

July 3, 1986

D e r o l l e

Docket Nos. 50-317
and 50-318

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Mr. J. A. Tiernan
Vice President-Nuclear Energy
Baltimore Gas & Electric Company
P. O. Box 1475
Baltimore, MD 21203

Dear Mr. Tiernan:

On June 17, 1986, the Commission issued Amendments 118 and 100 [110] to Facility Operating License Nos. DPR-53 and DPR-69 for the Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2, in response to your application dated January 20, 1986 as supplemented by letter dated April 25, 1986.

An administrative error was made in that the Amendment for Unit 2 was shown as number 110 instead of 100. Please correct the number on the Amendment and other related correspondence. Enclosed is a set of corrected Unit 2 Technical Specification pages for your convenience.

Please accept our apologies for any inconvenience this error may have caused you.

Sincerely,

/S/

D. H. Jaffe, Project Manager
PWR Project Directorate #8
Division of PWR Licensing-B

Enclosures:

TS pages 3/4 7-5a, 3/4 7-25,
3/4 7-26, 3/4 9-15, B 3/4 7-2,
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Mr. J. A. Tiernan
Baltimore Gas & Electric Company

Calvert Cliffs Nuclear Power Plant

cc:

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

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
Office of Executive Director
for Operations
631 Park Avenue
King of Prussia, Pennsylvania 19406

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

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

Mr. M. E. Bowman, General Supervisor
Technical Services Engineering
Calvert Cliffs Nuclear Power Plant
MD Rts 2 & 4, P. O. Box 1535
Lusby, Maryland 20657-0073

Resident Inspector
c/o U.S. Nuclear Regulatory Commission
P. O. Box 437
Lusby, Maryland 20657-0073

Bechtel Power Corporation
ATTN: Mr. D. E. Stewart
Calvert Cliffs Project Engineer
15740 Shady Grove Road
Gaithersburg, Maryland 20760

Combustion Engineering, Inc.
ATTN: Mr. W. R. Horlacher, III
Project Manager
P. O. Box 500
1000 Prospect Hill Road
Windsor, Connecticut 06095-0500

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

PLANT SYSTEMS

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.2 Two auxiliary feedwater trains consisting of one steam driven and one motor driven pump and associated flow paths capable of automatically initiating flow shall be OPERABLE. (An OPERABLE steam driven train shall consist of one pump aligned for automatic flow initiation and one pump aligned in standby.)*

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

- a. With any single pump inoperable, perform the following:
 1. With No. 23 motor-driven pump inoperable:
 - (a) Align the standby steam-driven pump to automatic initiating status within 72 hours or be in HOT SHUTDOWN within the next 12 hours, and
 - (b) Restore No. 23 motor-driven pump to OPERABLE status within the next 7 days or be in HOT SHUTDOWN within the next 12 hours.
 2. With one steam-driven pump inoperable:
 - (a) Align the OPERABLE steam driven pump to automatic initiating status within 72 hours or be in HOT SHUTDOWN within the next 12 hours, and
 - (b) Restore the inoperable steam driven pump to standby status (or automatic initiating status if the other steam driven pump is to be placed in standby) within the next 7 days or be in HOT SHUTDOWN within the next 12 hours.
- b. With any two pumps inoperable:
 1. Verify that the remaining pump is aligned to automatic initiating status within one hour, and
 2. Verify within one hour that No. 13 motor driven pump is OPERABLE and valve 1-CV-4550 has been exercised within the last 30 days, and
 3. Restore a second pump to automatic initiating status within 72 hours or be in HOT SHUTDOWN within the next 12 hours.

*A standby pump shall be available for operation but aligned so that automatic flow initiation is defeated upon AFAS actuation.

