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U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Document Control Desk

SUBJECT: Calvert Cliffs Nuclear Power Plant
Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318
License Amendment Request; Extension of Auxiliary Feedwater Testing
Surveillances from 18 to 24 Months

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

Pursuant to 10 CFR 50.90, the Baltimore Gas and Electric Company hereby requests an Amendment to Operating Licenses Nos. DPR-53 and DPR-69 by the incorporation of the changes described below to the Technical Specifications for Calvert Cliffs Unit Nos. 1 and 2.

DESCRIPTION

The proposed amendment would revise the Calvert Cliffs Nuclear Power Plant (CCNPP) Units 1 and 2 Technical Specification 4.7.1.2.c to extend the interval for three Auxiliary Feedwater (AFW) surveillance requirements from 18 to 24 months. Calvert Cliffs has been operating on a 24-month fuel cycle since July 1987 (Unit 2), and July 1988 (Unit 1), performing some Technical Specification surveillances, such as those described here, during mid-cycle outages. This request is one of a series of proposed license amendments that would eliminate the need for mid-cycle surveillance outages by extending 18-month frequency surveillances to refueling interval (nominally 24 months).

The Technical Specification surveillances of concern verify that upon receipt of an Auxiliary Feedwater Actuation System (AFAS) test signal, AFW automatic valves actuate, the AFW pumps start, and the AFW System provides the flow rate assumed by the CCNPP safety analyses.

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BACKGROUND

The AFW System is a safety-related system designed to provide an alternate supply of feedwater to the steam generators for the removal of decay heat and cooldown of the Reactor Coolant System if the Main Feedwater System, a non-safety-related system, is unavailable. The AFW System can also be used for normal cooldown of the Reactor Coolant System and to fill the steam generators prior to normal operation.

The AFW System has two turbine-driven pumps and one motor-driven pump, drawing water from a condensate storage tank. The AFAS starts the motor-driven pump and opens the steam supply valves to the turbine-driven pumps when the level in either steam generator drops to a low level setpoint. Normal alignment of the turbine driven pumps has one pump start automatically and one remain in standby. Flow control valves regulate flow to the steam generators for removing decay heat. In the event of a high differential pressure between steam generators event, such as a steam generator tube rupture or main steam line break, AFW flow to the affected steam generator is isolated when an AFAS Block signal shuts the blocking valves in each AFW line to the affected steam generator.

The AFW surveillances with 18-month frequencies verify:

- ▶ each automatic valve in the flowpath actuates to its correct position upon receipt of each AFAS test signal (4.7.1.2.c.1);
- ▶ each AFW pump automatically starts upon receipt of each AFAS test signal (4.7.1.2.c.1); and
- ▶ the AFW System is capable of providing a minimum of 300 gallons per minute (gpm) nominal flow to each flow leg (4.7.1.2.c.2).

These surveillances ensure the AFW pumps, flow control valves, blocking valves and the electrical signal paths function properly. Monthly and 18-month surveillance tests both verify proper operation of the valves and that the appropriate AFW pumps start. The 18-month surveillance is different from the monthly surveillance in that the 18-month surveillance is performed with the pump discharge valve open to allow AFW flow into the steam generators and verifies the minimum AFW flow rate of 300 gpm in each leg using AFW flow indicating controllers.

Calvert Cliffs has been operating on a 24-month fuel cycle since July 1987 (Unit 2), and July 1988 (Unit 1), performing Technical Specification surveillances with 18-month frequencies during mid-cycle outages, as needed. This request is one of a series of proposed license amendments that would eliminate the need for mid-cycle outages by extending 18-month frequency surveillances to a refueling frequency.

REQUESTED CHANGE

Revise Technical Specification 4.7.1.2.c as shown on the marked-up pages attached to this transmittal, increasing the surveillance interval from 18 months to the refueling interval (nominally 24 months).

SAFETY ANALYSIS

The AFW System maintains water level in the steam generators and removes decay heat if the Main Feedwater System is unavailable. Reference (a) states that for cases where 18 month surveillances do not involve calibration of instruments that perform safety functions, licensees should evaluate the effect on safety of the change in surveillance intervals which supports a conclusion that the effect on safety is small. Licensees should confirm that historical maintenance and surveillance data do not invalidate this conclusion. The monthly AFW surveillances test the same functions as the 18-month tests, except for flow rate. An evaluation of the monthly and 18-month surveillances from January 1, 1989 to December 31, 1993 on the AFW components effected by this change found no test failures during performance of Surveillance 4.7.1.2.c. Examining overall reliability, there has been only one turbine-driven AFW pump trip in over seventy starts during this period, three of which were demand starts. There have been no recorded failures of the motor-driven pump to start during this period. No instruments are calibrated by these 18-month surveillances.

Prior to 1989, the AFW System met Technical Specification requirements, but we believed that plant safety could be enhanced by improving AFW System performance. As a result of modifications and administrative improvements begun in 1989, the CCNPP AFW System had an INPO criteria-based unavailability index in 1993 of less than 0.01.

Based on the AFW System reliability and the surveillance history provided, we conclude that the requested surveillance extension will not adversely affect our ability to detect degradation in the AFW System, and does not invalidate any assumption in the plant licensing basis.

DETERMINATION OF SIGNIFICANT HAZARDS

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

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

The Auxiliary Feedwater (AFW) System provides a safety-related source of feedwater to the steam generators to mitigate design basis accidents involving loss of Main Feedwater. Failure of the AFW System is not an initiator for any previously analyzed accident. Therefore, the proposed change does not involve an increase in the probability of an accident previously evaluated.

A historical review of surveillance test results and system performance indicates that the AFW System is very reliable. In addition, monthly surveillances of the AFW System will continue to verify proper pump and valve operation. The AFW System reliability and monthly surveillances provide assurance that undetected system degradation will not occur between 24-month surveillances. Therefore, the AFW System will continue to perform its safety function and there will be no significant increase in the consequences of accidents. Therefore, the proposed Technical Specification changes do not increase the probability or consequences of an accident previously evaluated.

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

This requested revision to increase the interval for some AFW surveillances from 18 to 24 months does not involve a significant change in the design or operation of the plant. No hardware is being added to the plant as part of the proposed change. The proposed change will not introduce any new accident initiators. Therefore, this change would not create the possibility of a new or different type of accident from any accident previously evaluated.

3. *Does operation of the facility in accordance with the proposed amendment involve a significant reduction in a margin of safety?*

The AFW System provides a margin of safety by providing a safety-related alternate supply of feedwater to the steam generator for removal of decay heat and cooldown of the Reactor Coolant System. The proposed changes do not affect the operation or design of the AFW System. Monthly surveillances and historical data provide assurance that the reduction in surveillance frequency will not adversely affect our ability to detect degradation in the system. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

SCHEDULE

This change is requested to be approved and issued by December 1, 1994. However, issuance of this amendment is not currently identified as having an impact on outage completion or continued plant operation.

ENVIRONMENTAL ASSESSMENT

The proposed amendment would change requirements with respect to the installation or use of a facility component located within the restricted area, as defined in 10 CFR Part 20, or changes to an inspection or surveillance requirement. We have determined that the proposed amendment involves no significant hazards consideration, and that operation with the proposed amendment would result in no significant change in the types or significant increases in the amounts of any effluents that may be released offsite, and in no significant increase in individual or cumulative occupational radiation exposure. Therefore, the proposed amendment is eligible for categorical exclusion as set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment is needed in connection with the approval of the proposed amendment.

SAFETY COMMITTEE REVIEW

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

ATTACHMENT (1)

UNIT 1
TECHNICAL SPECIFICATION
MARKED-UP PAGE

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