

September 4, 1991

Docket Nos. 50-317
and 50-318

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

Dear Mr. Creel:

SUBJECT: ISSUANCE OF AMENDMENTS FOR CALVERT CLIFFS NUCLEAR POWER PLANT,
UNIT NO. 1 (TAC NO. 80490) AND UNIT NO. 2 (TAC NO. 80491)

The Commission has issued the enclosed Amendment No. 159 to Facility Operating License No. DPR-53 and Amendment No. 139 to Facility Operating License No. DPR-69 for the Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2, respectively. The amendments consist of changes to the Technical Specifications in response to your application transmitted by letter dated May 24, 1991, and supplemented on July 1, 1991.

The amendments revise the Technical Specifications for both units to provide required snubber visual inspection intervals based on the number of inoperable snubbers found during the previous inspection in proportion to the size of the various snubber populations and categories. This change is based on the approach for determining visual inspection intervals developed in the Nuclear Regulatory Commission's Generic Letter 90-09, "Alternative Requirements for Snubber Visual Inspection Intervals and Corrective Actions," dated December 11, 1990. In addition, the amendments also make various editorial revisions for consistency between Units 1 and 2; removal of unnecessary wording or notes, and updates the Bases Section to support the proposed changes.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,
ORIGINAL SIGNED BY:
Daniel G. McDonald, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

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PDR ADDCK 05000317
P PDR

Enclosures:

- 1. Amendment No. 159 to DPR-53
- 2. Amendment No. 139 to DPR-69
- 3. Safety Evaluation

cc w/enclosures:
See next page

OFC	: PDI-1:LA	: PDI-1:PM	: EMEB	: EMEB	: OGC	: PDI-1:D
NAME	: CVogan	: McDonald:ln	: Rajan	: Norberg	: RACapra	
DATE	: 8/5/91	: 8/5/91	: 8/16/91	: 8/16/91	: 9/2/91	: 9/3/91

OFFICIAL RECORD COPY
Document Name: CC 1/2 80490/1

DATED: September 4, 1991

AMENDMENT NO. 159 TO FACILITY OPERATING LICENSE NO. DPR-53-CALVERT CLIFFS UNIT 1
AMENDMENT NO. 139 TO FACILITY OPERATING LICENSE NO. DPR-69-CALVERT CLIFFS UNIT 2

Docket File

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PD Plant-specific file [Gray File]

JRajan *1610*

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555

September 4, 1991

Docket Nos. 50-317
and 50-318

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

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UNIT NO. 1 (TAC NO. 80490) AND UNIT NO. 2 (TAC NO. 80491)

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The amendments revise the Technical Specifications for both units to provide required snubber visual inspection intervals based on the number of inoperable snubbers found during the previous inspection in proportion to the size of the various snubber populations and categories. This change is based on the approach for determining visual inspection intervals developed in the Nuclear Regulatory Commission's Generic Letter 90-09, "Alternative Requirements for Snubber Visual Inspection Intervals and Corrective Actions," dated December 11, 1990. In addition, the amendments also make various editorial revisions for consistency between Units 1 and 2; removal of unnecessary wording or notes, and updates the Bases Section to support the proposed changes.

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Daniel G. McDonald, Senior Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 159 to DPR-53
2. Amendment No. 139 to DPR-69
3. Safety Evaluation

cc w/enclosures:
See next page

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

Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 and 2

cc:

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

BALTIMORE GAS AND ELECTRIC COMPANY

DOCKET NO. 50-317

CALVERT CLIFFS NUCLEAR POWER PLANT UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 159
License No. DPR-53

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Baltimore Gas and Electric Company (the licensee) dated May 24, 1991, and supplemented on July 1, 1991, 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-53 is hereby amended to read as follows:

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(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 159, 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 and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert A. Capra

Robert A. Capra, Director
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 4, 1991



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

BALTIMORE GAS AND ELECTRIC COMPANY

DOCKET NO. 50-318

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 139
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 May 24, 1991 and supplemented on July 1, 1991, 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:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 139, 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 and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert A. Capra

Robert A. Capra, Director
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 4, 1991

