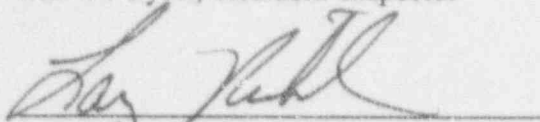
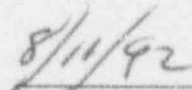


U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos. 50-317/92-19; 50-318/92-19
License Nos. DPR-53/DPR-69
Licensee: Baltimore Gas and Electric Company
Post Office Box 1475
Baltimore, Maryland 21203
Facility: Calvert Cliffs Nuclear Power Plant, Units 1 and 2
Location: Lushy, Maryland
Inspection conducted: July 5, 1992, through August 1, 1992
Inspectors: Peter R. Wilson, Senior Resident Inspector
Allen G. Howe, Resident Inspector
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Approved by:


Larry E. Nicholson, Chief
Reactor Projects Section No. 1A
Division of Reactor Projects


Date

Inspection Summary:

This inspection report documents resident inspector core, regional initiative, and reactive inspections performed during day and backshift hours of station activities including: plant operations; radiological protection; surveillance and maintenance; emergency preparedness; security; engineering and technical support; and safety assessment/quality verification.

Results:

See Executive Summary.

EXECUTIVE SUMMARY

Calvert Cliffs Nuclear Power Plant, Units 1 and 2

Inspection Report Nos. 50-317/92-19 and 50-318/92-19

Plant Operations: (Operational Safety Inspection Module 71707, Prompt Onsite Response to Events at Operating Power Reactors Module 93702) Three reactor coolant inventory control events of minor safety significance occurred on Unit 1. The causes of the problems were inadequate procedure implementation, operator error, and weak communications. The inspectors concluded that the failure to follow procedures was a non-cited violation. Appropriate operator response to an unusual event and a Unit 2 manual reactor trip was observed.

Maintenance and Surveillance: (Maintenance Observations Module 62703, Surveillance Observations Module 61726) Good teamwork was observed regarding the repair of a Unit 2 balance of plant instrumentation power supply. Performance of integrated engineering safety features surveillance testing was good. An error in the surveillance procedure resulted in the brief operation of two pumps without minimum flow. Appropriate actions were initiated by BG&E to review this issue.

Emergency Preparedness: (Module 71707) The inspectors' review of facilities and personnel found an acceptable level of emergency preparedness. BG&E appropriately implemented the emergency response plan during an unusual event declared due to a loss of meteorological instrumentation.

Safety Assessment/Quality Verification: (Modules 71707) A violation was identified regarding a failure to promptly correct quality verification (QV) program implementation concerns relative to missed QV notifications and hold points. The inspectors concluded that a Startup Review Board (SURB) meeting functioned effectively to overview the Unit 1 startup efforts and focus actions toward safety concerns.

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DETAILS

1.0 SUMMARY OF FACILITY ACTIVITIES

Unit 1 was in cold shutdown (mode 5) in a refueling outage throughout the period.

Unit 2 began the period in cold shutdown (mode 5) in a forced outage following the manual reactor trip of June 24. A plant heatup was commenced on July 5 and power operations resumed on July 7. The unit operated at power until a manual reactor trip was initiated on August 1 due to a loss of feedwater. The unit was in hot standby (mode 3) for the remainder of the period.

2.0 PLANT OPERATIONS

2.1 Operational Safety Verification

The inspectors observed plant operation and verified that the facility was operated safely and in accordance with licensee procedures and regulatory requirements. Regular tours were conducted of the following plant areas:

- control room
- primary auxiliary building
- radiological control point
- electrical switchgear rooms
- auxiliary feedwater pump rooms
- security access point
- protected area fence
- intake structure
- diesel generator rooms
- turbine building

Control room instruments and plant computer indications were observed for correlation between channels and for conformance with technical specification (TS) requirements. Operability of engineered safety features, other safety related systems and onsite and offsite power sources was verified. The inspectors observed various alarm conditions and confirmed that operator response was in accordance with plant operating procedures. Routine operations surveillance testing was also observed. Compliance with TS and implementation of appropriate action statements for equipment out of service was inspected. Plant radiation monitoring system indications and plant stack traces were reviewed for unexpected changes. Logs and records were reviewed to determine if entries were accurate and identified equipment status or deficiencies. These records included operating logs, turnover sheets, system safety tags and temporary modifications log. Plant housekeeping controls were monitored, including control and storage of flammable material and other potential safety hazards. The inspectors also examined the condition of various fire protection, meteorological, and seismic monitoring systems. Control room and shift manning were compared to regulatory requirements and portions of shift turnovers were observed. The inspectors found that control room access was properly controlled and that a professional atmosphere was maintained.

