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October 27, 1989

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  
Close-out of Restart Commitments

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Gentlemen:

Baltimore Gas and Electric committed to certain hardware evaluations (Unit 2 pressurizer penetration leakage) and programmatic actions before returning either Calvert Cliffs Unit to service (Reference a). The NRC acknowledged these restart commitments in NRC Confirmatory Action Letter 89-08 (Reference b). We subsequently committed to taking additional actions before returning either Unit to service in our responses to a Special Team Inspection Report and an Emergency Operating Procedure Inspection Report (References c-f).

#### Hardware Commitment

We have identified the mode of Unit 2 pressurizer penetration leakage. Repairs are being made. Our evaluation shows that although the potential for similar pressurizer penetration leakage on Unit 1 cannot be ruled out, it is unlikely. As described in our basis for determination (Reference g), we have concluded Unit 1 operation poses no undue risk to public health and safety. We discussed the basis for determination in detail with NRC staff in a meeting held on September 25, 1989 (Reference h).

#### Programmatic Commitments

We instituted a process that itemized, scheduled, and tracked our programmatic commitments. We assembled close-out packages to document completed corrective actions. We reviewed each close-out package to ensure that (1) corrective actions were appropriate and complete, (2) restart commitments were fulfilled, and (3) concerns were adequately addressed. We established an independent Restart Commitment Verification Team to review line organization actions and to verify commitments were met. Verification techniques included interviews, field observations and Quality Assurance Surveillances.

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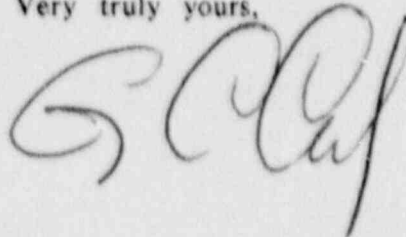
A brief summary of each restart commitment and some of the corrective actions taken are provided in Enclosure (1). All short-term corrective actions are complete with the exception of the actions necessary to address the weaknesses we identified in our "Alternate Safe Shutdown" Abnormal Operating Procedure (AOP). Plant modifications associated with this AOP are required and are expected to be completed in late November 1989. Following installation of these modifications, the Plant Operations and Safety Review Committee will review and approve procedures for Alternate Safe Shutdown. We will complete the remaining corrective actions prior to either Unit's start-up.

We have met our restart commitments with the exception of those associated with our Alternate Safe Shutdown Procedure as stated above. Since the scope of this remaining activity is well defined, we are prepared to meet with the NRC to discuss our corrective actions. We are also ready for an NRC verification inspection following this meeting.

In closing, let me assure you that we consider these actions to be just the first steps toward improving weaknesses identified by ourselves and the NRC. Long-term corrective actions have been identified. Many are associated with our Performance Improvement Plan Implementation Program (Reference i) and are substantially underway.

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

Very truly yours,



GCC/LSL/dme/dlm

List of References

Enclosure

cc: D. A. Brune, Esquire  
J. E. Silberg, Esquire  
R. A. Capra, NRC  
S. A. McNeil, NRC  
W. T. Russell, NRC  
J. A. Golla, Jr., NRC  
T. Magette, DNR

### LIST OF REFERENCES

#### Baltimore Gas and Electric Company Close-out of Restart Commitments

- (a) Letter from Mr. G. C. Creel to NRC Document Control Desk, Restart Commitments, dated May 23, 1989
- (b) Letter from Mr. W. T. Russell to Mr. G. C. Creel, Confirmatory Action Letter 89-08; Restart Commitments, dated May 25, 1989
- (c) NRC Inspection Report Nos. 50-317/89-200; 50-318/89-200, Special Team Inspection dated May 23, 1989
- (d) Letter from Mr. G. C. Creel to NRC Document Control Desk, Response to Inspection Report Nos. 50-317/89-200; 50-318/89-200 (Special Team Inspection), dated June 21, 1989
- (e) NRC Inspection Report 50-317/89-80; 50-318/89-80, Emergency Operating Procedures, dated August 2, 1989
- (f) Letter from Mr. G. C. Creel to NRC Document Control Desk, Response to Inspection Report Nos. 50-317/89-80; 50-318/89-80, dated September 7, 1989
- (g) Letter from Mr. G. C. Creel to NRC Document Control Desk, Submittal of Basis for Determination, dated September 20, 1989.
- (h) Meeting between BG&E and NRC Staff to discuss the Calvert Cliffs Nuclear Power Plant Pressurizer Penetration Basis for Determination, September 25, 1989
- (i) Letter from Mr. G. V. McGowan (BG&E) to Mr. J. M. Taylor (NRC), Performance Improvement Plan Implementation Program, dated July 31, 1989

## ENCLOSURE (1)

### **BALTIMORE GAS AND ELECTRIC COMPANY OVERVIEW OF RESTART COMMITMENTS AND CORRECTIVE ACTIONS**

This enclosure provides an overview of Baltimore Gas and Electric (BG&E) restart commitments and corrective actions. Baltimore Gas and Electric committed to complete a number of corrective actions prior to the restart of either Calvert Cliffs Unit. Documentation which demonstrated that appropriate action had been taken for each commitment was assembled into close-out packages.