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 159 FACILITY OPERATING LICENSE NO. DPR-53

AMENDMENT NO. 139 FACILITY OPERATING LICENSE NO. DPR-69

DOCKET NOS. 50-317 AND 50-318

Revise Appendix A as follows:

<u>Remove Pages</u>	<u>Insert Pages</u>
3/4 7-25	3/4 7-25
3/4 7-26	3/4 7-26
—	3/4 7-26c
—	3/4 7-26d
B 3/4 7-5	B 3/4 7-5
B 3/4 7-6	B 3/4 7-6
B 3/4 7-7	B 3/4 7-7

PLANT SYSTEMS

3/4.7.8 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.8.1 All safety related snubbers¹ 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 in addition to 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 schedule determined by Table 4.7-3. Snubbers are categorized as inaccessible or accessible during reactor operation. Each of these categories (inaccessible and accessible) may be inspected independently or jointly according to the schedule determined by Table 4.7-3. The visual inspection interval for each population or category of snubbers shall be determined based upon the criteria provided in Table 4.7-3 and the first inspection interval determined using this criteria shall be based upon the previous inspection interval as established by the requirements in effect before Amendment 159.

¹ 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.

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, remedied and functionally tested for that particular snubber and for other snubbers that may be generically susceptible; 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, and 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.

* The Steam Generator snubbers 1-63-13 through 1-63-28 need not be functionally tested until the refueling outage following June 30, 1985.

TABLE 4.7-3

SNUBBER VISUAL INSPECTION INTERVAL

Population or Category (Notes 1 and 2)	NUMBER OF INOPERABLE SNUBBERS		
	Column A Extend Interval (Notes 3 and 6)	Column B Repeat Interval (Notes 4 and 6)	Column C Reduce Interval (Notes 5 and 6)
1	0	0	1
80	0	0	2
100	0	1	4
150	0	3	8
200	2	5	13
300	5	12	25
400	8	18	36
500	12	24	48
750	20	40	78
1000 or greater	29	56	109

TABLE 4.7-3 (Continued)

TABLE NOTATION

- Note 1: The next visual inspection interval for a snubber population or category size shall be determined based upon the previous inspection interval and the number of inoperable snubbers found during that interval. Snubbers may be categorized, based upon their accessibility during power operation, as accessible or inaccessible. These categories may be examined separately or jointly. However, the licensee must make and document that decision before any inspection and shall use that decision as the basis upon which to determine the next inspection interval for that category.
- Note 2: Interpolation between population or category sizes and the number of inoperable snubbers is permissible. Use next lower integer for the value of the limit for Columns A, B, or C if that integer includes a fractional value of inoperable snubbers as determined by interpolation.
- Note 3: If the number of inoperable snubbers is equal to or less than the number in Column A, the next inspection interval may be twice the previous interval but not greater than 48 months.
- Note 4: If the number of inoperable snubbers is equal to or less than the number in Column B but greater than the number in Column A, the next inspection interval shall be the same as the previous interval.
- Note 5: If the number of inoperable snubbers is equal to or greater than the number in Column C, the next inspection interval shall be two-thirds of the previous interval. However, if the number of inoperable snubbers is less than the number in Column C but greater than the number in Column B, the next interval shall be reduced proportionally by interpolation, that is, the previous interval shall be reduced by a factor that is one-third of the ratio of the difference between the number of inoperable snubbers found during the previous interval and the number in Column B to the difference in the numbers in Columns B and C.
- Note 6: The provisions of Specification 4.0.2 are applicable for all inspection intervals up to and including 48 months.

PLANT SYSTEMS

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environment. The operation of this system and the resultant effects on offsite dosage calculations was assumed in the accident analyses.

3/4.7.8 SNUBBERS

All safety related snubbers are required **OPERABLE** to ensure that the structural integrity of the reactor coolant system and all other safety related systems is maintained during and following a seismic or other event initiating dynamic loads. Snubbers excluded from this inspection program are those installed on non-safety related systems and then only if their failure or failure of the system on which they are installed would have no adverse effect on any safety-related system.