In addition to normal utility working hours, the review of plant operations was routinely conducted during portions backshifts (evening shifts) and deep backshifts (weekend and midnight shifts). Extended coverage was provided for 29 hours during backshifts and 6 hours during deep backshifts. Operators were alert and displayed no signs of inattention to duty or fatigue.

The inspectors observed an acceptable level of performance during the inspection tours detailed above.

2.2 Followup of Events Occurring During Inspection Period

During the inspection period, the inspectors provided onsite coverage and followup of unplanned events. Plant parameters, performance of safety systems, and licensee actions were reviewed. The inspectors confirmed that the required notifications were made to the NRC. During event followup, the inspector reviewed the corresponding CCI-118N (Calvert Cliffs Instruction, "Nuclear Operations Section Initiated Reporting Requirements") documentation, including the event details, root cause analysis, and corrective actions taken to prevent recurrence. The following events were reviewed.

a. Unit 1 Reactor Coolant System Inventory Control Events

During the inspection period, three events occurred that involved reactor coolant system inventory control problems on Unit 1. Unit 1 was in cold shutdown during each of the events. The causes of the events were inadequate procedure implementation, operator error, and weak communications. After each event, BG&E management promptly initiated interim corrective actions, initiated investigations of the events, and evaluated the consequences. The inspectors independently reviewed the events and their safety significance, the investigation results, BG&E management response, and corrective actions. A brief description of the events follows:

Event 1 -

On July 12, the Unit 1 reactor coolant system (RCS) was inadvertently overfilled during restoration from surveillance test procedure (STP) O-7B-1, "B Train Engineering Safety Features Logic Test." Approximately 10,000 gallons of borated water was transferred from the refueling water tank (RWT) to the RCS. About 3000 gallons spilled from the pressurizer manway into the containment. No personnel were contaminated during the incident.

Event 2 -

On July 17, approximately 1600 gallons of water were inadvertently added to the Unit 1 RCS during restoration from STP O-67-1, "Check Valve Operability Verification." The pressurizer level increased from 115 inches to 170 inches. There was no overflow because the pressurizer manway was located at 360 inches.

Event 3 -

On July 24, about 10 gallons of RCS coolant were spilled into the containment via open vent valves on the RCS level indication system. The valves were erroneously thought to be closed when the system was filled per Operating Procedure (OP) 1, "Plant Startup from Cold Shutdown," in preparation for establishing a pressurizer bubble. No significant wetting of equipment occurred. No personnel were contaminated during the event.

Analysis

Unit 1 was in cold shutdown (mode 5). The pressurizer manway was removed to provide a vent path for the RCS for events 1 and 2. The flowpath for both of these events was established via an improper lineup of low pressure safety injection (LPSI) system manually operated valves. This lineup cross connected the normal LPSI pump suction from the RWT to the shutdown cooling return lines and allowed boric water from the RWT to be pumped into the RCS. For the third event, Unit 1 was in mode 5 with the pressurizer manway installed.

The safety significance of each of these events was minimal. The inspectors considered potential effects on reactivity control, low temperature overpressure protection (LTOP), and shutdown cooling and determined that there were no adverse consequences. Radiological consequences were limited to the decontamination of some equipment in the containment. BG&E also determined that LTOP was not challenged. The inspectors independent confirmed this fact.

The inspectors reviewed BG&E's assessment of the wetted equipment from event 1. Wetted equipment was limited to the pressurizer insulation, a lighting panel, and the nuclear instrumentation ventilation filter boxes. No moisture intrusion was identified with the exception of the pressurizer insulation. As a precaution, the pressurizer heaters were checked for insulation resistance and no problems were found. BG&E concluded that there were no adverse effects to the wetted pressurizer insulation and no potential for leaching chemicals from the insulation that would affect the pressurizer.

The BG&E materials testing group determined that the effects of exposure of the pressurizer to boric acid solution were insignificant. Corrosion is a primary concern at high temperatures with a continuous source of boric acid solution. During pressurizer heatup to establish a bubble, the moisture was evaporated, thus, minimizing the time of exposure of the pressurizer to a boric acid solution at high temperatures.

