

March 24, 1989

Docket No. 50-318

Mr. G. C. Creel  
Vice President - Nuclear Energy  
Baltimore Gas and Electric Company  
Calvert Cliffs Nuclear Power Plant  
MD Rtes. 2 & 4  
P. O. Box 1535  
Lusby, Maryland 20657

DISTRIBUTION

Docket File	NRC PDR
PDI-1 Rdg	Local PDR
GLainas	BBoger
RCapra	CVogan
SMcNeil	LTripp, RI
OGC	DHagan
EJordan	BGrimes
TMeek (4)	WJones
EButcher	ACRS (10)
GPA/PA	ARM/LFMB
	LBMarsh

Dear Mr. Creel:

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. 71025)

The Commission has issued the enclosed Amendment No. 119 to Facility Operating License No. DPR-69 for the Calvert Cliffs Power Plant, Unit No. 2. This amendment consists of changes to the Technical Specifications (TS) in response to your application transmitted by letter dated October 14, 1988.

This amendment modifies TS 3/4.7.8, "Snubbers," by: 1) providing a one-time, temporary extension to the maximum surveillance interval, of 18 months plus 25%, permitted for conducting snubber functional tests by TS Surveillance Requirement 4.7.8.1.c, "Functional Tests." This temporary change shall expire at 11:59 p.m. on May 17, 1989 or upon reaching 199.9°F average reactor coolant system (RCS) temperature during initial RCS heatup following the Unit 2 Cycle 9 refueling outage, whichever comes first.

In addition, this amendment corrects nomenclature errors in TS 3/4.7.8, "Snubbers," and deletes an obsolete note in TS 4.7.8.1 concerning the start date for steam generator snubber testing.

A copy of the related Safety Evaluation is enclosed.

A copy of the Amendment and a Notice of Issuance are being forwarded to the Office of the Federal Register for publication.

Sincerely,

*Scott Alexander McNeil*  
Scott Alexander McNeil, Project Manager  
Project Directorate I-1  
Division of Reactor Projects, I/II

Enclosures:

1. Amendment No. 119 to DPR-69
2. Safety Evaluation

cc: w/enclosures  
See next page

DFOI  
11  
*CPJH*

[AMEND 71025]

8903300352	890324
PDR	ADOCK 05000318
P	PDC

UFC	:PDI-1	:PDI-1	:OGC	:EMEB	:PDI-1	:	:
NAME	:CVogan	:SMcNeil	:vr	:LBMarsh	:RCapra	:	:
DATE	:3/23/89	:3/23/89	:3/24/89	:3/24/89	:3/24/89	:	:

Mr. G. C. Creel  
Baltimore Gas & Electric Company

Calvert Cliffs Nuclear Power Plant

cc:

Mr. William T. Bowen, President  
Calvert County Board of  
Commissioners  
Prince Frederick, Maryland 20768

D. A. Brune, Esq.  
General Counsel  
Baltimore Gas and Electric Company  
P. O. Box 1475  
Baltimore, Maryland 21203

Mr. Jay E. Silberg, Esq.  
Shaw, Pittman, Potts and Trowbridge  
1800 M Street, NW  
Washington, DC 20036

Mr. W. J. Lippold, General Supervisor  
Technical Services Engineering  
Calvert Cliffs Nuclear Power Plant  
MD Rts 2 & 4, P. O. Box 1535  
Lusby, Maryland 20657

Resident Inspector  
c/o U.S. Nuclear Regulatory Commission  
P. O. Box 437  
Lusby, Maryland 20657

Department of Natural Resources  
Energy Administration, Power Plant  
Siting Program  
ATTN: Mr. T. Magette  
Tawes State Office Building  
Annapolis, Maryland 21204

Regional Administrator, Region I  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, Pennsylvania 19406



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

BALTIMORE GAS AND ELECTRIC COMPANY

DOCKET NO. 50-318

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 119  
License No. DPR-69

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Baltimore Gas and Electric Company (the licensee) dated October 14, 1988, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.2 of Facility Operating License No. DPR-69 is hereby amended to read as follows:

