam System extending back beyond the throttle valve to a normally closed (and undefined) valve in the Main Steam System. This same question applies to other systems' interfaces in Figure 5.1-1, such as Auxiliary Steam.

Please provide a modified version of Figure 5.1-1 or use markups of other existing plant drawings that have sufficient detail such that the transition (focusing on components when applicable) between the AFW System and its interfacing systems can be ascertained by the staff.

BGE Response

The interfaces of the AFW System with the interfacing systems shown on Figure 5.1-1 are clarified as follows. We believe that with these clarifications, Figure 5.1-1 provides sufficient detail regarding these interfaces:

- Demineralized Water and Condensate Storage System — As described in Section 5.1.1.1 and as shown on Figure 5.1-1, the entire Condensate Storage Tank (CST) No. 12, and the piping to the suctions of the AFW pumps, are within the scope of the AFW System. In addition, as shown on Figure 5.1-1, the AFW suction piping to the other two CSTs (11 and 21) is within the scope of the AFW System up to and including the closed hand valves. These closed hand valves are not shown on Drawing 84312. The tank side of these two valves, including the Tanks (11 and 21), is non-safety-related and is only within the scope of license renewal for Fire Protection functions. It is contained in Section 5.10 of the LRA.
- Main Steam System — The interface is at the components shown on Drawing 84312 as the "Stop & CV" for each AFW pump turbine. These components are the AFW pump turbine throttle/stop valves. These valves are included in the AFW System scope; upstream of these valves is included with the Main Steam System.
- Chemical Addition System — The interface is at the components shown on Drawing 84312 as 2-AFW-177, 2-CA-178, and 2-CA-331. The AFW side piping up to and including these valves is within the scope of the AFW System. The chemical addition side of the listed valves is non-safety-related and is not within the scope of license renewal.
- Auxiliary Steam System — As described in Section 5.1.1.1, there is no actual physical interface between the AFW and Auxiliary Steam Systems, because Auxiliary Steam taps into the Main Steam System upstream of the Main Steam/AFW interface.
- Fire Protection System — The interface is at the component shown on Drawing 84312 as 2-AFW-180. The AFW side piping up to and including this valve is within the scope of the AFW System. The piping up to the hose connection on the Fire Protection side of the listed valves is non-safety-related and is not within the scope of license renewal (not used for Fire Protection).
- Compressed Air System — The compressed air components used to operate the various control valves in the AFW System between the AFW pumps discharge and the steam generators (and also the unit cross-connect valves) are within the scope of the AFW System. These components include the control valve operators themselves and associated current/pneumatic devices, solenoid valves, and transfer and isolation hand valves. The Compressed Air System components that supply the air to the control valve arrangements are within the scope of the Compressed Air System (Section 5.4 of the LRA).
- Saltwater Air Compressors — As described in Section 5.1.1.1, there is no actual physical interface between the AFW and the saltwater air compressors. The saltwater air compressors

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interface with the Compressed Air System, and therefore saltwater air compressors air could potentially be introduced to the compressed air components that are within the scope of the AFW System.

- Reactor Coolant System — As described in Section 5.1.1.1, the AFW piping up to but not including the steam generator AFW nozzles is within the scope of the AFW System. The steam generator AFW nozzles are within the scope of the Reactor Coolant System (Section 4.1 of the LRA).

Detailed information concerning these interfaces is readily available onsite for review.

NRC Question No. 5.1.3

Page 5.1-6 includes the list of AFW System device types designated as within the scope of license renewal because they have at least one intended function. Several of these device types pertain to the monitoring of condensate level in CST No. 12 and are not included on the simplified drawing.

Please provide a more detailed drawing or an additional description of the CST components that support this intended function. Markups of existing drawings would be an alternative which would probably provide sufficient detail. Additionally, include the level indication piping and components and indicate interfaces with other support systems (if any) in the drawings and/or descriptions provided to the staff.

BGE Response

Two level transmitters provide CST No. 12 level indication. These level transmitters support the following four intended functions:

- Provide AFW to the steam generators for decay heat removal;
- Maintain the pressure boundary of the system;
- For environmental qualification (10 CFR 50.49) - Maintain functionality of electrical components as addressed by the environmental qualification program, and provide information used to assess the plant and environs condition during and following an accident; and
- For fire protection (10 CFR 50.48) - Monitor essential AFW parameters to ensure safe shutdown in the event of a postulated fire. Parameters monitored include AFW pump discharge pressure and No. 12 CST level. Provide alternate control of the AFW System via local hand valves, flow transmitters, and current/pneumatic components at the auxiliary shutdown panel to ensure safe shutdown in the event of a postulated fire.

Page 5.1-7 indicates that of these four functions, only maintaining the pressure boundary of the system was determined to be passive. Providing indication of a plant condition, for example, monitoring of condensate level, is an active function.

The last paragraph of Section 5.1.1.2, instruments and associated tubing, supports, etc., are evaluated for the effects of aging in Section 6.4, "Instrument Lines," of the BGE LRA. Cables associated with the level transmitters were included in the cable population evaluated in Section 6.1, "Cables" of the BGE LRA.