Independent verification of the results of short-term programmatic corrective actions was conducted to ensure the desired effects had been achieved and the restart concerns had been adequately addressed.

The three sources of BG&E restart commitments are our May 23, 1989 Restart Commitment Letter, and our responses to a Special Team Inspection (STI) Report and an Emergency Operating Procedure (EOP) Inspection Report (References a-f). The following is a general summary of these BG&E commitments and associated corrective actions. Our corrective actions are described in more detail in References (a), (d) and (f).

As described in the May 23, 1989 letter, BG&E committed to address weaknesses in four areas (Reference a).

#### AREA NO. 1 (Hardware -- Pressurizer):

We committed to determine the mode of leakage from Unit 2 pressurizer penetrations and to determine if the Unit 1 pressurizer could experience the same mode of leakage. We also committed to determine whether the Units can be operated safely.

In fulfillment of these commitments, we:

- o determined the mode of leakage from Unit 2 pressurizer penetrations,
- o determined that Unit 1 can be safely operated even though the potential for similar leakage from Unit 1 pressurizer penetrations cannot be ruled out (Reference g), and
- o discussed these matters in detail with NRC staff members (Reference h).



## ENCLOSURE (1)

### **BALTIMORE GAS AND ELECTRIC COMPANY OVERVIEW OF RESTART COMMITMENTS AND CORRECTIVE ACTIONS**

#### AREA NO. 2 (Control of System Status):

We committed to improve our control of system status.

In fulfillment of this commitment, we:

- o improved the daily "Tagout by Unit and System" computer printout,
- o are displaying tagging boundaries for Unit 1 and Common systems while continuing to evaluate an optimum approach to communicate system tagout status,
- o established the requirement for an independent assessment of all tagouts for adequacy and appropriateness relative to plant conditions by two licensed operators,
- o improved supplementary tagout clearance controls,
- o established the requirement for a physical walkdown of both main and supplementary tagout clearances,
- o re-structured the safety tagging organization,
- o established controls on unscheduled work and tagouts, and
- o revised and provided training on Calvert Cliffs Instruction (CCI) -112, "Safety Tagging."

#### AREA NO. 3 (Control of Work Activities):

We committed to improve control of work activities.

In fulfillment of this commitment, we:

- o re-evaluated and prioritized outage work which allowed craft contractor staffing levels to be reduced,
- o established requirements to schedule multi-disciplinary work and work requiring any support at least three days in advance,
- o improved communications between Operations Shift Personnel, the Tagging Organization and Operations/Maintenance Coordination, and
- o communicated to employees major work priorities, the need to control work activities, and the need for procedural compliance.

## ENCLOSURE (1)

### **BALTIMORE GAS AND ELECTRIC COMPANY OVERVIEW OF RESTART COMMITMENTS AND CORRECTIVE ACTIONS**

#### **AREA NO. 4 (Procedure Use and Control of Procedure Changes):**

We committed to improve control of procedure changes and to perform a Human Performance Evaluation System (HPES) or similar investigation for all significant procedure violations.

In fulfillment of these commitments, we:

- o developed and implemented a site-wide definition of "change of intent" for procedure changes requiring Plant Operations and Safety Review Committee (POSRC) review,
- o provided guidance on when and how to identify, capture and maintain the bases or basis for procedure changes,
- o provided a standardized process for review and approval of procedure revisions and changes,
- o established instructions for making "pen and ink" changes to procedure masters as a result of field changes,
- o established a limit for the number of "pen and ink" changes permitted to accumulate before the procedure must be revised,
- o established the requirement for an HPES review of all significant procedure violations, and
- o revised CCI-101 (Calvert Cliffs Implementing Procedure Development and Control) to include Appendix 101.10, "Calvert Cliffs Implementing Procedure Writer's Guide."

NOTE: Some of the above actions are still undergoing independent verification.