The visual inspection frequency is based upon maintaining a constant level of snubber protection to systems. Therefore, the required inspection interval varies inversely with the observed snubber failures and is determined by the number of inoperable snubbers found during the previous inspection, the total population or category size, and the previous inspection interval.

Snubbers may be categorized, based upon their accessibility during power operation, as accessible or inaccessible. These categories may be examined separately or jointly. However, that decision must be made and documented before any inspection and that decision shall be used as the basis upon which to determine the next inspection interval for that category. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the results of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

When the cause of the rejection of a snubber is clearly established and remedied for that snubber and for any other snubbers that may be generically susceptible, and verified by inservice functional testing, that snubber may be exempted from being counted as inoperable. Generically susceptible snubbers are those which are (1) of a specific make or model, (2) of the same design, and (3) similarly located or exposed to the same environmental conditions such as temperature, radiation, and vibration. These characteristics of the snubber installation shall be evaluated to determine if further functional testing of similar snubber installations is warranted.

A snubber is considered inoperable if it fails to satisfy the acceptance criteria of the visual inspection. When a snubber is found inoperable, an engineering evaluation is performed, in addition to the determination of the snubber mode of failure, in order to determine if any safety-related component or system has been adversely affected by the inoperability of the snubber. The engineering evaluation shall determine whether or not the snubber mode of failure has imparted a significant

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effect or degradation on the supported component or system. Operation may continue indefinitely if an engineering review and evaluation can document within 72 hours that the equipment connected to the snubber can continue to perform its required function(s) with the snubber inoperable. If the review and evaluation cannot justify that the supported equipment will perform its required function(s), the equipment must be declared inoperable and the applicable action requirements met.

The Specification allows inspection intervals to be compatible with a 24 month fuel cycle, up to and including an increase to every other refueling outage. To provide assurance of snubber functional reliability, a representative sample of the installed snubbers of each type* will be functionally tested during plant shutdowns at 18 month intervals. Observed failures of these sample snubbers shall require functional testing of additional units.

The service life of a snubber is evaluated via manufacturer input and information through consideration of the snubber service conditions and associated installation and maintenance records (newly installed snubber, seal replaced, spring replaced, in high radiation area, in high temperature area, etc). The requirement to monitor the snubber service life is included to ensure that the snubbers periodically undergo a performance evaluation in view of their age and operating conditions. The service life program is designed to uniquely reflect the conditions at Calvert Cliffs. The criteria for evaluating service life shall be determined, and documented, by the licensee. Records will provide statistical bases for future consideration of snubber service life. The requirements for the maintenance of records and the snubber service life review are not intended to affect plant operation.

3/4.7.9 SEALED SOURCE CONTAMINATION

The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(c) limits for plutonium. This limitation will ensure that leakage from byproduct, source, and special nuclear material sources will not exceed allowable intake values.

3/4.7.10 WATERTIGHT DOORS

This specification is provided to ensure the protection of safety related equipment from the effects of water or steam escaping from ruptured pipes or components in adjoining rooms.

* Small bore (≤ 8 ") and large bore (> 8 ") hydraulic snubbers are examples of different types of snubbers.

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3/4.7.11 FIRE SUPPRESSION SYSTEMS

The OPERABILITY of the fire suppression systems ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety related equipment is located. The fire suppression system consists of the water system, spray and/or sprinklers, Halon and fire hose stations. The collective capability of the fire suppression systems is adequate to minimize potential damage to safety related equipment and is a major element in the facility fire protection program.

In the event that portions of the fire suppression systems are inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the inoperable equipment is restored to service. Where a continuous fire watch is required in lieu of fire protection equipment and habitability due to heat or radiation is a concern, the fire watch should be stationed in a habitable area as close as possible to the inoperable equipment.

In the event the fire suppression water system becomes inoperable, immediate corrective measures must be taken since this system provides the major fire suppression capability of the plant. The requirement for a twenty-four hour report to the Commission provides for prompt evaluation of the acceptability of the corrective measures to provide adequate fire suppression capability for the continued protection of the nuclear plant.