The evaluation results were presented to the Plant Operations Safety Review Committee (POSRC). The inspectors concluded that the potential consequences of wetted equipment were properly dispositioned.

Event Causes

Following the events, BG&E management initiated investigations to seek the event causes. The inspectors reviewed the results of investigations of events 1 and 2 and independently assessed the event causes. The preliminary root causes of events 1 and 2 were presented to POSRC as follows:

- * Inadequate work practices manifested by failure to use an approved procedure to direct evolutions and the assignment and performance of multiple steps in parallel.
- * Weak verbal communications manifested by the failure of the operators to formally turn over a task and the lack of understanding of a specific valve sequence.
- * Inappropriate supervisory methods manifested by the performance of multiple STPs and the assignment of multiple procedure steps.
- * Personnel were not fully aware of the potential consequences of inappropriate operation of the LPSI pump suction valves.

The inspectors agreed that these causes led to the events. Additionally, the licensee noted incomplete attendance at the pre-evolution briefings, fatigue, and inattention to detail were contributing causes.

For event 3, investigation by BG&E was ongoing as the period ended. Based on initial operator statements, event review, and discussions with operators, the inspectors preliminarily concluded that the causes were: weak communications between the senior reactor operator (SRO) directing the task and plant operators, the direction to perform multiple steps, and incomplete attendance at the pre-evolution brief. The inspectors noted that expectations addressing these causes were discussed in the General Supervisor - Nuclear Plant Operations (GS-NPO) Notes and Instructions before this event. However, due to vacation, the SRO involved had not yet attended a discussion of expectations by operations management required following the first two events.

The inspectors observed that the events occurred during the final stages of the Unit 1 outage. During this and similar periods, operators were tasked with the performance of numerous tests, system lineups, and equipment start ups. The inspectors assessed that this increased activity level contributed to distractions as the operators performed multiple tasks.

Management Response

In addition to the investigations, BG&E management took several prompt actions to address these events. The Plant General Manager placed a restraint on Unit 1 heatup until the root causes were understood and corrective actions initiated. A notice discussing event 1 and emphasizing

managements expectations for procedure use was issued to all site personnel. The events were discussed as safety and quality concerns at the daily plant status meeting and at POSRC meetings.

Operations management expectations were emphasized in the GS-NPO Notes and Instructions and during GS-NPO briefings with each operating crew. After events 2 and 3, the GS-NPO reiterated and strengthened his expectations for the conduct of operations. These expectations included step-by-step procedure performance, precise communications, requiring copies of procedures to be in hand for all personnel involved (including plant operators), mandatory pre-evolution brief attendance, and direct supervision by a licensed SPO for any evolution that could impact the RCS inventory or shutdown cooling. As an immediate measure, signs were placed on the LPSI system valves warning operators that the normal pump suction and shutdown cooling valves should not be open at the same time. Additionally, appropriate personnel disciplinary actions were taken for these events.

The inspectors determined that management promptly recognized the significance of these events. Actions to determine the causes were properly initiated. Immediate corrective actions commensurate with the event significance and the potential causes were implemented. Final corrective actions based on the investigation findings were formally tracked in the corrective action system.

Conclusion

The inspectors concluded that safety significance of the events was minor. However, they were concerned that these events resulted from operator error and the failure to properly implement procedures. The failure to properly implement procedures was a violation of technical specification (TS) 6.8.1.a. and 6.8.1.c., which require that written procedures be established, implemented, and maintained covering system operations and surveillance activities. The failure to follow TS 6.8.1.a and 6.8.1.c was not cited because the criteria specified in Section VII.G of the NRC Enforcement Policy, 10 CFR 2, Appendix C, were satisfied.

b. Unusual Event

On July 31 at 7:48 p.m., the site entered an unusual event due to the loss of the primary and secondary meteorological instrumentation. The instrumentation was lost during a thunderstorm and suspected lightning strike to the meteorological tower. No other equipment was affected by the storm. This instrumentation provides information for determining radioactive release paths and associated protective action recommendations under severe accident conditions and is required by the emergency response plan if either unit is at power.

