

APR 10 1990

Docket Nos.: 50-317
50-318

CAL No. 89-08, Supplement 2

Baltimore Gas and Electric Company
ATTN: Mr. George C. Creel
Vice President - Nuclear Energy
Calvert Cliffs Nuclear Power Plant
MD Rts 2 & 4
Post Office Box 1535
Lusby, Maryland 20657

Gentlemen:

Subject: Confirmatory Action Letter 89-08, Supplement 2

This letter supplements NRC Confirmatory Action Letter (CAL) 89-08 dated May 25, 1989 and CAL 89-08, Supplement 1 dated February 1, 1990 and confirms your commitments to the performance of certain activities associated with the restart of Calvert Cliffs Units 1 and 2.

Based on your letter of March 16, 1990 and the results of a March 21, 1990 management meeting which you attended at Region I, it is our understanding that you have concluded that Calvert Cliffs Unit 1 is ready for safe restart and operation based on your assessments of the physical readiness of the plant and management readiness of the plant organization. You have also indicated that you will perform a detailed self-assessment of the operation of the unit for the period prior to the scheduled maintenance outage at the end of April 1990.

Based upon our review of those steps you have taken to resolve problems which have been identified over the past year, we agree that the restart of one unit (Calvert Cliffs Unit 1) is acceptable. A summary of our assessment of your readiness for restart is provided in the attachment to this letter.

Prior to the restart of Calvert Cliffs Unit 1 after the forthcoming maintenance outage, it is our understanding that you will:

1. Complete the startup self-assessment described in your March 16, 1990 letter;
2. Document the findings and results of the startup self-assessment in a report to the NRC; and

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3. Participate in a management meeting with NRC to present the results of the startup self-assessment.

Prior to the restart of Calvert Cliffs Unit 2, it is our understanding that you will:

1. Assess the readiness of Unit 2 for operation, including the resolution of the pressurizer penetration defects;
2. Assess the ability of the site organization to control the operation of two units;
3. Document the findings of 1. and 2. above in a report to the NRC; and,
4. Participate in a management meeting to discuss the readiness for restart of Unit 2.

Finally, it is understood that the agreement of the Regional Administrator, Region I will be obtained prior to the restart of Calvert Cliffs Unit 2.

Issuance of this Confirmatory Action Letter does not preclude the issuance of an order formalizing the above commitments. If your understanding differs from that set forth above, please call us immediately.

Sincerely,

Thomas T. Martin
Regional Administrator

Attachment: As stated

cc w/Attachment:

T. Magette, Administrator, Nuclear Evaluations
J. Walter, Engineering Division, Public Service Commission of Maryland
G. Adams, Licensing
K. Burger, Esquire, Maryland People's Counsel
P. Birnie, Maryland Safe Energy Coalition
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
State of Maryland (2)

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- bcc w/Attachment:
- Region I Docket Room (with concurrences)
- Management Assistant, DRMA (w/o Attachment)
- T. Martin, RA
- W. Kane, DRP
- J. Wiggins, DRP
- J. Linville, DRP
- C. Cowgill, DRP
- D. Limroth, DRP
- D. Vito, DRP
- K. Lathrop, DRP
- W. Hodges, DRS
- M. Knapp, DRSS
- R. Bellamy, DRSS
- M. Taylor, SLO
- K. Abraham, PAO
- L. Nicholson, SRI - Calvert Cliffs
- T. Kim, RI - Calvert Cliffs
- A. Howe, RI - Calvert Cliffs
- J. Dyer, EDO
- B. Boger, NRR
- R. Capra, NRR
- D. McDonald, NRR
- M. Callahan, OCA

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RI:DRP
CCowgill
4/9/90

RI:DRP
JLinville
4/9/90

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JWiggins
4/9/90~~

RI:DRP
WKane
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4/9/90

ATTACHMENT

Readiness for Restart - Calvert Cliffs Unit 1

Background

Calvert Cliffs was placed on the NRC's list of plants warranting close agency monitoring in December 1988, because of regulatory concerns about declining performance. The licensee was requested to submit an integrated plan to address those performance problems. In March 1989, in response to an NRC Senior Management Meeting initiative, a special team inspection (STI) was performed to determine the reasons for the licensee's decline in performance. The team identified a management philosophy which appeared to emphasize production over safety, weak procedural adherence, ineffective corrective action programs, inadequate procedures and a lack of written QA instructions as contributory factors. In April 1989, the licensee submitted its Performance Improvement Plan outlining corrective actions to address the weaknesses identified by the STI.

