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DEPARTMENT

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

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

Subject: Calvert Cliffs Nuclear Power Plant
Units Nos. 1 & 2, Dockets Nos. 50-317 & 50-318
<u>NRC Requirements for Aux Feed Systems</u>

References: (a) BG&E letter dated 11/18/80 from A. E. Lundvall, Jr. to R. A. Clark, same subject.
(b) Branch Technical Position APCSB 3-1, Protection Against Postulated Piping Failures in Fluid Systems Outside Containment
(c) Branch Technical Position MEB 3-1, Postulated Break and Leakage Locations in Fluid System Piping Outside Containment
(c) ANSI/ANS-51.10-1979, Auxiliary Feedwater System for Pressurized Water Reactors

Gentlemen:

In phone conversations with the NRC we have discussed our position on a High Energy Line Break (HELB) analysis for the third train to our Aux Feedwater System. We feel that as long as the third train is only used for emergencies a HELB analysis is not required. We present the following for your review.

In reference (b), page 3.6.1-16, a High-Energy Fluid System is defined as follows: "Fluid systems that, during <u>normal plant conditions,</u> are either in operation or maintained pressurized under conditions where either or both of the following are met: a. maximum operating temperature exceeds 200°F, or b. maximum operating pressure exceeds 275 psig." Normal Plant Conditions are defined as: "Plant operating conditions during reactor startup, operation at power, hot standby, or reactor cooldown to cold shutdown condition." Finally, Upset Plant Conditions are defined as "Plant operating conditions during system transients that may occur with moderate frequency during plant service life and are anticipated operational occurrences, but not during system testing." Due to the fact that the third train would not be used during normal plant conditions, as contrasted to upset plant conditions, it would not be classified as a High Energy System.

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Item e. on page 3.6.2-14 of reference (c); states: "Through-wall leakage cracks instead of breaks may be postulated in the piping of those fluid systems that qualify as high-energy fluid systems for only short operational periods but qualify as moderate-energy fluid systems for the major operational period." Moderate energy systems are defined in reference (b) as: "Fluid systems that, during normal plant conditions, are either in operation or maintained pressurized (above atmospheric pressure) under conditions where both of the following are met: a) maximum operating temperature is 200°F or less, and b) maximum operating pressure is 275 psig or less." Footnote 6, on page 3.6.2-14 of reference (c) states that, "An operational period is considered "short" if the fraction of time that the system operates within the pressure-temperature conditions specified for high-energy fluid systems is about 2 percent of the time that the system operates as a moderate-energy fluid system (e.g., systems such as reactor decay heat removal system qualify as moderate-energy fluid systems, however, systems such as auxiliary feed-water systems operated during PWR reactor startup, hot standby, or shutdown qualify as high-energy fluid systems)." Attached you will find justification for why we feel we can meet the 2% criteria for classifying the system as a moderate-energy system. We feel that the footnote 6 comment relative to aux feed systems being classified as high-energy fluid systems is in reference to those used for normal plant conditions.

Section 3.2.2.3 of reference (d) states, "For systems or portions of systems which operate only during conditions II, III, or IV, pipe breaks need not be considered as initiating events." If the system were used for Condition I events (with the exception of testing) a HELB analysis would have to be performed. ANSI N18.2-1973, section 2.1 defines the four plant operating conditions as:

(1) Condition I Normal Operation
(2) Condition II Incidents of Moderate Frequency
(3) Condition III Infrequent Incidents
(4) Condition IV Limiting Faults

We feel that this reference added further clarification to the references from the Standard Review Plan.

In summary, based upon the above references, we will administratively control the use of the motor-driven train of the auxiliary feedwater system to emergency operation only. Piping failures will be analyzed in accordance with Branch Technical Position MEB 3-1. We will not restrict the use of the existing steam-driven train as it has already been reviewed and approved in our FSAR section 10A.5

Should you have any questions, feel free to contact us. In the interest of maintaining our schedule for the Aux Feedwater Modification, we request that you reply to this letter no later than 15 January 1981.

Very truly yours,

R F Ash

R. F. Ash
Chief Nuclear Engineer

cc: J. A. Biddison, Esquire
G. F. Trowbridge, Esquire
Messrs. E. L. Conner, Jr. - NRC
J. W. Brothers - Bechtel
D. G. Eisenhut - NRC
P. W. Kruse - CE
W. Essel - CE

ATTACHMENT

Expected Run Time Hours on Motor Driven AFW Train for 18 Month Fuel Cycle

Item 1 Cooldowns

Assume one (1) cooldown requiring use of AFW system because Main Feed unavailable - 20 hrs. run time per occurrence -	20 Hrs Total

Item 2 Testing

STP-0-5 2 hrs per month during cycle -	36 Hrs Total
Post Maintenance Testing	10 Hrs Total

Item 3 Usage after R_x trip

Assume nine (9) trips per cycle, duration of use equal to 9 1/4 hrs per trip -	83.25 Hrs Total
TOTAL RUN TIME	149.25 Hrs

No. of hrs in 18-month cycle = 365 x 24 x 1.5 = 13,104 hours

% of Run Time for Motor Driven AFW Train = 149.25 ÷ 13,104 x 100 = 1.14%