



CHARLES CENTER • P.O. BOX 1475 • BALTIMORE, MARYLAND 21203-1475

GEORGE C. CREEL
VICE PRESIDENT
NUCLEAR ENERGY
(301) 260-4455

August 27, 1991

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
Request for Amendment; Snubber Functional Testing Intervals

REFERENCE: (a) Generic Letter 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24 Month Fuel Cycle," dated April 2, 1991

Gentlemen:

The Baltimore Gas and Electric Company hereby requests an Amendment to its Operating License Nos. DPR-53 and DPR-69 for Calvert Cliffs Unit Nos. 1 & 2, respectively, with the submittal of the proposed changes to the Technical Specifications.

DESCRIPTION

The proposed amendment would revise the Technical Specifications for both Units 1 and 2 to increase the specified snubber functional testing and service life monitoring surveillance intervals to accommodate the 24-month fuel cycles currently in use at Calvert Cliffs. This requested change is based on a history of low snubber failure rates and an effective snubber maintenance program. As requested in Generic Letter (GL) 91-04, an evaluation in support of the change concludes that the effect on safety is small and does not invalidate any assumption in the plant licensing basis. Additionally, an update is requested to the BASES for Specification 4.0.2 to reflect the wording proposed by the recently issued GL 91-04.

BACKGROUND

Hydraulic snubbers are provided as movement restraints on plant systems to provide protection of system structural integrity during and following an event involving dynamic loading of that system, yet allow for thermal movement during normal plant temperature fluctuations. The Technical Specifications impose surveillance requirements for visual inspection, functional testing, and service life monitoring of these safety-related snubbers. To verify that a snubber can operate within specific

9109030131 910827
PDR ADOCK 05000317
P PDR

P088354517

A001
11

performance limits, functional testing is periodically performed that involves removing the snubber from its installation and performing bench-testing to verify that the activation acceleration and the bleed rate are within their specified ranges. Functional testing is intended to provide a high confidence level that the snubbers would operate within these specified acceptance limits. The performance of visual examinations is a separate process that complements the functional testing program and provides additional confidence of snubber operability through periodic examination to verify that the general mechanical and structural condition of the support is acceptable. In addition, service life monitoring is conducted to assure that the snubber's indicated service life will not be exceeded prior to its next review. This monitoring consists of a documentation review of the expected service life and the testing and maintenance records, and an evaluation of capabilities until the next scheduled functional testing.

REQUESTED CHANGE

Change pages 3/4 7-26 and 3/4 7-26b, and Bases pages B3/4 0-3 and B3/4 7-5 of the Unit 1 and Unit 2 Technical Specifications as shown on the marked-up pages attached to this transmittal.

The frequency for conducting Surveillance Requirement 4.7.8.1.e would be revised from a once per every 18 months to require functional testing on a once per Refueling Interval (24 months) to accommodate the current 24-month fuel cycle in use at Calvert Cliffs. The term "during shutdown" would also be deleted to avoid confusion with the operating conditions defined as Hot Shutdown and Cold Shutdown.

The frequency for conducting Surveillance Requirement 4.7.8.1.e would be similarly revised from a once per every 18 months to require service life monitoring on a once per Refueling Interval (24 months) to accommodate the current 24-month fuel cycle.

Changes to the Bases are included to reflect these requested revisions to the Specifications as identified in the guidance provided by GL 91-04. Also, the Bases for Specification 4.0.2 are requested to be updated to reflect the proposed wording of GL 91-04.

SAFETY ANALYSES/JUSTIFICATION

The current Calvert Cliffs Technical Specifications specify a schedule for snubber functional testing and service life monitoring that is based on an 18-month fuel cycle. However, Calvert Cliffs has changed fuel design and is now operating on a 24-month fuel cycle. Since several Technical Specification surveillances have required frequencies of every 18 months, the operating cycles currently include a mid-cycle outage to conduct the required surveillances. Two of these surveillances are functional testing and the associated service life monitoring of snubbers. Therefore, extended functional testing and service life monitoring surveillance frequencies are proposed to accommodate the longer fuel cycle.

Calvert Cliffs Unit 1 contains 108 accessible snubbers and 218 snubbers which are inaccessible during power operation. Unit 2 similarly contains 109 accessible snubbers and 172 inaccessible snubbers. In accordance with the Technical Specifications, BGE periodically conducts both visual inspections and functional testing of specified snubbers. Functional testing provides direct indication of the capabilities of the snubber to perform its function. Visual inspections provide an additional mechanism for identification of degraded snubbers which complements the functional testing program and provides additional confidence in snubber operability.

Baltimore Gas and Electric Company has reviewed historical failure data for these hydraulic snubbers at Calvert Cliffs and found them to be very reliable. Visual inspections at Calvert Cliffs have identified two or fewer unacceptable snubbers during each inspection. Of the 6,881 visual inspections conducted at Calvert Cliffs, there have been a total of only 19 failures (less than 0.28%). Functional testing results have also been excellent. A total of 614 snubbers have undergone functional testing at Calvert Cliffs (both units combined). Of these, only seven have been identified as failures, for a functional test failure rate of approximately 1.14%.

We have also compared the failure rates for Calvert Cliffs snubbers to the failure rates for the industry utilizing data from the Snubber Utility Group* data base. The industry has reported approximately 35,850 visual inspections of hydraulic snubbers since 1975, with only approximately 870 reported as failed or degraded, or less than 2.5%. Further, the industry has reported approximately 10,000 functional tests of hydraulic snubbers, with only approximately 1200 reported failures, or approximately 12.1%. Comparison of the visual inspection and functional testing failure rates of Calvert Cliffs with those of the industry indicates that the snubber maintenance program in place at Calvert Cliffs has been very effective.