In March 1989, Unit 2 was shut down for refueling. In May 1989, leaks were discovered in the Unit 2 pressurizer heater sleeve welds. Unit 1 was shut down in May 1989 to inspect for similar pressurizer heater sleeve weld leaks. On May 23, 1989, the licensee committed to not restart either unit until the pressurizer leak problem was understood and resolved, and better controls over work activities and procedural compliance had been established. Confirmatory Action Letter (CAL) 89-08 was issued confirming these commitments. In November 1989, a readiness assessment team inspection found Calvert Cliffs performance generally improved, although several significant deficiencies remained. NRC concern about the licensee's failure to fully implement low temperature over-pressure protection (LTOP) commitments resulted in the issuance of a supplement to CAL 89-08 in February 1990. An inspection in March 1990 determined that the licensee's corrective actions and plans concerning LTOP and commitment implementation were adequate. On March 16, 1990, the licensee submitted a request to Region I for release from the CAL and its related supplement. On March 21, 1990, the licensee presented its assessment of its readiness to restart Unit 1 and the closeout of the issues raised by the STI and CAL to the NRC.

Physical Readiness for Restart

An STI was performed in February and March 1989 to determine the cause of the licensee's decline in performance. The STI identified numerous weaknesses in the licensee's maintenance and surveillance programs. Unit 2 was shut down in March 1989 for a refueling outage. In May 1989 leaks were discovered in the Unit 2 pressurizer heater sleeve welds. The licensee subsequently shut down Unit 1 to inspect its pressurizer for similar conditions and started an investigation into the cause of the Unit 2 pressurizer leaks. Additionally, corrective actions were implemented to resolve the programmatic weaknesses identified by the CAL and the STI.

In September 1989, the licensee presented the results of its investigation of the pressurizer leakage to the NRC and concluded that there was reasonable assurance that the problem was limited to Unit 2. The NRC accepted the licensee's conclusions and commitment to an augmented inspection program for the Unit 1 pressurizer.

The readiness assessment team inspection (RATI) in November 1989 noted improvements in many areas of the licensee's maintenance and surveillance programs and reached an overall conclusion that the improved level of performance would support safe plant operation. However, the team noted that the licensee had not fully worked out the implementation and coordination difficulties associated with the new program controls. Subsequently, the maintenance/surveillance functional area was rated Category 3 with an improving trend in the most recent SALP period (December 1, 1988 to December 31, 1989). The trend resulted from effective corrective actions which were taken by the licensee in the latter part of the evaluation period. In February 1990, a maintenance team inspection concluded that further improvements had been made in work controls, procedures and procedural adherence, which further supported the improving trend observed by the SALP Board.

The licensee has completed over 1000 maintenance orders and performed system walkdowns and valve lineups to verify physical readiness to restart. These activities were observed by the NRC with no significant discrepancies noted. NRC resident and specialist inspectors and NRR technical reviewers performed a number of independent plant tours, system walkdowns and valve lineup verifications, which indicated the systems were adequately prepared for operation.

Based on the completion of required maintenance, the satisfactory evaluation and resolution of the Unit 1 pressurizer concerns, the improved maintenance and surveillance controls, the fact that required surveillances have been satisfactorily completed and the fact that the resident inspectors have reviewed completed system valve lineups without significant negative findings, the staff concludes that the plant is physically ready to restart.

Operating Staff Readiness

The STI of February-March 1989 determined that the plant was staffed by competent, knowledgeable personnel who performed in a professional manner and were capable of safely operating the plant. However, a number of deficiencies were noted including weaknesses in procedural adherence, poor quality operating and surveillance procedures and safety tagging weaknesses.

In response, the licensee instituted a number of corrective actions, some of which were incorporated in the long-term Performance Improvement Plan (PIP). These included implementing a procedures upgrade program, revising the safety tagging organization, emphasizing a policy of mandatory procedural adherence, and integrating and strengthening the surveillance test program. Additionally, considerable management effort was expended in communicating management's philosophy of safety over production. As noted by the RATI in November 1989, improvements were evident in many areas.