The inspectors discussed the impact of the loss of indication with the shift supervisor and reviewed the emergency response contingency plans for this condition and determined that adequate contingency plans were in place. BG&E's initial investigation indicated that a data link between the meteorological instrumentation and the control room computer had failed. Since the

instrumentation is only required if either unit is in mode 1, the unusual event was terminated at 8:25 p.m. on August 1 following a Unit 2 trip. An interim human/telephone link was established to transfer data from offsite meteorological instrumentation to the control room until repairs to the permanent data link were completed. The inspectors concluded that operators appropriately implemented the emergency response plan during the event.

c. Unit 2 Manual Trip

At 8:12 p.m. on August 1, the Unit 2 reactor was manually tripped by operators following a loss of feedwater. The loss of feedwater was due to a loss of No. 23 4Kv bus. The No. 23 condensate and No. 23 condensate booster pumps tripped due to loss of voltage. The loss of these pumps caused the main feed pumps to trip on low suction pressure resulting in a loss of feedwater. Following the trip, the No. 23 moisture separator reheater (MSR) relief valve lifted and failed to reseat resulting in a loss of condenser vacuum. Operators removed decay heat by dumping steam via the atmospheric dump valves until the MSR relief valve was resealed and condenser vacuum restored. The No. 23 auxiliary feedwater pump started automatically on an expected steam generator (SG) level transient and operators controlled SG level with this pump. Operators maintained the unit in hot standby while the root cause of the trip was investigated.

The trip of the No. 23 4Kv bus was caused by vibrations from shutting the door on the breaker cubicle to the normal feeder breaker to the No. 23 4Kv bus. BG&E determined that the overcurrent relays located on the door were sensitive to actuation if the relay flag was in a "dropped" condition and the door was vibrated. In this case, an operator on rounds saw that the door to the normal feeder breaker was unlatched, noted that there was a maintenance deficiency tag indicating that the door latch was slightly misaligned, and attempted to close the door. While closing the door, the relay tripped, the feeder breaker opened, and power to the bus was lost.

The inspectors observed troubleshooting activities to find the cause of the breaker trip and discussed the root cause with cognizant personnel. Operator actions to trip and control the plant post trip were appropriate. The post trip review was properly conducted.

3.0 RADIOLOGICAL CONTROLS

During tours of the accessible plant areas, the inspectors observed the implementation of selected portions of the licensee's Radiological Controls Program. The utilization and compliance with special work permits (SWPs) were reviewed to ensure detailed descriptions of radiological conditions were provided and that personnel adhered to SWP requirements. The inspectors observed that controls of access to various radiologically controlled areas and use of personnel monitors and frisking methods upon exit from these areas were adequate. Posting and control of radiation areas, contaminated areas and hot spots, and labelling and control of containers holding radioactive materials were verified to be in accordance with licensee procedures.

Health Physics technician control and monitoring of these activities were determined to be adequate. Overall, an acceptable level of performance was observed.

4.0 MAINTENANCE AND SURVEILLANCE

4.1 Maintenance Observations

The inspector reviewed selected maintenance activities to assure that:

- the activity did not violate technical specification limiting conditions for operation and that redundant components were operable;
- required approvals and releases had been obtained prior to commencing work;
- procedures used for the task were adequate and work was within the skills of the trade;
- activities were accomplished by qualified personnel;
- where necessary, radiological and fire preventive controls were adequate and implemented;
- QV hold points were established where required and observed; and
- equipment was properly tested and returned to service.

Maintenance activities reviewed included:

- MO 19204464 Tap change on U-4000-13.
- MO 29204196 Shift power supply on F&P instrument DC power cabinet 2R01A.
- MO 29202192 21 SRWHX tube bulleting.
- MO 29202232 21 CCHX tube bulleting.

The work observed was performed safely and in accordance with proper procedures. Inspectors noted that an appropriate level of supervisory attention was given to the work depending on its priority and difficulty.

a. Shift of Power Supply for 2R01A

An example of good work practice and appropriate supervisory involvement was observed during MO 29204196. On July 22, instrument maintenance technicians troubleshooting a degassifier level indication problem on Unit 2 discovered that the No. 1 power supply to 2R01A, the Fisher & Porter Instrument DC power cabinet, had failed. The power supply output was approximately 70 VDC rather than the normal 48 VDC. This high voltage condition had the potential to damage instrumentation supplied by 2R01A.

The technicians immediately informed the control room. Some effects of the high voltage had been observed by the operators, such as erratic level indications on the degassifier and on condenser hotwells, and a blown fuse on a shutdown cooling temperature recorder.