3/4.7.12 PENETRATION FIRE BARRIERS

The functional integrity of the penetration fire barriers ensures that fires will be confined or adequately retarded from spreading to adjacent portions of the facility. This design feature minimizes the possibility of a single fire rapidly involving several areas of the facility prior to detection and extinguishment. The penetration fire barriers are a passive element in the facility fire protection program and are subject to periodic inspections.

During periods of time when the barriers are not functional, a continuous fire watch is required to be maintained in the vicinity of the affected barrier until the barrier is restore to functional status.

PLANT SYSTEMS

3/4.7.8 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.8.1 All safety related snubbers¹ 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 in addition to 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 schedule determined by Table 4.7-3. Snubbers are categorized as inaccessible or accessible during reactor operation. Each of these categories (inaccessible and accessible) may be inspected independently or jointly according to the schedule determined by Table 4.7-3. The visual inspection interval for each population or category of snubbers shall be determined based upon the criteria provided in Table 4.7-3 and the first inspection interval determined using this criteria shall be based upon the previous inspection interval as established by the requirements in effect before Amendment 139.

¹ 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.

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, remedied and functionally tested for that particular snubber and for other snubbers that may be generically susceptible; 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^oF 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).

TABLE 4.7-3

SNUBBER VISUAL INSPECTION INTERVAL

Population or Category (Notes 1 and 2)	NUMBER OF INOPERABLE SNUBBERS		
	Column A Extend Interval (Notes 3 and 6)	Column B Repeat Interval (Notes 4 and 6)	Column C Reduce Interval (Notes 5 and 6)
1	0	0	1
80	0	0	2
100	0	1	4
150	0	3	8
200	2	5	13
300	5	12	25
400	8	18	36
500	12	24	48
750	20	40	78
1000 or greater	29	56	109

TABLE 4.7-3 (Continued)

TABLE NOTATION

- Note 1: The next visual inspection interval for a snubber population or category size shall be determined based upon the previous inspection interval and the number of inoperable snubbers found during that interval. Snubbers may be categorized, based upon their accessibility during power operation, as accessible or inaccessible. These categories may be examined separately or jointly. However, the licensee must make and document that decision before any inspection and shall use that decision as the basis upon which to determine the next inspection interval for that category.
- Note 2: Interpolation between population or category sizes and the number of inoperable snubbers is permissible. Use next lower integer for the value of the limit for Columns A, B, or C if that integer includes a fractional value of inoperable snubbers as determined by interpolation.
- Note 3: If the number of inoperable snubbers is equal to or less than the number in Column A, the next inspection interval may be twice the previous interval but not greater than 48 months.
- Note 4: If the number of inoperable snubbers is equal to or less than the number in Column B but greater than the number in Column A, the next inspection interval shall be the same as the previous interval.
- Note 5: If the number of inoperable snubbers is equal to or greater than the number in Column C, the next inspection interval shall be two-thirds of the previous interval. However, if the number of inoperable snubbers is less than the number in Column C but greater than the number in Column B, the next interval shall be reduced proportionally by interpolation, that is, the previous interval shall be reduced by a factor that is one-third of the ratio of the difference between the number of inoperable snubbers found during the previous interval and the number in Column B to the difference in the numbers in Columns B and C.
- Note 6: The provisions of Specification 4.0.2 are applicable for all inspection intervals up to and including 48 months.

PLANT SYSTEMS

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environment. The operation of this system and the resultant effects on offsite dosage calculations was assumed in the accident analyses.

3/4.7.8 SNUBBERS

All safety related snubbers are required OPERABLE to ensure that the structural integrity of the reactor coolant system and all other safety related systems is maintained during and following a seismic or other event initiating dynamic loads. Snubbers excluded from this inspection program are those installed on non-safety related systems and then only if their failure or failure of the system on which they are installed would have no adverse effect on any safety-related system.

The visual inspection frequency is based upon maintaining a constant level of snubber protection to systems. Therefore, the required inspection interval varies inversely with the observed snubber failures and is determined by the number of inoperable snubbers found during the previous inspection, the total population or category size, and the previous inspection interval.