The structure of the existing Technical Specifications for snubber visual inspection and functional testing (i.e., increased failure rates will lead to increased frequency of inspections or additional snubbers tested) provides significant incentive for a proper installation and maintenance program. Our review of industry's reported failure mechanisms for hydraulic snubbers indicates that snubber failure is typically not age-related, but rather due to outside influences, such as poor installation, failure to maintain proper fluid level and purity, or an ineffective seal maintenance program. These factors have led BG&E to develop careful installation practices and an effective maintenance program which are evidenced by the low failure rate at Calvert Cliffs. Extending the functional testing surveillance interval to 24 months would not effect the continuation of these installation and maintenance practices, and would therefore not have a significant effect on the failure mechanism of hydraulic snubbers at Calvert Cliffs.

The service life monitoring program provides for a periodic snubber performance evaluation to determine which snubbers would reach the end of their expected service life prior to the next review. These snubbers are replaced or refurbished to extend their service life. Extending the monitoring program intervals from 18 to 24 months would essentially be an administrative change to include the new interval length into the program. The performance evaluations would then consider snubbers whose expected service life would be reached during the next 24 months instead of during the next 18 months. However, with the proposed change, the first of these 24-month evaluations would be performed within 18 months of the previous evaluation to provide a continuous monitoring program.

The Bases for Surveillance Requirement 4.0.2 are revised to be consistent with the proposed wording of GL 91-04. Surveillance Requirement 4.0.2 and its Bases were previously revised in Unit 1/Unit 2 Amendment Nos. 150/132 prior to the issuance of GL 91-04 with slightly different wording. The revised wording would provide consistency with the industry guidance and provide a statement regarding the performance of surveillances during operation if the surveillance is normally required to be performed during an outage.

* An industry organization formed to share technical information about the maintenance, inspection and testing of snubbers.

DETERMINATION OF SIGNIFICANT HAZARDS:

The proposed change has been evaluated against the standards in 10 CFR 50.92 and has been determined to not involve a significant hazards consideration, in that operation of the facility in accordance with the proposed amendment:

- (1) *Would not involve a significant increase in the probability or consequences of an accident previously evaluated.*

The snubbers at Calvert Cliffs have been highly reliable as evidenced by a comparison of failure rates with the industry average. Also, the typical failure mechanism is not time dependent, but is due to outside influences, such as poor installation, failure to maintain proper fluid level and purity, or an ineffective seal maintenance program. Further, the small increase in the surveillance interval is expected to be offset by reducing the number of shutdowns and potential challenges to safety systems that would be required to conduct the functional testing on an 18-month basis. The change to the service life monitoring interval is essentially administrative since the program assures the indicated operating life of the snubber will not be exceeded prior to the next review. Therefore, the proposed change does not involve a significant increase in the probability of an accident previously evaluated.

Also, the change in the functional testing and service life monitoring frequency does not impact the response of any equipment to previously analyzed accidents. Therefore, the proposed change does not involve a significant increase in the consequences of an accident previously evaluated.

- (2) *Would not create the possibility of a new or different type of accident from any accident previously evaluated.*

The revised testing interval will continue to demonstrate the ability of the equipment to provide dynamic load support during and following a seismic event. No new equipment is being added to the plant and no change is being made in the way existing equipment is being operated or maintained. Therefore, the proposed increase in the snubber functional testing and service life monitoring intervals does not create the possibility of a new or different type of accident from any accident previously evaluated.

- (3) *Would not involve a significant reduction in a margin of safety.*

The proposed extension of the snubber functional testing and service life monitoring intervals continues to provide protection of the functional reliability of the systems which the snubbers support. The testing program continues to provide incentive for proper maintenance of the snubbers. Therefore, the proposed change does not involve a significant reduction in the margin of safety.

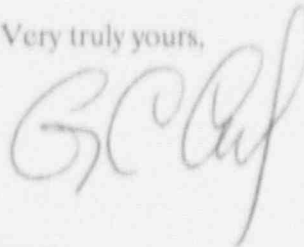
SCHEDULE

This change is requested to be approved and issued by October 30, 1991, to allow time for appropriate planning of the next outage during which functional testing is scheduled.

SAFETY COMMITTEE REVIEW

These proposed changes to the Technical Specifications and our determination of significant hazards have been reviewed by our Plant Operations and Safety Review Committee and Off-Site Safety Review Committee, and they have concluded that implementation of these changes will not result in an undue risk to the health and safety of the public.

Very truly yours,



STATE OF MARYLAND :
: TO WIT :
COUNTY OF CALVERT :

I hereby certify that on the 27th day of August, 1991, before me, the subscriber, a Notary Public of the State of Maryland in and for Calvert County, personally appeared George C. Creel, being duly sworn, and states that he is Vice President of the Baltimore Gas and Electric Company, a corporation of the State of Maryland; that he provides the foregoing information for the purposes therein set forth; that the statements made are true and correct to the best of his knowledge, information, and belief; and that he was authorized to provide the information on behalf of said Corporation.

WITNESS my Hand and Notarial Seal:


Notary Public

My Commission Expires:

February 2, 1994
Date

GCC/ERG/erg/dlm

Attachments

Document Control Desk

August 27, 1991

Page 6

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
J. H. Walter, PSC