Following discussion between operations, instrument maintenance, and system engineering, operations management decided to shift 2R01A to the No. 2 power supply, which was verified to be at proper voltage. After stationing operations personnel at key plant locations, 2R01A was shifted to the No. 2 power supply without incident. The No. 1 power supply was later replaced satisfactorily.

Inspectors monitored the evolution and noted an appropriate level of involvement by the Superintendent of Nuclear Operations and the General Supervisor of Nuclear Plant Operations. Potential ramifications were thoroughly discussed before decisions were made and action was taken. Communication and teamwork between operations, instrument maintenance, quality assurance, and system engineering was excellent.

b. Blown Fuse in 21 SWAC Control Circuit

On July 18 at 1:15 p.m., Unit 2 entered TS 3.0.3 following a loss of power to the 21 saltwater air compressor (SWAC). The loss of power was discovered by control room operators attempting to restart the 21 SWAC following a periodic maintenance test of the SWAC temperature switches by control technicians. The 22 SWAC and 22 saltwater (SW) header were coincidentally out of service for preventive maintenance.

The SWACs provide a backup source of air to many safety related valves, including the service water and component cooling heat exchanger SW valves and the ECCS pump room air cooler SW valves. The two SWACs ensure a sufficient air supply is available for valve operation upon loss of the instrument air system. With both SWACs out of service, the unit was no longer able to satisfy the TS requirement for operable saltwater headers and TS 3.0.3 applied.

The electrical maintenance unit investigated and found a blown fuse in the 21 SWAC control circuit. The fuse was replaced and the SWAC was tested satisfactorily. The unit exited TS 3.0.3 at 2:00 p.m.

BG&E conducted a thorough evaluation of the event. It was postulated that the fuse blew during either the temperature switch removal for testing or during reinstallation. Several recommendations were made to improve the maintenance procedure, to strengthen work practices, and to sensitize operators and technicians to more thoroughly evaluate plant conditions and TS requirements before conducting maintenance. These recommendations have been made into action items for completion. Inspectors reviewed the evaluation and discussed the event with the General Supervisor of Electrical and Controls and the General Supervisor of Nuclear Plant Operations. BG&E's actions were found to be appropriate.

4.2 Surveillance Observation

The inspectors witnessed/reviewed selected surveillance tests to determine whether properly approved procedures were in use, details were adequate, test instrumentation was properly calibrated and used, technical specifications were satisfied, testing was performed by qualified personnel, and test results satisfied acceptance criteria or were properly dispositioned. The following surveillance testing activities were reviewed:

STP O-4-1 Integrated ESFAS test

STP O-7-2 Engineered Safety Features Logic Test

Notable observations are detailed below.

a. STP O-4-1, Integrated ESFAS Test

The inspectors observed performance of selected portions of surveillance test procedure (STP) O-4-1, "Integrated Engineered Safety Features Actuation Test," and reviewed the test results. The conduct of the test and pretest brief by operations personnel was good.

Three immediate procedure changes were processed to support testing. Two changes modified low temperature overpressure protection (LTOP) controls since the pressurizer manway was removed and adequate LTOP protection was provided by this vent path. The third change was to correct a technical error that resulted in the operation of the No. 11 high pressure safety injection pump and the No. 11 containment spray pump without minimum flow. The pumps were operated in this configuration for about one minute before they were secured by the operators. The causes of the error were not available as the inspection report ended. The inspectors expressed concern to BG&E management that this error occurred but concluded that BG&E had initiated appropriate corrective actions to review the causes and potential implications of the error. Additionally, an evaluation of the effects of operating the pumps without minimum flow was required to be complete prior to entering a mode where they were required.

One portion of the test was stopped due to indicated high crankcase pressure on the No. 12 emergency diesel generator. The diesel was secured and the electrical bus reenergized. The cause of the indicated high pressure was a clogged sensing line to the manometer. After clearing a clogged sensing line, the test was completed. The response to this challenge by test personnel was good. BG&E also recognized that the clogged sensing line was a repeat occurrence and initiated an evaluation to find the root cause.

The test results were accepted by the plant operations safety review committee. The inspectors also reviewed the test results and concluded that the results were satisfactory and that the deficiencies were appropriately dispositioned. The inspectors had no further questions regarding this test.