Snubbers may be categorized, based upon their accessibility during power operation, as accessible or inaccessible. These categories may be examined separately or jointly. However, that decision must be made and documented before any inspection and that decision shall be used as the basis upon which to determine the next inspection interval for that category. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the results of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

When the cause of the rejection of a snubber is clearly established and remedied for that snubber and for any other snubbers that may be generically susceptible, and verified by inservice functional testing, that snubber may be exempted from being counted as inoperable. Generically susceptible snubbers are those which are (1) of a specific make or model, (2) of the same design, and (3) similarly located or exposed to the same environmental conditions such as temperature, radiation, and vibration. These characteristics of the snubber installation shall be evaluated to determine if further functional testing of similar snubber installations is warranted.

A snubber is considered inoperable if it fails to satisfy the acceptance criteria of the visual inspection. When a snubber is found inoperable, an engineering evaluation is performed, in addition to the determination of the snubber mode of failure, in order to determine if any safety-related component or system has been adversely affected by the inoperability of the snubber. The engineering evaluation shall determine whether or not the snubber mode of failure has imparted a significant

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effect or degradation on the supported component or system. Operation may continue indefinitely if an engineering review and evaluation can document within 72 hours that the equipment connected to the snubber can continue to perform its required function(s) with the snubber inoperable. If the review and evaluation cannot justify that the supported equipment will perform its required function(s), the equipment must be declared inoperable and the applicable action requirements met.

The Specification allows inspection intervals to be compatible with a 24 month fuel cycle, up to and including an increase to every other refueling outage. To provide assurance of snubber functional reliability, a representative sample of the installed snubbers of each type* will be functionally tested during plant shutdowns at 18 month intervals. Observed failures of these sample snubbers shall require functional testing of additional units.

The service life of a snubber is evaluated via manufacturer input and information through consideration of the snubber service conditions and associated installation and maintenance records (newly installed snubber, seal replaced, spring replaced, in high radiation area, in high temperature area, etc). The requirement to monitor the snubber service life is included to ensure that the snubbers periodically undergo a performance evaluation in view of their age and operating conditions. The service life program is designed to uniquely reflect the conditions at Calvert Cliffs. The criteria for evaluating service life shall be determined, and documented, by the licensee. Records will provide statistical bases for future consideration of snubber service life. The requirements for the maintenance of records and the snubber service life review are not intended to affect plant operation.

3/4.7.9 SEALED SOURCE CONTAMINATION

The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(c) limits for plutonium. This limitation will ensure that leakage from byproduct, source, and special nuclear material sources will not exceed allowable intake values.

3/4.7.10 WATERTIGHT DOORS

This specification is provided to ensure the protection of safety related equipment from the effects of water or steam escaping from ruptured pipes or components in adjoining rooms.

* Small bore ($\leq 8"$) and large bore ($> 8"$) hydraulic snubbers are examples of different types of snubbers.

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3/4.7.11 FIRE SUPPRESSION SYSTEMS

The OPERABILITY of the fire suppression systems ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety related equipment is located. The fire suppression system consists of the water system, spray and/or sprinklers, Halon and fire hose stations. The collective capability of the fire suppression systems is adequate to minimize potential damage to safety related equipment and is a major element in the facility fire protection program.

In the event that portions of the fire suppression systems are inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the inoperable equipment is restored to service. Where a continuous fire watch is required in lieu of fire protection equipment and habitability due to heat or radiation is a concern, the fire watch should be stationed in a habitable area as close as possible to the inoperable equipment.

In the event the fire suppression water system becomes inoperable, immediate corrective measures must be taken since this system provides the major fire suppression capability of the plant. The requirement for a twenty-four hour report to the Commission provides for prompt evaluation of the acceptability of the corrective measures to provide adequate fire suppression capability for the continued protection of the nuclear plant.

3/4.7.12 PENETRATION FIRE BARRIERS

The functional integrity of the penetration fire barriers ensures that fires will be confined or adequately retarded from spreading to adjacent portions of the facility. This design feature minimizes the possibility of a single fire rapidly involving several areas of the facility prior to detection and extinguishment. The penetration fire barriers are a passive element in the facility fire protection program and are subject to periodic inspections.