The most recent SALP report rated the Operations functional area as Category 3 with an improving trend. The low rating reflected the licensee's poor performance for much of the evaluation period. However, the SALP noted that the corrective actions and initiatives taken by the licensee appeared generally effective in raising the level of performance in the operations areas in the latter part of the evaluation period. In January 1990, the NRC performed an in-depth evaluation of the licensee's ability to use its revised procedures. The NRC observed the performance of two separate operating crews in response to complete startup and shutdown scenarios in the plant-specific simulator. These evaluations showed that the procedures were adequate to support power operations and that the crews would follow procedures. Additionally, observations and discussions with operators by various NRC personnel including several NRC managers confirmed that the operators had a positive attitude toward safety, recognized the improvements made in procedures and had been sensitized to the need to use and adhere to procedures. NRC review of procedures revised under the procedure upgrade program found them substantially improved and adequate for use.

Additional management attention in the safety tagging area appeared effective in resolving outstanding weaknesses and the improved performance was adequate to support safe plant operation. Operating procedures continue to be upgraded as part of the Procedure Upgrade Project (PUP); those required to operate the plant were reviewed, revised as necessary, then validated on the plant simulator by licensee personnel. Those procedures not yet revised were found adequate to support power operations. An improved attitude toward procedure adherence and a heightened safety perspective were noted by the RATI.

The improving trend in the Operations functional area has continued since the conclusion of the SALP period. Operators are professional and well trained. Operations crews have been observed in simulator training and appropriate procedures are being upgraded, as confirmed by multiple NRC inspections. The current level of performance is adequate to support safe operation of the plant. The staff therefore concludes the plant operating staff is ready for restart.

Management Readiness

The STI determined that a primary contributor to the licensee's decline in performance was an operating style which apparently placed undue emphasis on power production. Additionally, inadequate communication of goals and expectations, a failure to recognize and respond to changes in the nuclear industry and the regulatory environment, and a complex project management matrix organization were determined to be causative factors. The NRC was particularly concerned about a licensee management decision to restart Unit 2 in the Spring of 1989 despite the existence of a non-isolable leak in a steam generator blowdown line which subsequently degraded sufficiently to force a shutdown.

The licensee has undertaken a number of initiatives to correct these problems. Since the shutdown of Unit 1 in May 1989, licensee management has emphasized a philosophy of safety over production and has instituted a program of mandatory procedure adherence, and expended considerable effort to better communicate goals and expectations. Additionally, a number of specific actions were undertaken to resolve issues identified by the STI and CAL.

Since inclusion of the plant on the NRC list of plants warranting close agency attention, the licensee has made a number of personnel and organizational changes designed to strengthen and improve staff performance. In January 1989, a strong manager from outside the nuclear organization assumed duties as the Vice President - Nuclear Energy. Since his arrival, he has added an experienced maintenance manager from outside the company, an outage planning department headed by an experienced manager with extensive nuclear experience from within the company, and added experienced nuclear professionals from outside the company in the licensing, engineering and outage planning departments. In February 1990, an experienced manager from within the company was assigned as Plant Manager. Also, a new department headed by the former Plant Manager responsible for nuclear safety and planning was created as well as appointing a new Quality Assurance Manager with significant nuclear operations experience. These changes were made in order to strengthen the site organization, improve communications both between departments and within groups and foster a stronger safety-conscious matrix organization. NRC observations and inspections conducted to date indicate the changes have resulted in improvements in licensee management's performance and organization.

The RATI noted improvements in management's involvement in safety assessment and quality verification. However, the NRC was concerned that the multiplicity and complexity of the diverse corrective action systems, the size of backlogs and inconsistencies in methods of prioritization, tracking and management review, could adversely affect management's ability to screen, classify and prioritize deficiencies. While the long-term solution involving development of the problem report program was an initiative in the PIP, it is not yet in place. The licensee has developed an adequate interim screening and prioritizing system, which will be used during the time between plant restart and the implementation of the problem report program. This interim program has been reviewed by the NRC and should provide adequate screening and management attention while the long-term program is under development.

As a result of the low temperature overpressure protection (LTOP) issue which arose in November 1989, the licensee, in order to qualitatively assess its ability to address NRC issues of potentially high safety significance, evaluated a number of issues which, in its opinion, had greater potential to bring out an item of high safety significance. With the exception of three previously identified issues [LTOP, post accident sampling system (PASS) and environmental qualifications (EQ)], the licensee concluded that the results of the project demonstrated that it had identified, implemented and maintained commitments to the NRC that were important to the safe operation of Calvert Cliffs. An NRC inspection reviewed the licensee's program and determined that the results of the project provided reasonable assurance that prior commitments of safety significance had been adequately addressed and that there was minimal likelihood of additional issues of high safety significance which remained unidentified.

