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July 6, 1990

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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
Revised Schedule of Plant Modifications to Correct Control Room Human
Engineering Discrepancies (TACs 56110 and 56111)

REFERENCE: (a) Letter from Mr. J. A. Tiernan (BG&E to NRC Document Control
Desk, dated June 30, 1988, Supplemental Detailed Control Room
Design Review Summary Report

Gentlemen:

The purpose of this letter is to provide you the revised implementation schedule for plant modifications which will correct Control Room Human Engineering Deficiencies (HEDs). As required by Supplement 1 to NUREG-0737, Item I.D.1, Baltimore Gas and Electric Company (BG&E) conducted a Detailed Control Room Design Review for Calvert Cliffs Nuclear Power Plant, Units 1 and 2. In Reference (a), we committed to complete the subject plant modifications correcting safety-related Category 1 and 2 HEDs by spring 1992 for Unit 1 and spring 1991 for Unit 2. This commitment was based on the plant conditions (i.e., refueling outage) required to complete the modifications. Due to the increased scope of the 1989 Unit 2 refueling outage and subsequent extended shutdown of Unit 1, the next Unit 1 refueling outage is scheduled for fall 1991, and the next Unit 2 refueling outage is scheduled for fall 1992. The engineering required to support the modifications and parts procurement has generally remained on schedule to meet the original commitment.

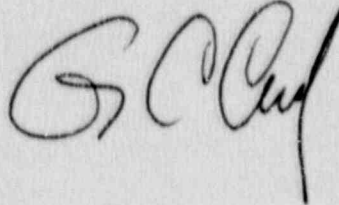
Reference (a) describes the three scheduling priorities for correcting the HEDs. All priority A HEDs have been corrected. Enclosure (1) lists the implementation schedule for priority B and C HEDs. The HEDs have been grouped under specific plant modification packages to ensure that related HEDs are resolved in a consistent manner. We administratively control permanent plant modifications under the Facility Change Request (FCR) process. Each FCR number listed in Enclosure (1) represents various related HEDs. The implementation schedule for each FCR is listed. Even though the extended outages of 1989 and 1990 have impacted the correction of HEDs, all Category 1 and 2 HEDs will still be addressed prior to the end of the next Unit 2 refueling outage, as originally committed.

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

Very truly yours,

A handwritten signature in dark ink, appearing to read "G. C. McDonald, Jr.", with a stylized, cursive script.

GCC/JMO/dlm

Enclosure: (1) "Implementation Schedule for Priority B and C HEDs"

cc: D. A. Brune, Esquire
J. E. Silberg, Esquire
R. A. Capra, NRC
D. G. McDonald, Jr., NRC
T. T. Martin, NRC
L. E. Nicholson, NRC
R. I. McLean, DNR

ENCLOSURE (1)

Implementation Schedule for Priority B and C HEDs

CATEGORY "B"

FCR: 88-202 CATEGORY - 2B

SCOPE: Many of the guidelines for meter scale design have been violated. Numerous indicator scale plates and indicators will be replaced.

IMPLEMENTATION: U1 - Fall 1991 Refueling Outage
 U2 - Fall 1992 Refueling Outage

FCR: 88-203 CATEGORY - 1B

SCOPE: Many controls are located less than three inches from the edge of the console. A guard rail has been installed as a protection device to prevent accidental actuation.

Many of the J-handles located close to the edge of the consoles were installed upside-down to prevent accidental actuation. Now that the guard rail is installed, the J-handles have been reinstalled correctly to conform to convention.

IMPLEMENTATION: U1 - Complete
 U2 - Complete

FCR: 88-204 CATEGORY - 1B/2B

SCOPE: Many controllers do not operate according to convention. These controllers will be enhanced with labels to avoid operator confusion.

IMPLEMENTATION: U1 - Current Outage
 U2 - Current Refueling Outage

ENCLOSURE (1)

Implementation Schedule for Priority B and C HEDs

FCR: 88-208 CATEGORY - 1B

SCOPE: Meters on plane B of panels 17, 18, and 20 will be rearranged and/or broken up by demarcation or spacing techniques to enhance functional grouping.

IMPLEMENTATION: U1 - Fall 1991 Refueling Outage
 U2 - Fall 1992 Refueling Outage

FCR: 88-218 CATEGORY - 2B

SCOPE: Control room lighting, which is provided during a loss of offsite AC, does not provide an illumination level of 10 FC. The lighting will be enhanced for both the control room and the auxiliary shutdown panel (C43).

IMPLEMENTATION: U1 and U2 - Fall 1992 Unit 2 Refueling Outage

FCR: 88-220 CATEGORY - 1B

SCOPE: It is sometimes confusing for operators to know the safe band of operation on storage tanks. Zone banding will be added to storage tank level indicators in the control room.