During periods of time when the barriers are not functional, a continuous fire watch is required to be maintained in the vicinity of the affected barrier until the barrier is restore to functional status.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 159 TO FACILITY OPERATING LICENSE NO. DPR-53
AND AMENDMENT NO. 139 TO FACILITY OPERATING LICENSE NO. DPR-69
BALTIMORE GAS AND ELECTRIC COMPANY
CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-317 AND 50-318

1.0 INTRODUCTION

By letter dated May 24, 1991, as supplemented on July 1, 1991, the Baltimore Gas and Electric Company (the licensee) submitted a request for changes to the Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2, Technical Specifications (TS). The requested changes would revise the TS for both units to provide required snubber visual inspection intervals based on the number of inoperable snubbers found during the previous inspection in proportion to the size of the various snubber populations and categories. This requested change is based on the approach for determining visual inspection intervals developed in the Nuclear Regulatory Commission's Generic Letter 90-09, "Alternative Requirements for Snubber Visual Inspection Intervals and Corrective Actions," dated December 11, 1990. In addition, the amendments would make various editorial revisions for consistency between Units 1 and 2, remove unnecessary wording or notes, and update the Bases Section to support the proposed changes.

The July 1, 1991, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination.

2.0 EVALUATION

The snubber visual examination schedule in the existing TS is based on the permissible number of inoperable snubbers found during the visual examination. Because the existing snubber visual examination schedule is based only on the absolute number of inoperable snubbers found during the visual examinations irrespective of the total population of snubbers, licensee's with a large snubber population find the visual examination schedule excessively restrictive and that it subjects plant personnel to additional radiological exposure to comply with the visual examination requirements. As noted in the licensee's amendment request, Calvert Cliffs Unit 1 contains 108 accessible snubbers and 218 inaccessible snubbers. Unit 2 contains 109 accessible snubbers and 172 inaccessible snubbers. Inspection results for Calvert Cliffs typically have identified none or a single inoperable snubber during each inspection and resulted in subsequent inspection intervals of 18 months. The subsequent

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inspection interval was designed to vary inversely with the number of inoperable snubbers identified during an inspection and was maximized at 18 months to match the predominant fuel cycle of the early 1980s. This inspection frequency was intended to maintain a constant level of snubber protection for the systems and was provided in a sliding scale to encourage the adoption of proven maintenance methods and materials with the goal of maximizing the inspection interval.

The purpose of the alternative visual examination schedule is to allow the licensee to perform visual examinations and corrective actions during plant outages without reduction of the confidence level provided by the existing visual examination schedule. The new visual examination schedule specifies the permissible number of inoperable snubbers for various snubber populations. The basic examination interval is the normal fuel cycle up to 24 months, which is the current fuel cycle for each of the Calvert Cliffs' units. This interval may be extended to as long as twice the fuel cycle or reduced to as small as two-thirds of the fuel cycle depending on the number of inoperable snubbers found during the visual examination. The examination interval may vary by ± 25 percent to coincide with the actual outage. Of 6,881 visual inspections that have been conducted at Calvert Cliffs, only 19 failures have occurred (less than 0.28%). These inspection results are similar to those of the industry used as the basis for Generic Letter 90-09. Therefore, the alternative inspection schedule is proposed for implementation at Calvert Cliffs in order to reduce future occupational exposure and reduce resource requirements. The proposed revision allows longer inspection intervals for low numbers of failures and requires shorter inspection intervals for high numbers of failures. The visual inspections proposed in TS 4.7.8.1 are consistent with the guidance provided in the generic letter and are supported by the results of the previous visual inspections and are, therefore, acceptable.

In the event one or more snubbers are found inoperable during a visual examination, the Limiting Conditions for Operation (LCO) in the present TS require the licensee to restore or replace the inoperable snubber(s) to operable status within 72 hours or declare the attached system inoperable and follow the appropriate action statement for that system. This LCO will remain in the TS; however, the permissible number of inoperable snubber(s) and the subsequent visual examination interval will now be determined in accordance with the new visual examination schedule proposed in TS Table 4.7.3. The proposed schedule in Table 4.7.3 is consistent with that provided in the generic letter and is, therefore, acceptable.