8903300354 890324  
PDR ADOCK 05000318  
P FDC

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No.119 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

*Donald S. Brinton*

Robert A. Capra, Director *for*  
Project Directorate I-1  
Division of Reactor Projects, I/II

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: March 24, 1989

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 119 FACILITY OPERATING LICENSE NO. DPR-69

DOCKET NO. 50-318

Revise Appendix A as follows:

Remove Pages

3/4 7-25  
3/4 7-26

Insert Pages

3/4 7-25  
3/4 7-26(t)<sup>1</sup>  
3/4 7-26<sup>2</sup>

1 Page 3/4 7-26(t) contains a temporary change that is effective until 11:59 p.m. on May 17, 1989 or until reaching 199.9°F average reactor coolant system (RCS) temperature during initial RCS heatup following the Unit 2 Cycle 9 refueling outage.

2 Page 3/4 7-26 replaces page 3/4 7-26(t).

PLANT SYSTEMS

3/4.7.8 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.8.1 All safety related snubbers<sup>1</sup> shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4. (MODES 5 and 6 for snubbers located on systems required OPERABLE in those MODES.)

ACTION:

With one or more snubbers inoperable, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status, and perform an engineering evaluation\* per Specification 4.7.8.1.b and c on the supported component or declare the supported system inoperable and follow the appropriate ACTION statement for that system.

SURVEILLANCE REQUIREMENTS

4.7.8.1 Each snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirements of Specification 4.0.5. As used in this Specification, type of snubber shall mean snubbers of the same design and manufacturer, irrespective of capacity.

a. Visual Inspections

Visual inspections shall be performed in accordance with the following schedule:

<u>No. Inoperable Snubbers of Each Type per Inspection Period</u>	<u>Subsequent Visual** Inspection Period#</u>
0	18 months + 25%
1	12 months + 25%
2	6 months + 25%
3, 4	124 days + 25%
5, 6, 7	62 days + 25%
8 or more	31 days + 25%

The snubbers may be further categorized into two groups: Those accessible and those inaccessible during reactor operation. Each group may be inspected independently in accordance with the above schedule.

<sup>1</sup> Safety related snubbers include those snubbers installed on safety related systems and snubbers on non-safety related systems if their failure or the failure of the system on which they are installed would have an adverse effect on any safety related system.

\* A documented, visual inspection shall be sufficient to meet the requirements for an engineering evaluation. Additional analyses, as needed, shall be completed in a reasonable period of time.

\*\* The inspection interval shall not be lengthened more than two steps at a time.

# The provisions of Specification 4.0.2 are not applicable.

## PLANT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

#### b. Visual Inspection Acceptance Criteria

Visual inspections shall verify (1) that there are no visible indications of damage or impaired OPERABILITY, and (2) that the snubber installation exhibits no visual indications of detachment from foundations or supporting structures. Snubbers which appear inoperable as a result of visual inspections may be determined OPERABLE for the purpose of establishing the next visual inspection interval, providing that (1) the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers that may be generically susceptible; and/or (2) the affected snubber is functionally tested in the as found condition and determined OPERABLE per Specification 4.7.8.1.d, as applicable. When the fluid port of a hydraulic snubber is found to be uncovered, the snubber shall be determined inoperable unless it can be determined OPERABLE via functional testing for the purpose of establishing the next visual inspection interval.

For the snubber(s) found inoperable, an engineering evaluation shall be performed on the component(s) which are supported by the snubber(s). The scope of this engineering evaluation shall be consistent with the licensee's engineering judgment and may be limited to a visual inspection of the supported component(s). The purpose of this engineering evaluation shall be to determine if the component(s) supported by the snubber(s) were adversely affected by the inoperability of the snubber(s) in order to ensure that the supported component remains capable of meeting the designed service.

#### c. Functional Tests

At least once per 18 months\* during shutdown, a representative sample of 10% of each type of snubbers in use in the plant shall be functionally tested either in place or in a bench test. For each snubber that does not meet the functional test acceptance criteria of Specification 4.7.8.1.d, an additional 5% of that type snubber shall be functionally tested until no more failures are found or until all snubbers of that type have been functionally tested.

