



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

ELECTRIC ENGINEERING  
DEPARTMENT

January 17, 1983

Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Attention: Mr. David H. Jaffe  
Operating Reactors Branch #3  
Division of Licensing

Subject: Calvert Cliffs Nuclear Power Plant  
Unit No. 2, Docket No. 50-318  
Auxiliary Feedwater Modifications

The status of the auxiliary feedwater modifications for Unit 2 during the Fall 1982 Refueling Outage has been the subject of many phone conversations between yourself and our Messrs. L. Wenger and W. Holston. As discussed, we anticipate construction and testing of the motor driven train will be complete by the end of the outage.

At present, we will not receive the spare parts for the motor driven pump until May, 1983. This could place us in a position where we are not able to meet the Limiting Condition for Operation of Technical Specification 3.7.1.2. With the motor driven pump disabled due to lack of spares, we would face a significant period of loss of power production on Unit 2.

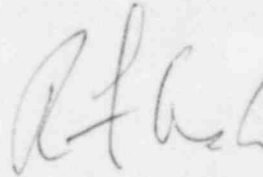
To mitigate the loss of availability on Unit 2, we have drafted the enclosed Technical Specification changes. These changes allow the operation of the Unit with two operable steam turbine driven Auxiliary Feedwater pumps. The justification for these changes is included in the attached letter.

These changes have been reviewed by our management for an unreviewed safety question and approved. Should the need arise for their use, we would forward the attached letter and Technical Specification changes with check to your organization. This draft copy is for your advance information.

A001

January 17, 1983

Should you have any questions, feel free to contact us.



R. F. Ash  
Supervising Engineer  
Nuclear Generation Engineering Section

WCH/RFA/tej

cc: Messrs. J. A. Biddison, Esquire  
G. F. Trowbridge, Esquire  
R. E. Architzel, NRC

**DRAFT**

December 00, 1982

Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

ATTENTION: Mr. Robert A. Clark, Chief  
Operating Reactors Branch #3  
Division of Licensing

SUBJECT: Calvert Cliffs Nuclear Power Plant  
Unit No. 2 Docket No. 50-318  
Request for Amendment

REFERENCES: a) Letter A. E. Lundvall, Jr. to R. A. Clark of November 5, 1982  
b) Letter A. E. Lundvall, Jr. to R. A. Clark of November 17, 1982  
c) Letter R. C. L. Olson to R. A. Clark of November 22, 1982

Gentlemen:

The Baltimore Gas and Electric Company hereby requests an Amendment to its Operating License No. DPR-69 for Calvert Cliffs Unit No. 2, with the submittal of the enclosed proposed changes to the Technical Specifications.

**Proposed Change** (BG&E FCR 82-1052 Supplement 1)

Delete the following pages of the Unit 2 Technical Specifications and add new pages as indicated:

- a) delete page B7-2 and add new page B7-2, Attachment 1
- b) delete page 3-21 and add new page 3-21, Attachment 2
- c) delete page 3-41 and add new page 3-41, Attachment 3
- d) delete page 7-5 and add new page 7-5, Attachment 4
- e) delete page 7-5a and add new 7-5a, Attachment 5

Mr. R. A. Clark  
December 00, 1982  
Page 2

#### DISCUSSION AND JUSTIFICATION

Reference (a) forwarded Technical Specification changes, necessary to implement our Third Train Auxiliary Feedwater Modifications. These modifications were implemented to meet the Post TMI Requirements for Operating Reactors (NUREG-0737 TMI action plan), Item II.E.1.2 and the NRC Action Plan developed as a result of the TMI-2 Accident (NUREG-0660, Vol. 1). As discussed in reference (a) a major portion of these modifications involved the installation of a new electric driven pump train and associated controls. Reference (b) forwarded a reanalysis of those Design Basis events which were affected by these modifications. The accidents analyzed included the Main Steam Line Break, Feedline Break, and Loss of Feedwater events. Reference (c) included an updated Piping and Instrument Diagram and the Auxiliary Feedwater Actuation System Logic Program.