As noted in the guidance for this line item TS improvement, certain corrective actions may have to be performed depending on the number of inoperable snubbers found. All requirements, for corrective actions, and evaluations associated with the use of the visual examination schedule, are stated in the footnotes 1 thru 6 of the proposed TS Table 4.7.3. These footnotes are consistent with those provided in the generic letter and are acceptable.

The licensee corrected typographical errors in TS 3.7.8.1 for Unit 1. The corrections included: adding a parenthesis which was missing, correcting the reference to TS 4.7.8.1.b, and correcting a spelling error. The Surveillance Requirement, TS 4.7.8.1, was modified to be consistent with the wording in the generic letter. This changed the use of "and" to "in addition to." We have determined these administrative changes improve the consistency of the TS and are acceptable.

The generic letter includes three changes to the applicable TS relating to visual inspection acceptance criteria. The TS addressing visual inspection acceptance criteria for Calvert Cliffs is TS 4.7.8.1.b which the licensee proposes not to change. The initial submittal did not adequately address the deviation from the guidance provided in the generic letter. The licensee's July 1, 1991, submittal provided additional clarification to support its proposal.

The changes proposed in the generic letter for the acceptance criteria included: first, the use of the classification of acceptable or unacceptable; second, the assessment of snubbers connected to common hydraulic fluid reservoirs; and third, the description of the required review and evaluation to be performed. The licensee's supplemental addressed each of the three proposed changes.

First, the licensee proposed not to use the classification of acceptable or unacceptable in lieu of the current classification of operable or inoperable. An immediate determination of operability precisely prescribes required actions to be taken and is a minor and conservative difference from the proposed classification. The licensee has replaced the classification of acceptable or unacceptable with operable or inoperable in all applicable portions of this amendment request which is consistent with the use of this classification in other Calvert Cliffs TS areas. Since this is a minor and conservative difference and precludes introducing a new classification, we have determined the intent of the generic letter is met and the proposal is acceptable.

Second, the reference in the generic letter regarding snubbers connected to common hydraulic fluid reservoirs is not applicable to Calvert Cliffs. The licensee has indicated that neither unit has any safety-related snubbers connected to a common hydraulic fluid reservoir. Therefore, this portion of the generic letter is not applicable and the proposal not to include this reference is acceptable.

Finally, the licensee indicates the guidance in the generic letter requires only that a review and evaluation shall be performed and documented to justify continued operation. It further proposes that the current description of the required evaluation, including the details, scope, and purpose, be maintained. The use of inoperable, as discussed above, results in the TS requiring an evaluation be performed on the supported component of an inoperable snubber within 72 hours per TS 3.7.8.1. Since this existing portion of the TS provides more specific information related to the review and evaluation to be performed, we find this acceptable.

However, to provide additional clarification and to be consistent with the current Standard Technical Specifications, the licensee agreed to add functionally tested and to delete the "and" in the "and/or" statement in the operability determination portion of TS 4.7.8.1.b which is acceptable.

The licensee concluded, and the staff agrees, that the differences are minor and do not impact the intent of the guidance provided in the generic letter and, as noted above, are acceptable.

3.0 SUMMARY

The staff has concluded that the proposed changes to TS 3.7.8.1 and 4.7.8.1, the addition of TS Table 4.7.3 including notations, and the supporting TS Bases 3/4.7.8 are acceptable for Calvert Cliffs Nuclear Power Plant. This determination is based on the details discussed above which indicates that the proposed changes are consistent with the guidance provided in Generic Letter 90-09 or sufficient justification has been provided where deviations are identified.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Maryland State official was notified of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20, and changes to the surveillance requirement. The NRC staff has determined that the amendments involve 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 the amendments involve no significant hazards consideration, and there has been no public comment on such finding (56 FR 29270). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 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 the amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, 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 the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors:

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Date: September 4, 1991