The area of Safety Assessment and Quality Verification was rated Category 3 in the most recent SALP with deficiencies noted in communications, corrective action programs and surveillances. Some improvement was noted near the end of the period as a result of corrective actions taken by the licensee to strengthen the QA audit function and self-assessment capabilities.

The licensee has developed a special startup plan which includes a programmatic self-assessment to evaluate performance during the restart and operation of Unit 1. This program establishes formal licensee-administered hold points at mode changes and at specified power levels. Assessments will be made at these hold points to ensure readiness to continue the startup and power escalation. The plan also includes an overall assessment following the completion of power ascension. The assessments described above will involve independent observations by a dedicated team and formal reviews by the line organization and a Startup Review Board chaired by the Plant Manager. The licensee has agreed to provide a report on the results of this overall assessment to the NRC and discuss it with the NRC in a management meeting shortly after completion of an initial operational period.

In summary, the licensee has initiated a number of short and long-term actions designed to correct deficiencies in the management of Calvert Cliffs, including upgrades in procedures, corrective action programs, operating philosophy and personnel additions and changes and has a separate plan in place to assess its performance in the forthcoming plant startup and operation. The NRC has reviewed the actions taken to correct specific items identified in the STI and the CAL and has reviewed the licensee's startup plan. The staff concludes that the licensee's management organization is ready for the startup of Calvert Cliffs Unit 1.

NRC Activities

The NRC has significantly increased its inspection activities at Calvert Cliffs since December 1988. Four team inspections (a special team inspection in March 1989, a readiness assessment team inspection in November 1989, a maintenance team inspection in February 1990 and a commitment management inspection in March 1990) assessed, in detail, the licensee's efforts to improve performance. Extensive coverage has been supplied by both resident and regional inspectors, especially in areas such as the detailed review of CAL, STI and RATI close-out packages and the implementation of programs to upgrade procedures and effectively manage corrective actions.

A number of system walkdowns and valve line-up verifications have recently been conducted to assess the plant's physical readiness to restart. Maintenance and surveillance activities have been evaluated to verify their readiness to support restart of one unit. Detailed observations and assessments were made concerning operating personnel in the use of and adherence to procedures during performance in the plant-specific simulator.

The closeout of items from the CALs (89-08 and Supplement 1), the STI (IR No. 50-317/89-200) and the RATI (IR No. 50-317/89-81) is documented in the following inspection reports:

- 50-317/89-23
- 50-318/89-23
- 50-317/89-25
- 50-318/89-26
- 50-317/89-81
- 50-317/90-02
- 50-318/90-02
- 50-317/90-05
- 50-318/90-05
- 50-317/90-81
- 50-318/90-81

In preparation for the restart, the NRC has issued an augmented startup inspection plan. The inspection is intended to verify that startup preparations have been properly completed, operators have been trained on modifications made, surveillances have been completed, maintenance activities are controlled and that management and operators conduct a controlled, safe and orderly startup. The plan identifies the weekly activities required to observe the licensee's actions. Some around-the-clock coverage is anticipated during critical and power operations, with backshift coverage during mode changes and significant evolutions.

Conclusions

The staff has concluded that the licensee is ready in all respects, to restart and operate Calvert Cliffs Unit 1. Consistent with our approach to facilities which the NRC closely monitors and to assure that the licensee has satisfactorily demonstrated its ability to self-assess its performance, we recommend a phased release from the CAL. The staff recommends that the forthcoming supplement to CAL 89-08 indicate that NRC agrees to the restart of Calvert Cliffs Unit 1 alone. The CAL supplement should also indicate our acknowledgement of the licensee's startup inspection plan for the brief operational period noted above and our intention to perform an augmented inspection during this time frame. Prior to the restart of Calvert Cliffs Unit 1 after the forthcoming surveillance outage, we will evaluate the licensee's performance in starting up, operating the single unit and conducting the subsequent outage. Further, we would meet with the licensee to evaluate the results of the licensee's startup self-assessment. Prior to restart of Unit 2, we will need to evaluate the physical readiness of the plant including repairs to the pressurizer, and assess the licensee's ability to adequately control the operation of both units simultaneously. Restart of Unit 2 should require formal approval from the Regional Administrator.