5.0 EMERGENCY PREPAREDNESS

The inspectors toured the onsite emergency response facilities to verify that these facilities were in an adequate state of readiness for event response. The inspectors discussed program implementation with the applicable personnel. BG&E response to an unusual event is discussed in section 2.2.b of this inspection report.

6.0 SECURITY

During routine inspection tours, the inspectors observed implementation of portions of the security plan. Areas observed included access point search equipment operation, condition of physical barriers, site access control, security force staffing, and response to system alarms and degraded conditions. These areas of program implementation were determined to be adequate. No unacceptable conditions were identified.

7.0 SAFETY ASSESSMENT AND QUALITY VERIFICATION

7.1 Plant Operations and Safety Review Committee

The inspectors attended several Plant Operations and Safety Review Committee (POSRC) meetings. TS 6.3 requirements for required member attendance were verified. The meeting agendas included procedural changes, proposed changes to the TS, Facility Change Requests, and minutes from previous meetings. Items for which adequate review time was not available were postponed to allow committee members time for further review and comment. Overall, the level of review and member participation was adequate in fulfilling the POSRC responsibilities. No unacceptable conditions were identified.

7.2 Quality Verification Issues

a. Background

During the period, the inspectors reviewed concerns regarding quality verification (QV) of maintenance activities. These concerns included several instances where QV notifications and inspection hold points were missed and weaknesses in procedural guidance on rejected hold points and stop work orders. The purpose of QV hold points was to provide for independent verification of critical characteristics and/or predetermined quality acceptance criteria to ensure safety related components are maintained in accordance with design requirements. These concerns were previously documented as unresolved (92-16-01) in NRC Inspection Report (IR) 50-317 and 50-318/92-16.

The inspectors were particularly concerned that QV notifications and hold points were missed because BG&E inspection practices employ a sampling methodology that selects and limits verification inspections based on the safety and risk significance of the activity and equipment involved. Further, the occurrence of missed notifications and hold points was a long-standing problem. Prior corrective action to address this problem was limited and ineffective. Prior BG&E site management attention to this concern was not rigorous. Additional weaknesses were identified in the procedural guidance for rejected QV hold points and stop work orders.

b. Missed QV Notifications and Inspection Hold Points

During the previous inspection period the inspectors identified several concerns regarding failure to notify QV when required. This failure to notify QV resulted in several inspection hold points being missed; i.e., the inspections were not performed. NRC reviews of specific missed hold points are documented in IR 50-317 and 50-318/92-16.

The inspectors discussed their concerns regarding missed hold points with various site managers during the previous inspection period. BG&E initiated a review of missed hold points to determine the extent of missed hold points and to evaluate any potential operability concerns.

The scope of the review was from August 1991 through June 1992. The review methods included issue reports data base searches and reviews of outstanding Quality Verification Inspection Instructions. From this review, 49 missed hold points were identified that were not inspected and not resolved satisfactorily via the corrective action system. Thirty-eight of the missed hold points were attributed to three maintenance orders associated with 4Kv bus relay testing. The 49 missed hold points were evaluated by BG&E and no operability concerns were identified.

The inspectors' review of issue reports found additional examples of continued challenges to the QV inspection process. For example, some QV inspections were performed subsequent to the hold point in the maintenance procedure. These missed hold points were found by QV efforts to identify work in the field, by workers realizing that a hold point had been passed, and from review of completed maintenance packages. Also, several instances of failure to notify QV were documented in issue reports.

BG&E's interdepartmental administrative procedure MN-1-100, "Conduct of Maintenance," step 5.4, requires maintenance personnel to notify QV before work begins if the MO "QV Inspect" block is marked yes or if the MO is marked "QV Notification Required." In addition, MN-1-100 requires QV to be notified during the performance of the work activity when directed by the job step or prior to QV hold points. The inspectors concluded that the failures to notify QV and the missed hold points were examples of ineffective implementation of MN-1-100.

c. Weak Procedural Guidance Concerns

In IR 50-317 and 50-318/92-16 the inspectors documented concerns with weak procedural guidance regarding working past rejected QV inspection hold points and stop work orders. Guidance found in step 5.4 of MN-1-100 allows work to proceed through a rejected hold point when maintenance personnel disagree with QV, provided that an issue report is written and the number is recorded on the maintenance order. This guidance differs from the guidance contained in Quality Assurance Procedure 14, which formerly addressed maintenance activities until MN-1-100 was implemented. Also, the procedural guidance for stop work orders involving maintenance activities found in Calvert Cliffs Instruction (CCI) 116, "Program Deficiency Report Program," contained only limited instructions concerning the issuance of stop work orders.