\* In addition to the surveillance interval extensions permitted by Specification 4.0.2, a one-time, temporary amendment of Surveillance Requirement 4.7.8.1.c shall provide a schedular extension of up to 54 days for the performance of the snubber functional tests. This extension expires at 11:59 p.m. on May 17, 1989 or upon reaching 199.9°F average reactor coolant system (RCS) temperature during initial RCS heatup following the Unit 2 Cycle 9 refueling outage, whichever occurs first.

**PLANT SYSTEMS**

**3/4.7.8 SNUBBERS**

**LIMITING CONDITION FOR OPERATION**

3.7.8.1 All safety related snubbers<sup>1</sup> shall be OPERABLE.

**APPLICABILITY:** MODES 1, 2, 3 and 4. (MODES 5 and 6 for snubbers located on systems required OPERABLE in those MODES.)

**ACTION:**

With one or more snubbers inoperable, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status, and perform an engineering evaluation\* per Specification 4.7.8.1.b and c on the supported component or declare the supported system inoperable and follow the appropriate ACTION statement for that system.

**SURVEILLANCE REQUIREMENTS**

4.7.8.1 Each snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirements of Specification 4.0.5. As used in this Specification, type of snubber shall mean snubbers of the same design and manufacturer, irrespective of capacity.

a. **Visual Inspections**

Visual inspections shall be performed in accordance with the following schedule:

<u>No. Inoperable Snubbers of Each Type per Inspection Period</u>	<u>Subsequent Visual** Inspection Period#</u>
0	18 months + 25%
1	12 months + 25%
2	6 months + 25%
3, 4	124 days + 25%
5, 6, 7	62 days + 25%
8 or more	31 days + 25%

The snubbers may be further categorized into two groups: Those accessible and those inaccessible during reactor operation. Each group may be inspected independently in accordance with the above schedule.

<sup>1</sup> Safety related snubbers include those snubbers installed on safety related systems and snubbers on non-safety related systems if their failure or the failure of the system on which they are installed would have an adverse effect on any safety related system.

\* A documented, visual inspection shall be sufficient to meet the requirements for an engineering evaluation. Additional analyses, as needed, shall be completed in a reasonable period of time.

\*\* The inspection interval shall not be lengthened more than two steps at a time.

# The provisions of Specification 4.0.2 are not applicable.

## PLANT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

#### b. Visual Inspection Acceptance Criteria

Visual inspections shall verify (1) that there are no visible indications of damage or impaired OPERABILITY, and (2) that the snubber installation exhibits no visual indications of detachment from foundations or supporting structures. Snubbers which appear inoperable as a result of visual inspections may be determined OPERABLE for the purpose of establishing the next visual inspection interval, providing that (1) the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers that may be generically susceptible; and/or (2) the affected snubber is functionally tested in the as found condition and determined OPERABLE per Specification 4.7.8.1.d, as applicable. When the fluid port of a hydraulic snubber is found to be uncovered, the snubber shall be determined inoperable unless it can be determined OPERABLE via functional testing for the purpose of establishing the next visual inspection interval.

For the snubber(s) found inoperable, an engineering evaluation shall be performed on the component(s) which are supported by the snubber(s). The scope of this engineering evaluation shall be consistent with the licensee's engineering judgment and may be limited to a visual inspection of the supported component(s). The purpose of this engineering evaluation shall be to determine if the component(s) supported by the snubber(s) were adversely affected by the inoperability of the snubber(s) in order to ensure that the supported component remains capable of meeting the designed service.

#### c. Functional Tests

At least once per 18 months\* during shutdown, a representative sample of 10% of each type of snubbers in use in the plant shall be functionally tested either in place or in a bench test. For each snubber that does not meet the functional test acceptance criteria of Specification 4.7.8.1.d, an additional 5% of that type snubber shall be functionally tested until no more failures are found or until all snubbers of that type have been functionally tested.