IMPLEMENTATION: U1 - Fall 1991 Refueling Outage
 U2 - Fall 1992 Refueling Outage

FCR: 88-221 CATEGORY - 2B

SCOPE: (1) Change the AC ground indicators on panel 1C23A to General Electric ET-16 dim-bright indicating lamps;

 (2) Provide power available indication for RVLMS light array on panel 1(2)C05;

 (3) Modify the indicating lamps for Feedwater Heaters 11(21) A, B, & C and 12(22)A, B, & C to operate identical to the remaining Feedwater Heater lamps and move Feedwater Heaters 14(24)A & B from the common alarm (C19) to the plant computer via DAS; and,

ENCLOSURE (1)

Implementation Schedule for Priority B and C HEDs

- (4) Change the lamps from normally off to normally on and change the lenses from amber to white for the following indicator lights on 1(2)C03:

- o LOSS OF REMOTE MANUAL TRIP
- o 1C47 POWER LOSS
- o 1C48 POWER LOSS
- o LOSS OF DC REMOTE TRIP CONTROL

IMPLEMENTATION: U1 - Fall 1991 Refueling Outage
U2 - Fall 1992 Refueling Outage

FCR: 88-222 CATEGORY - 1B

SCOPE: HPSI flow indication in the control room is inadequate. The HPSI flow instrument loops will provide a flow indication of 0 to 400 GPM from the existing range of 0 to 300 GPM. This upgrade is accomplished by replacing flow transmitters 2-FT-311, -321, -331, and -341 and flow indicators 2-FI-311, -321, -331, and -341. In addition, a flow totalizer is also added to provide an indication of total HPSI flow from 0 to 1600 GPM. All new indicators will use linear scales.

IMPLEMENTATION: U1 - Fall 1991 Refueling Outage
U2 - Fall 1992 Refueling Outage

ENCLOSURE (1)

Implementation Schedule for Priority B and C HEDs

CATEGORY 1C

FCR: 88-201 CATEGORY - 1C

SCOPE: Replace J-Handle and CMC Switch coverplate that do not meet CCNPP label standards.

IMPLEMENTATION: U1 - Fall 1991 Refueling Outage
 U2 - Fall 1992 Refueling Outage

FCR: 88-205 CATEGORY - 1C

SCOPE: Panels 1/2C03 have been reviewed. Changes are required to both Units in order to meet mirror-image convention.

IMPLEMENTATION: U1 - Fall 1991 Refueling Outage
 U2 - Fall 1992 Refueling Outage

FCR: 88-210 CATEGORY - 2C

SCOPE: All control room keylock switches not conforming to the standard position convention will be remounted.

IMPLEMENTATION: U1 - Fall 1991 Refueling Outage
 U2 - Fall 1992 Refueling Outage

FCR: 88-214 CATEGORY - 1C

SCOPE: Make numerous changes to the control room annunciation system.

IMPLEMENTATION: U1 - Fall 1991 Refueling Outage
 U2 - Fall 1992 Refueling Outage

ENCLOSURE (1)

Implementation Schedule for Priority B and C HEDs

FCR: 88-216 CATEGORY - 1C

SCOPE: The task "Determine Subcooled Margin Using CETs" requires steam table conversion. This indication is now available on SPDS. A display device may be added to the control boards (Panel 1C05) which depicts subcooled margin using the CETs as inputs. It is still under review.

IMPLEMENTATION: Direction on this has not yet been determined. Schedule is subject to material availability & appropriate plant conditions.

FCR: 88-217 CATEGORY - 1C

SCOPE: Panels 1C13 and 2C13 are poorly organized. There are functional and task grouping problems associated with Circulation Water, Service Water, Component Cooling and Instrument/Plant Air Systems. These panels will be modified to enhance these groupings.

IMPLEMENTATION: U1 - Fall 1991 Refueling Outage
 U2 - Fall 1992 Refueling Outage

FCR: 88-222 CATEGORY - 1C

SCOPE: An additional LPSI flow indicator will be placed in the control room to provide low flow indication during core flush.

IMPLEMENTATION: U1 - Fall 1991 Refueling Outage
 U2 - Fall 1992 Refueling Outage

FCR: 88-223 CATEGORY - 1C

SCOPE: Spent fuel pool cooling pump ampere instrumentation and pool level instrumentation is not adequate. The following modifications will be performed:

- (1) Cooling pump ampere annunciation will be split into two windows.
- (2) Spent fuel pool level/temperature annunciation will be split into two windows.

ENCLOSURE (1)

Implementation Schedule for Priority B and C HEDs

- (3) Level measurement will be provided at the pool.
- (4) Temperature indication will be provided at the pool.

All annunciator modifications will be performed under FCR 88-214.

IMPLEMENTATION: U1 - Fall 1991 Refueling Outage
U2 - N/A

FCR: 88-225 CATEGORY - 2C

SCOPE: Operator(s) have specified the need to add AFW pump suction pressure indication to the control room. This indication will be added to control room panels i/2C04.

IMPLEMENTATION: U1 - Fall 1991 Refueling Outage
U2 - Fall 1992 Refueling Outage