The May 23, 1989 STI Report identified fourteen Unresolved Items. We completed a careful review of the Unresolved Items as well as additional concerns identified within the report. Short- and long-term corrective actions were provided in our June 21, 1989 response. As described in the response, BG&E committed to address Unresolved Items 1 - 9, 11, and 13; and Additional Concerns 1 - 3, 5 - 7, and 10 - 12 prior to the restart of either Calvert Cliffs Unit. The following is a general summary of these BG&E commitments and associated corrective actions.

## ENCLOSURE (I)

### **BALTIMORE GAS AND ELECTRIC COMPANY OVERVIEW OF RESTART COMMITMENTS AND CORRECTIVE ACTIONS**

#### UNRESOLVED ITEM NO. 1 (Control Over Measuring and Test Equipment):

We committed to control gauges, that are temporarily installed to monitor plant parameters during the performance of Surveillance Test Procedures, in accordance with CCI-120D, "Calibration Program for Measuring and Test Equipment".

In fulfillment of this commitment, we:

- o verified that recently completed Surveillance Test Procedures which used temporary gauges were valid,
- o instituted usage tags for temporary gauges, and
- o conducted a special Quality Assurance Surveillance to verify compliance with CCI-120D.

#### UNRESOLVED ITEM NO. 2 (Procedure Changes Which Change the Procedures Intent):

We committed to develop a definition of "change of intent" for use during procedure revision and change.

Refer to the summary under Restart Commitment Letter Area No. 4.

#### UNRESOLVED ITEM NO. 3 (GS-NO Standing Instructions):

We committed to remove instructions for operator action, which could affect nuclear safety, from General Supervisor - Nuclear Operations (GS-NO) Standing Instructions and incorporate them into appropriate procedures.

In fulfillment of this commitment, we:

- o reviewed all Standing Instructions, removed all instructions for operator actions that could affect nuclear safety, and incorporated them into appropriate procedures,
- o revised CCI-114, "Plant Logs", to prohibit use of GS-NO Standing Instructions as substitutes for procedures, and
- o trained appropriate personnel on the CCI-114 revision.

## ENCLOSURE (1)

### **BALTIMORE GAS AND ELECTRIC COMPANY OVERVIEW OF RESTART COMMITMENTS AND CORRECTIVE ACTIONS**

#### **UNRESOLVED ITEM NO. 4 (Control of Temporary Modifications):**

We committed to provide Plant Operations and Safety Review Committee (POSRC) review of all temporary modifications that affect nuclear safety instead of only those modifications that are safety-related.

In fulfillment of this commitment, we:

- o screened all outstanding temporary modifications to determine if they affect nuclear safety,
- o provided POSRC review and 10 CFR 50.59 safety evaluations, as appropriate, for temporary modifications which affect nuclear safety,
- o removed one temporary modification that was determined to involve an Unreviewed Safety Question, and
- o revised CCI-117, "Temporary Modification Control," to incorporate screening criteria for determining if a temporary modification affects nuclear safety.

#### **UNRESOLVED ITEM NO. 5 (Lack of Detailed Work Instructions):**

We committed to upgrade the level of detail contained in work instructions.

In fulfillment of this commitment, we:

- o revised CCI-200, "Calvert Cliffs Nuclear Maintenance System," to place greater emphasis on Maintenance Order planning; to improve reference of technical information; and to require Quality Control review prior to implementation,
- o revised CCI-101, "Calvert Cliffs Implementing Procedure Development and Control," to include a procedure writer's guide and a requirement for procedure validation,
- o provided CCI-200 and CCI-101 training, and
- o instituted a special Quality Assurance Surveillance to verify improvements in Maintenance Order planning, implementation and documentation.



## ENCLOSURE (I)

### **BALTIMORE GAS AND ELECTRIC COMPANY OVERVIEW OF RESTART COMMITMENTS AND CORRECTIVE ACTIONS**

#### **UNRESOLVED ITEM NO. 6 (Incomplete Documentation of Completed Maintenance):**

We committed to improve the completeness of maintenance record documentation for completed maintenance.

In fulfillment of this commitment, we:

- o stressed the importance of complete maintenance record documentation through a series of meetings, Awareness Training and the Maintenance Supervisory Job Observation Program, and
- o instituted a series of special Quality Assurance Surveillances to verify improvements in Maintenance Order planning, implementation and documentation.

#### **UNRESOLVED ITEM NO. 7 (Control of Vendor Technical Manuals):**

We committed to regain control of the vendor technical information process and determine the affect of unreviewed manuals on operating, engineering and maintenance activities.