PLANT SYSTEMS

AUXILIARY FEEDWATER SYSTEM

LIMITING CONDITION FOR OPERATION (Continued)

- c. Whenever a subsystem(s) (a subsystem consisting of one pump, piping, valves and controls in the direct flow path) required for operability is inoperable for the performance of periodic testing (e.g., manual discharge valve closed for pump Total Dynamic Head Test or Logic Testing) a dedicated operator(s) will be stationed at the local station(s) with direct communication to the Control Room. Upon completion of any testing, the subsystem(s) required for operability will be returned to its proper status and verified in its proper status by an independent operator check.
- d. The requirements of Specification 3.0.4 are not applicable whenever one motor and one steam-driven pump (or two steam-driven pumps) are aligned for automatic flow initiation.

SURVEILLANCE REQUIREMENTS

4.7.1.2 Each auxiliary feedwater flowpath shall be demonstrated OPERABLE:

- a. At least once per 31 days by:
 1. Verifying that each steam driven pump develops a Total Dynamic Head of \geq 2800 ft. on recirculation flow. (If verification must be demonstrated during startup, surveillance testing shall be performed upon achieving an RCS temperature \geq 300°F and prior to entering MODE 1).
 2. Verifying that the motor driven pump develops a Total Dynamic Head of \geq 3100 ft. on recirculation flow.
 3. Cycling each testable, remote operated valve that is not in its operating position through at least one complete cycle.
 4. Verifying that each valve (manual, power operated or automatic) in the direct flow path is in its correct position.
- b. Before entering MODE 3 after a COLD SHUTDOWN of at least 14 days by completing a flow test that verifies the flow path from the condensate storage tank to the steam generators.
- c. At least once per 18 months by:
 1. Verifying that each automatic valve in the flow path actuates to its correct position (verification of flow-modulating characteristics not required) and each auxiliary feedwater pump automatically starts upon receipt of each AFAS test signal, and
 2. Verifying that the auxiliary feedwater system is capable of providing a minimum of 300 gpm nominal flow to each flow leg.*

*This surveillance may be performed on one flow leg at a time.

PLANT SYSTEMS

3/4.7.8 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.8.1 All snubbers listed in Table 3.7-4 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.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.

* 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.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.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.

* The Steam Generator snubbers 2-63-11 through 2-63-26 need not be functionally tested until the refueling outage following June 30, 1985.

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

- d. At least once per 18 months by:
 - 1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 4 inches Water Gauge while operating the ventilation system at a flow rate of $32,000 \text{ cfm} \pm 10\%$.
 - 2. Verifying that each exhaust fan maintains the spent fuel storage pool area at a measurable negative pressure relative to the outside atmosphere during system operation.
- e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove $\geq 99\%$ of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of $32,000 \text{ cfm} \pm 10\%$.
- f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove $\geq 99\%$ of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of $32,000 \text{ cfm} \pm 10\%$.
- g. After maintenance affecting the air flow distribution by testing in-place and verifying that the air flow distribution is uniform within $\pm 20\%$ of the average flow per unit when tested in accordance with the provisions of Section 9 of "Industrial Ventilation" and Section 8 of ANSI N510-1975.

REFUELING OPERATIONS

SPENT FUEL CASK HANDLING CRANE

LIMITING CONDITION FOR OPERATION

3.9.13 Crane travel of the spent fuel shipping cask crane shall be restricted to prohibit a spent fuel shipping cask from travel over any area within one shipping cask length of any fuel assembly.

APPLICABILITY: With fuel assemblies in the storage pool.

ACTION:

With the requirements of the above specification not satisfied, place the crane load in a safe condition. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.13 Crane interlocks and physical stops which restrict a spent fuel shipping cask from passing over any area within one shipping cask length of any fuel assembly shall be demonstrated OPERABLE within 7 days prior to crane use and at least once per 7 days thereafter during crane operation.