The above referenced technical specifications were submitted with the Unit 2 Cycle 5 reload submittal to enable startup of Unit 2 following modifications performed on the AFW System during the Fall 1982 refueling outage. At the present time we are not able to meet the Limiting Condition for operation of Technical Specification 3.7.1.2 due to a failure of the motor driven pump. We do not expect the spare parts necessary to repair the pump to be available until \*.

To allow continued operation with an inoperable motor driven train, the enclosed changes to the Technical Specification will be necessary. These changes delete the requirement to maintain the motor driven pump operational. In this case the AFW system design will rely on two steam driven pumps, with the following provisions as discussed below. We

Mr. R. A. Clark  
December 00, 1982  
Page 3

consider these changes to be of a temporary nature and the present technical specifications would be resubmitted upon repair of the motor driven pump.

Our justification for submitting these changes are as follows:

- (1) Calvert Cliffs was licensed and operated safely with two turbine driven Auxiliary Feedwater pumps prior to the Unit 2 Cycle 5 reload. During the Auxiliary Feedwater modifications significant improvements were incorporated into the original design. Therefore, the steam driven train is more reliable than the original design. These changes include:
  - a. The steam inlets to the Auxiliary Feedwater pump turbines are now fail "open" control valves. Previously they were fail "as is" motor operated valves. With a loss of off site power we will now have steam flow to the pumps without requiring operator action.
  - b. The Auxiliary Feedwater Actuation Signal is generated from the newly installed Wide Range Steam Generator Level Indication System. The automatic signal to start the pumps will therefore result in less unnecessary challenges to the system. The narrow range utilized before resulted in an actuation signal with each reactor trip due to steam generator shrink levels.
  - c. The flow control valve in the discharge line was modified in order to maintain a constant Auxiliary Feedwater flow regardless of steam generator back pressure. This feature reduces the possibility of an overcooling or undercooling transient.
  - d. Two air to close, fail open valves were installed in series in each steam generator Auxiliary Feedwater flow leg. These valves automatically shut, via

independent signals, when a ruptured generator occurs.

- e. Detection logic has been installed to provide the operator in the control room with indication that an Auxiliary Feedwater discharge piping rupture has occurred. The operator can then take rapid action to isolate the ruptured line and direct additional flow as necessary via the intact line.
2. The Design Basis events issued in reference (b) were evaluated in light of the proposed change and were found still valid. The number of available Auxiliary Feedwater flow legs is cut in half by isolating the motor driven pump. It is therefore necessary to double the flow control valve setpoint of the two remaining steam driven pump legs from that value found in the Technical Specifications in reference (a).
3. The Action statement for the motor driven pumps in the present technical specification (reference (a)) requires that the plant be shutdown until repairs can be completed. This outage would create a significant financial impact on our company.

These proposed Technical Specification changes do not constitute an unreviewed safety question. The Bases for the Auxiliary Feedwater Technical Specification as forwarded in reference (b) have changed but the overall quantity of Auxiliary Feedwater flow to the steam generators is not reduced. A review of the Auxiliary Feedwater Analyses has shown that the proposed change will not present an undue risk to the health and safety of the public.

Mr. R. A. Clark  
December 00, 1982  
Page 5

#### SAFETY COMMITTEE REVIEW

This proposed change to the Technical Specifications has been reviewed by our Plant Operations and Safety and Off-Site Safety Review Committees, and they have concluded that implementation of this change will not result in an undue risk to the health and safety of the public.

#### FEE DETERMINATION

We have determined, pursuant to 10 CFR Part 170, Paragraph 170.22, that this Amendment request consists of a Class III amendment for Calvert Cliffs Unit No 2, and accordingly, we are including BG&E Check No. \_\_\_\_\_ in the amount of \$4,000.00 to cover the fee for this request.

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

#### **BALTIMORE GAS AND ELECTRIC COMPANY**

By: \_\_\_\_\_  
Vice President-Supply

cc: J. A. Biddison, Esquire  
G. F. Trowbridge, Esquire  
D. H. Jaffe, NRC  
R. E. Architzel, NRC

\* Date to be supplied if pump fails.