In fulfillment of these commitments, we:

- o revised Document Control Unit Procedure-13, "Processing and Control of Technical Manuals," to preclude issuance of unreviewed technical information,
- o identified all unreviewed technical manuals and recalled those that had been issued,
- o screened unreviewed manuals for potential safety-significance,
- o reviewed safety-significant technical manuals,
- o identified procedures that are associated with previously unreviewed safety-significant manuals, and
- o reviewed and revised, as appropriate, those affected procedures that are to be used prior to or during restart.

## ENCLOSURE (1)

### **BALTIMORE GAS AND ELECTRIC COMPANY OVERVIEW OF RESTART COMMITMENTS AND CORRECTIVE ACTIONS**

#### UNRESOLVED ITEM NO. 8 (Control Over Welding Process Activities):

We committed to resolve welding process administrative discrepancies and improve welding process controls.

In fulfillment of these commitments, we:

- o developed and implemented a new procedure, CCI-226, "Filler Material Control," which controls the issue and use of weld rod filler material, including the specification of holding oven temperature limits,
- o provided copies of WPP 6.006, "Weld Authorization and Documentation," WPP 6.009, "Control of Welding Materials," and CCI-226 at weld rod issue stations, and
- o approved two new Mechanical Test and Equipment Calibration procedures, M-TEC-12 and 13, which govern the calibration of holding and portable weld rod ovens.

#### UNRESOLVED ITEM NO. 9 (Quality Control Inspection Activities):

We committed to provide written instructions for controlling, implementing and documenting Quality Control (QC) inspections.

In fulfillment of this commitment, we:

- o developed and implemented "Selection Criteria for QC Coverage" which prioritizes QC coverage and provides concurrence requirements for waiving coverage, and
- o prepared and will continue to prepare, detailed QC inspection instructions for selected work activities.

#### UNRESOLVED ITEM NO. 11 (Permanent Resolution of Procedure Deficiencies):

We committed to incorporate those field changes which have long-term applicability into a procedure master. We also committed to revising the procedure master when a specified number of pen-and-ink changes have accumulated.

Refer to the summary under Confirmatory Action Letter Area No. 4.

## ENCLOSURE (1)

### **BALTIMORE GAS AND ELECTRIC COMPANY OVERVIEW OF RESTART COMMITMENTS AND CORRECTIVE ACTIONS**

#### UNRESOLVED ITEM NO. 13 (Calibration of Permanently Installed Plant Equipment):

We committed to establish a process that would evaluate the validity of completed Surveillance Test Procedures when permanently installed process instrumentation is determined to be out-of-calibration.

In fulfillment of this commitment, we:

- o instructed Electrical and Controls Section Supervisors and Assistant General Supervisors to generate Non-Conformance Reports (NCRs) when permanently installed process instrumentation is determined to be out-of-calibration, and to route such NCRs to the Site Surveillance Test Program Manager (SSTPM) via the Quality Control Unit, and
- o instructed the SSTPM to coordinate the review of NCRs to determine and address the potential impact of out-of-calibration conditions on completed surveillance tests and on associated operability determinations.

#### ADDITIONAL CONCERN NC. 1 (Recent Procedural Non-Compliances):

We committed to communicate work priorities, the need to control work activities and the need for procedural compliance. We also committed to determine and correct the root causes of recent procedural non-compliances.

In fulfillment of these commitments, we:

- o communicated major work priorities and the importance of control of work activities and procedural compliance to employees by a variety of techniques, including widely distributed memos, site-wide communication meetings, a video tape that is shown at General Orientation Training, poster campaigns and monthly newsletters, and
- o determined the root causes of recent significant procedural non-compliances, and implemented corrective measures.

ENCLOSURE (1)

**BALTIMORE GAS AND ELECTRIC COMPANY  
OVERVIEW OF RESTART COMMITMENTS AND CORRECTIVE ACTIONS**

**ADDITIONAL CONCERN NO. 2 (AOP-9 Revision and Validation):**

We committed to evaluate potential weaknesses in Abnormal Operating Procedure (AOP) -9 (Alternate Safe Shutdown Control Room Evacuation Procedure), revise and validate the procedure, and perform training, as necessary.

In fulfillment of these commitments, we:

- o augmented shift complements with additional fire brigade personnel to free more operators for AOP-9 duties,
- o are modifying the design of several components to facilitate performance of required local actions,
- o revised AOP-9 to include modifications and to correct other weaknesses (Final POSRC review is pending completion of these modifications),
- o conducted training on the revised Control Room fire procedure, and
- o are developing additional procedures for postulated fires in other areas where alternative shutdown functions are performed.

**ADDITIONAL CONCERN NO. 3 (Corrective Action Process Weaknesses):**

We committed to revise the Non-Conformance Report (NCR) procedure and to reinforce the purpose and proper threshold for NCRs.