\* Effective at 11:59 p.m. on May 17, 1989 or upon reaching 199.9°F average reactor coolant system (RCS) temperature during initial RCS heatup following the Unit 2 Cycle 9 refueling outage, whichever occurs first.  
Replaces page 3/4 7-26(t).



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 119 TO FACILITY OPERATING LICENSE NO. DPR-69

BALTIMORE GAS AND ELECTRIC COMPANY  
CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT 2

DOCKET NO. 50-318

ONE-TIME SCHEDULAR EXTENSION FOR SNUBBER FUNCTIONAL TESTS

1.0 INTRODUCTION

By its letter dated October 14, 1988, the Baltimore Gas and Electric Company (BG&E, the licensee) proposed changes to the Unit 2 Technical Specifications (TS). The proposed changes would 1) provide a one-time, temporary surveillance interval extension of up to 54 days for performing the snubber functional tests required by TS 4.7.8.1.c, "Functional Tests," 2) correct nomenclature errors in TS 3/4.7.8, "Snubbers," and 3) delete an obsolete note in TS 4.7.8.1 which states that "the steam generator snubbers 2-63-11 through 2-63-26 need not be functionally tested until the refueling outage following June 30, 1985."

The temporary, one-time snubber functional test surveillance interval extension shall expire at 11:59 p.m. on May 17, 1989 or upon reaching 199.9°F average reactor coolant system (RCS) temperature during initial RCS heatup following the Unit 2 Cycle 9 refueling outage.

2.0 BACKGROUND

Currently, TS 4.7.8.1.c requires the performance of snubber functional tests on a representative sample of 10% of each type of snubber in use at Unit 2 at least once per 18 months (550 days) while the unit is shut down. TS 4.0.2.a allows a maximum surveillance interval extension of 25%.

During the previous refueling outage, Calvert Cliffs Unit 2 shifted from an 18-month to a 24-month operating cycle. The last snubber functional tests were completed on May 7, 1987. Even though Unit 2 shut down and commenced its refueling outage eight days early, due to a material failure, the performance of the snubber functional tests could not be rescheduled for a completion date early enough to prevent the mode 5 and 6 snubbers (seven on high pressure safety injection and 10 on shutdown cooling) from being declared inoperable, and thus rendering their associated systems inoperable.

Furthermore, due to this material failure which necessitated immediate Unit 2 shutdown and cooldown to mode 5, the licensee was unable to conduct several

8903300357 890324  
PDR ADOCK 05000318  
P PDC

required surveillances that must be conducted in modes 3 and 4 prior to refueling. Consequently, Unit 2 may now need to continue to operate in modes 3 or 4 for one to three days after March 25, 1989 (the 18 month plus 25% snubber functional test due date).

Therefore, the licensee has requested a snubber functional test extension to preclude the requirement to declare safety systems inoperable for modes 3 through 6 due to the failure to perform this test at the required surveillance interval.

### 3.0 EVALUATION

Snubbers are required to be operable to ensure that the structural integrity of the RCS and of all other safety-related systems is maintained during and following seismic events, primarily, or also for other events initiating dynamic loads (e.g., a water hammer event).

Calvert Cliffs Unit 2 is located in a region that has experienced only infrequent and minor earthquake activity, with only 19 minor to moderate intensity earthquakes reported as occurring within 100 miles of the site over the last 250 years. Of these, none occurring within 50 miles of the site resulted in any structural damage to standing buildings.

Currently, BG&E utilizes 277 safety-related snubbers at Unit 2. These snubbers are hydraulic snubbers manufactured by Grinnell which are typed according to their two basic designs as described in the BG&E application dated April 25, 1986 and the corresponding NRC Safety evaluation for Amendment No. 100 to Facility Operating License No. DPR-69. The small bore type snubbers, (261 total) constituting all plant safety-related snubbers with the exception of the steam generator snubbers, have bore sizes ranging from 1.5" to 1.6" and strokes from 3.75" to 10". These small bore snubbers have the same design valve blocks with only one valve block per snubber. The large bore type snubbers, (16 total) which are located on the steam generators, have a 10" bore, a 5" stroke and two valve blocks per snubber. In addition, the large bore snubber valve blocks are designed differently from those on the small bore snubbers. Unit 1 has a similar snubber configuration. Of these 277 snubbers at Unit 2, only 17 are required to be operable in modes 5 and 6 (10 for shutdown cooling and 7 for high pressure safety injection).