The guidance in MN-1-100 was revised on July 3 and all maintenance personnel were given written notification of the change. However, the inspectors noted that BG&E had previously implemented conflicting and conflicting guidance relating to rejected hold points and stop work orders.

d. Ineffective Corrective Action

The inspectors documented in IR 50-317 and 50-318/92-16 that failure to notify QV during maintenance activities was a long-standing and recurring problem. The Independent Safety Evaluation Unit (ISEU) began tracking and trending these failures in 1990. In January 1991, the ISEU documented this concern in an issue report. This issue was brought to the attention of BG&E's senior site management by the supervisor of the ISEU during Management Review Board meetings conducted on May 3, June 14, and August 14, 1991.

To correct the problem, maintenance craft awareness training was conducted in late 1991 to stress the need to make QV notification. However, challenges to the QV process remained as demonstrated by the continuation of missed QV notifications and missed hold points. The inspectors concluded that the corrective action was ineffective given the continuing occurrences of failure to notify QV and missed QV hold points.

e. Current Corrective Actions

During the previous and current inspection period, BG&E initiated actions to correct the QV concerns. These actions included emphasis of management expectations regarding QV notification and QV inspection to the maintenance and QV organizations respectively. A Quality Assurance surveillance was conducted to assess the performance of the inspection program. The maintenance work package development process has been modified to ensure that hold points are marked and highlighted before field work. The inspectors had not fully assessed the impact of these actions as the period ended.

f. Conclusions

As a result of this inspection, the inspectors concluded that the missed QV notifications and hold points indicated program implementation weaknesses and conditions adverse to quality. The assessments of the missed hold points did not identify any operability concerns. Additional weaknesses were identified in the procedural guidance for rejected QV hold points and stop work orders. As discussed, the prior corrective action to address this concern was limited and ineffective. Prior BG&E site management attention to this concern was not rigorous. Criterion XVI of 10 CFR 50 Appendix B requires, in part, that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. The failure to promptly correct the deficiencies in QV program implementation are a violation of this requirement (50-317 and 50-318/92-19-01).

7.3 Startup Review Board

The inspectors attended the Startup Review Board (SURB) meeting conducted on July 28 to support the heatup of Unit 1. The SURB was composed of the site managers and involved a vigorous questioning of the entire site organization to determine the readiness of Unit 1 to heatup to modes 4 and 3. The board functioned effectively to overview the startup efforts and focus actions toward safety concerns.

8.0 FOLLOWUP OF PREVIOUS INSPECTION FINDINGS

Licensee actions taken in response to open items and findings from previous inspections were reviewed. The inspectors determined if corrective actions were appropriate and thorough and previous concerns were resolved. Items were closed where the inspector determined that corrective actions would prevent recurrence. Those items for which additional licensee action was warranted remained open. The following items were reviewed.

8.1 (Closed) Unresolved Item 50-317 and 318/92-16-01 Quality Verification Concerns

This issue involved concerns with missed quality verification hold points, procedure weaknesses and management corrective actions. This issue was inspected and found to be a violation of NRC requirements as discussed in section 7.2.

9.0 MANAGEMENT MEETING

During this inspection, periodic meetings were held with station management to discuss inspection observations and findings. At the close of the inspection period, an exit meeting was held to summarize the conclusions of the inspection. No written material was given to the licensee and no proprietary information related to this inspection was identified.

On July 14, a public meeting was held at the Calvert Cliffs Visitors Center to present, to BG&E, the results of the NRC Systematic Assessment of Licensee Performance (SALP) for the period April 1, 1991, to March 28, 1992.

9.1 Preliminary Inspection Findings

A non-cited violation regarding the failure to properly implement operating and surveillance procedures was identified during this inspection as discussed in section 2.2.a.

Ineffective corrective actions to resolve concerns with missed quality verification hold points and procedure weaknesses was found to be a violation (50-317 and 50-318/92-19-01) of NRC requirements as discussed in section 8.2.

9.2 Attendance at Management Meetings Conducted by Region Based Inspectors

<u>Date</u>	<u>Subject</u>	<u>Inspection Report No.</u>	<u>Reporting Inspector</u>
7/17/1992	ALARA and Outage HP	50-317/92-17 50-318/92-17	J. Furia