In fulfillment of these commitments, we:

- o revised CCI-116, "Control of Deficiencies and Non-Conformance Reports," to include important requirements from QAPs and to include reviews for safety-significance, compliance, reportability and human performance, and
- o communicated expectations and performance standards to site personnel regarding the purpose of NCRs and increased site personnel awareness of the NCR initiation threshold.



ENCLOSURE (1)

**BALTIMORE GAS AND ELECTRIC COMPANY  
OVERVIEW OF RESTART COMMITMENTS AND CORRECTIVE ACTIONS**

**ADDITIONAL CONCERN NO. 5 (Post-Maintenance Testing Process):**

We committed to improve the post-maintenance testing program.

In fulfillment of this commitment, we:

- o developed an improved Post-Maintenance Testing Program,
- o revised CCI-200, "Nuclear Maintenance System," to implement the new program, and
- o provided training on CCI-200 to critical user groups.

**ADDITIONAL CONCERN NO. 6 (Change of Intent Concern):**

We committed to resolve a particular application of "change of intent".

Refer to the summary under Restart Commitment Letter Item No. 4.

**ADDITIONAL CONCERN NO. 7 (Procedure Upgrade Action Plan Weaknesses):**

We committed to evaluate and redirect the Procedure Upgrade Action Plan.

In fulfillment of this commitment, we:

- o increased awareness of procedure upgrade activities and good practices within the industry,
- o evaluated the procedure upgrade effort,
- o established the Procedure Upgrade Project as described in the draft Project Plan,
- o continued with those activities that have been deemed effective, and
- o revised CCI-101 to include Appendix 101.10, "Calvert Cliffs Implementing Procedure Writer's Guide."

## ENCLOSURE (1)

### **BALTIMORE GAS AND ELECTRIC COMPANY OVERVIEW OF RESTART COMMITMENTS AND CORRECTIVE ACTIONS**

#### **ADDITIONAL CONCERN NO. 10 (Management Communication of Expectations and Priorities):**

We committed to itemize and prioritize near term work on the Performance Improvement Plan (PIP) and each Units' outage. We also committed to develop and implement a work schedule that integrates PIP, restart commitments and outage and major daily work.

In fulfillment of these commitments, we:

- o established near term priorities for PIP, and the Unit one and two outages,
- o developed and implemented a work program that integrates major PIP, restart commitments, and outage work, and
- o continue to have meetings with employees to provide a better site-wide understanding of the PIP and Management's expectations.

#### **ADDITIONAL CONCERN NO. 11 (Equipment-Out-Of-Service Log):**

We committed to develop an equipment-out-of-service tracking mechanism and associated implementing instructions. We also committed to provide operators with related training.

In fulfillment of these commitments, we:

- o developed and implemented Equipment Status Sheets,
- o incorporated Equipment Status Sheet requirements in CCI-307, "Nuclear Operations Shift Turnover Checklist," and
- o provided operators with training on CCI-307.

#### **ADDITIONAL CONCERN NO. 12 (Surveillance Test Program):**

We committed to improve the Surveillance Test Program and to change the surveillance testing organization.

In fulfillment of these commitments, we:

- o revised CCI-104, "Surveillance Test Program,"
- o implemented and trained a new Surveillance Test Program organization, and
- o began the upgrade of all Surveillance Test Procedures.

## ENCLOSURE (1)

### **BALTIMORE GAS AND ELECTRIC COMPANY OVERVIEW OF RESTART COMMITMENTS AND CORRECTIVE ACTIONS**

As described in the September 7, 1989 response to an Emergency Operating Procedure Inspection Report, BG&E committed to address weaknesses in two areas. The following is a general summary of these BG&E commitments and associated corrective actions.

#### ADDITIONAL COMMITMENT NO. 1 (Use of EOPs as Guidelines Vice Procedures):

We committed to change the policy for implementation of Emergency Operating Procedures (EOPs).

In fulfillment of this commitment, we:

- o revised GS-NO Standing Instructions to define and require "verbatim compliance" with all operational procedures,
- o removed the "verbatim compliance" exception for EOPs from Operations Unit Administrative Policy 87-1, and

#### ADDITIONAL COMMITMENT NO. 2 (Adequacy of EOP-0 Diagnostic Flowchart):

We committed to revise the diagnostic flow chart in EOP-0 and train operating crews on the new flow chart.

In fulfillment of these commitments, we:

- o revised the EOP-0 diagnostic flow chart,
- o provided training on the EOP-0 flow chart, and
- o continue to assess the EOP-0 flow chart through simulator scenarios and improve it, as necessary.