Since 1978, the licensee has functionally tested 413 snubbers on Unit 1 and 2 combined with only three test failures, all of which, however, were small bore snubbers on Unit 2. Two failures occurred in November 1985 and one in May 1987. This corresponds to a failure rate of approximately 0.7% over a period of greater than 10 years.

In addition, the Unit 2 snubbers have 10-year service lives while the oldest snubbers have currently seen 7.5 years of use. Consequently, the end of snubber service life for any Unit 2 snubber should not be reached until the end of 1991.

Finally, of the 17 snubbers required for modes 5 or 6 operation, 5 (29%) have individually undergone successful functional tests within the last two years.

The NRC staff has reviewed the snubber history at Calvert Cliffs and has determined that the probability of any further significant degradation of the 1) 261 snubbers receiving a surveillance interval extension of approximately three days and 2) the 17 snubbers requiring up to a 54-day extension, is negligible. Furthermore, based upon the Unit 2 snubber history and upon the recent testing of several of the modes 5 and 6 required snubbers, the NRC staff has determined that the Unit 2 snubbers should be capable of satisfactorily performing their function within those interval extensions.

An increase in the probability or the consequences of a snubber's failure to fulfill its function would occur only as the result of a sequential degradation of a snubber followed by a seismic or dynamic load creating event. The probability of a seismic or dynamic loading event is not affected by this proposed one-time snubber functional test interval extension. Consequently, the NRC staff has determined that this schedular extension will not significantly increase the probability or magnitude of a loss of safety-related system structural integrity. The staff therefore concludes that the proposed temporary amendment to the TS Surveillance Requirement 4.7.8.1.c, providing a one-time schedular extension for snubber functional tests, is acceptable.

This extension shall expire at 11:59 p.m. on May 17, 1989 or upon reaching 199.9°F average RCS temperature during initial RCS heatup following the Unit 2 Cycle 9 refueling outage, whichever occurs earlier. At expiration, the currently required 18-month surveillance interval of TS 4.7.8.1.c shall be reinstated.

This evaluation is provided to support this one-time, temporary schedular extension only and is not applicable, nor can it be utilized, as justification for permanent schedular changes to snubber inspection and testing intervals beyond the currently allowed maximum interval of 18 months (550 days).

The proposed changes to correct nomenclature errors (TS 4.7.8.1.b and 4.7.8.1.d were noted as TS 4.7.8.b and 4.7.8.d in several places in TS 3/4.7.8.) and to delete the obsolete reference to the long-past starting

date for steam generator snubber surveillances are administrative in nature. These changes have no impact on plant design, operation, testing, maintenance or any accident analyses or margins of safety. Thus, the NRC staff has determined that these administrative changes are acceptable.

#### 4.0 INTENT

The intent of the proposed change is to allow, for one-time only, a snubber function test surveillance interval of 18 months (550 days) plus the 25% extension of TS 4.0.2 (138 days) plus an additional extension of up to 54 days. This temporary extension shall expire at 11:59 p.m. on May 17, 1989 or at the first time average RCS temperature reaches 199.9°F following the Unit 2 Cycle 9 core loading.

#### 5.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to a surveillance requirement. The staff has determined that this amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Sec 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

#### 6.0 CONCLUSION

The Commission made a proposed determination that the amendment involves no significant hazards consideration, which was published in the Federal Register (54 FR 7309) on February 17, 1989. The Commission consulted with the State of Maryland. No public comments were received, and the State of Maryland did not have any comments.

Based on the considerations discussed above, the staff concludes that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

#### PRINCIPAL CONTRIBUTOR:

S. A. McNeil

Dated: March 24, 1989