3/4.7 PLANT SYSTEMS

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3/4.7.1 TURBINE CYCLE

3/4.7.1.1 SAFETY VALVES

The OPERABILITY of the main steam line code safety valves ensures that the secondary system pressure will be limited to within 110% of its design pressure of 1000 psig during the most severe anticipated system operational transient. The total relieving capacity for all valves on all of the steam lines is 12.18×10^6 lbs/hr at 100% RATED THERMAL POWER. The maximum relieving capacity is associated with a turbine trip from 100% RATED THERMAL POWER coincident with an assumed loss of condenser heat sink (i.e., no steam bypass to the condenser). The main steam line code safety valves are tested and maintained in accordance with the requirements of Section XI of the ASME Boiler and Pressure Code. The as-left lift settings will be no less than 985 psig to ensure that the lift setpoints will remain within specification during the cycle.

In MODE 3, two main steam safety valves are required OPERABLE per steam generator. These valves will provide adequate relieving capacity for removal of both decay heat and reactor coolant pump heat from the reactor coolant system via either of the two steam generators. This requirement is provided to facilitate the post-overhaul setting and operability testing of the safety valves which can only be conducted when the RCS is at or above 500°F. It allows entry into MODE 3 with a minimum number of main steam safety valves OPERABLE so that the set pressure for the remaining valves can be adjusted in the plant. This is the most accurate means for adjusting safety valve set pressures since the valves will be in thermal equilibrium with the operating environment.

STARTUP and/or POWER OPERATION is allowable with safety valves inoperable within the limitations of the ACTION requirements on the basis of the reduction in secondary system steam flow and THERMAL POWER required by the reduced reactor trip settings of the Power Level-High channels. The reactor trip setpoint reductions are derived on the following bases:

For two loop operation

$$SP = \frac{(X) - (Y)(V)}{X} \times 106.5$$

For single loop operation (two reactor coolant pumps
operating in the same loop)

$$SP = \frac{(X) - (Y)(U)}{X} \times 46.8$$

where:

SP = reduced reactor trip setpoint in percent of RATED THERMAL POWER

V = maximum number of inoperable safety valves per steam line

PLANT SYSTEMS

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- U = maximum number of inoperable safety valves per operating steam line
- 106.5 = Power Level - High Trip Setpoint for two loop operation
- 46.8 = Power Level - High Trip Setpoint for single loop operation with two reactor coolant pumps operating in the same loop
- X = Total relieving capacity of all safety valves per steam line in lbs/hour
- Y = Maximum relieving capacity of any one safety valve in lbs/hour

3/4.7.1.2 AUXILIARY FEEDWATER SYSTEM

The OPERABILITY of the auxiliary feedwater system ensures that the Reactor Coolant System can be cooled down to less than 300°F from normal operating conditions in the event of a total loss of offsite power. A delivered flow of 300 gpm is sufficient to ensure that adequate feedwater flow is available to remove decay heat and reduce the Reactor Coolant System temperature to less than 300°F when the shutdown cooling system may be placed into operation.

Flow control valves were installed in the system in order to allow automatic flow initiation to a value selected by the Operator. Maximum flow to the steam generators from the motor driven AFW pump powered from the diesel is 300 gpm when feeding both generators (i.e., 150 gpm per leg maximum flow). The flow control valves installed in each leg supplied from the motor driven AFW pump shall be set at a flow setpoint not to exceed 150 gpm per leg. If the flow is only being directed to one steam generator, it is acceptable to deliver a maximum of 330 gpm because the flow error associated with the non-used loop is eliminated. These motor driven AFW pump capacity limits are imposed to prevent exceeding the emergency diesel generator load limit. If diesel generator loading is not a limiting concern, the delivered flow from the motor driven AFW pump may be increased up to a maximum of 575 gpm (motor HP limit vice diesel loading limit). These upper flow limits do not apply to the steam driven pumps.

In the spectrum of events analyzed in which automatic initiation of auxiliary feedwater occurs, the following flow conditions are allowed with an operator action time of 10 minutes.

- | | |
|-----------------------|--------------------------------|
| (1) Loss of Feedwater | 0 gpm Auxiliary Feedwater Flow |
| (2) Feedline Break | 0 GPM Auxiliary Feedwater Flow |

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 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 of each type* found during an inspection. 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.

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 effect or degradation on the supported component or system.

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

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

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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.

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.