February 10, 2005

Mr. George Vanderheyden, Vice President
Calvert Cliffs Nuclear Power Plant, Inc.
Calvert Cliffs Nuclear Power Plant
1650 Calvert Cliffs Parkway
Lusby, MD 20657-4702

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2 - AMENDMENT RE: INCREASE OF LIFT SETPOINT OF FIRST BANK OF MAIN STEAM SAFETY VALVES AND INCREASE IN COMPLETION TIME TO RESET THE POWER LEVEL-HIGH TRIP SETPOINT (TAC NOS. MC1578 AND MC1579)

Dear Mr. Vanderheyden:

The Commission has issued the enclosed Amendment No. 270 to Renewed Facility Operating License No. DPR-53 and Amendment No. 247 to Renewed Facility Operating License No. DPR-69 for the Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2. These amendments consist of changes to the Technical Specifications (TSs) in response to your application dated December 9, 2003, as supplemented by letters dated May 19 and August 3, 2004.

The amendments revise TS 3.7.1, “Main Steam Safety Valves (MSSVs),” to increase the maximum allowable lift setting on the first bank of two MSSVs on each unit. In addition, the amendments increase the completion time for reducing the power level-high trip setpoint.

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,

/RA/

Richard V. Guzman, Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-317 and 50-318

Enclosures:
1. Amendment No. 270 to License No. DPR-53
2. Amendment No. 247 to License No. DPR-69
3. Safety Evaluation

cc w/encls: See next page

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DISTRIBUTION:

PDI-1 R/F	GMatakas, RGN-1	
ACRS	RGuzman	OGC
PUBLIC	SLittle	GHill (4)
JUhle	RLaufer	SSun

cc w/encls: See next page

* Provided SE input by memo. No substantive changes made.

Accession No.: ML050270301 Package No.: ML TSs: ML

OFFICE	PDI-1/PM	PDI-2/LA	SRXB/SC*	OGC	PDI-1/SC
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DATE	1/27/05	2/10/05	9/10/04	2/8/05	2/9/05

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Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2

cc:

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CALVERT CLIFFS NUCLEAR POWER PLANT, INC.

DOCKET NO. 50-317

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NO. 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 270
Renewed License No. DPR-53

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Calvert Cliffs Nuclear Power Plant, Inc. (the licensee) dated December 9, 2003, as supplemented by letters dated May 19 and August 3, 2004, 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 Renewed Facility Operating License No. DPR-53 is hereby amended to read as follows:

2. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 270, are hereby incorporated into 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

/RA/

Richard J. Laufer, Chief, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 10, 2005

CALVERT CLIFFS NUCLEAR POWER PLANT, INC.

DOCKET NO. 50-318

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NO. 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 247
Renewed License No. DPR-69

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Calvert Cliffs Nuclear Power Plant, Inc. (the licensee) dated December 9, 2003, as supplemented by letters dated May 19 and August 3, 2004, 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 Renewed 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. 247, are hereby incorporated into 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

/RA/

Richard J. Laufer, Chief, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 10, 2005

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 270 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-53

AMENDMENT NO. 247 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-69

DOCKET NOS. 50-317 AND 50-318

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove Pages	Insert Pages
3.7.1-1	3.7.1-1
3.7.1-4	3.7.1-4

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 270 TO RENEWED

FACILITY OPERATING LICENSE NO. DPR-53

AND AMENDMENT NO. 247 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-69

CALVERT CLIFFS NUCLEAR POWER PLANT, INC.

CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT NOS. 1 AND 2

DOCKET NOS. 50-317 AND 50-318

1.0 INTRODUCTION

By letter dated December 9, 2003 (Reference 1), as supplemented by letters dated May 19 and August 3, 2004 (References 4 and 5, respectively), the Calvert Cliffs Nuclear Power Plant, Inc. (CCNPPI or the licensee) submitted a request for changes to the Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2 (CCNPP 1 and 2), Technical Specifications (TSs).

The proposed changes would increase the maximum allowable lift setting on the first bank of two main steam safety valves (MSSVs) on each unit. In addition, the proposed changes would increase the completion time for reducing the power level-high trip setpoint.

The supplemental letters dated May 19 and August 3, 2004, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on October 26, 2004 (69 FR 62470).

2.0 REGULATORY EVALUATION

The Nuclear Regulatory Commission (NRC) finds that CCNPPI in its December 9, 2003, submittal identified the applicable regulatory requirements. The regulatory requirements and guidance which the NRC staff considered in its review of the application are as follows:

1. Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50 Appendix A, "General Design Criteria [GDC] for Nuclear Power Plants" provides a list of the minimum design requirements for nuclear power plants. Specifically, GDC-15, "Reactor Coolant System Design," requires that the design conditions of the reactor coolant pressure boundary are not exceeded during any condition of normal operation, including anticipated operational occurrences.

2. 10 CFR Section 50.36, specifies the Commission's regulatory requirements related to the content of TSs. Since CCNPP 1 and 2 have Standard TSs and use the nuclear

steam supply system designed by Combustion Engineering (now merged as part of Westinghouse) and Standard TSs are developed based on Section 50.36 requirements, the staff utilizes NUREG-1432 (Revision 2), "Standard Technical Specifications - Combustion Engineering," in its review of the proposed TS changes for CCNPP 1 and 2. The staff also evaluates the analyses used to support the TS changes in accordance with the GDC-15 requirements.

3.0 TECHNICAL EVALUATION

3.1 Licensee's Proposed Change

There are eight MSSVs in each steam generator (SG) at CCNPP 1 and 2. Current TS Surveillance Requirement 3.7.1 requires that two MSSVs with the lowest lift settings for both units must be set within the range of 935 psig (pounds per square inch gauge) to 995 psig. Current TS 3.7.1.A.2 requires a reduction in the power level-high trip setpoint within 12 hours if one or more required MSSVs are inoperable. The proposed TS would revise the upper-end of the range of the lift setpoint for two MSSVs from 995 psig to 1005 psig. It would also propose to increase the completion time from 12 hours to 36 hours for resetting the power level-high trip setpoint.

3.2 TS Table 3.7.1-2: MSSV Lift Settings and the Associated Design-Basis Analysis

The MSSVs provide overpressure protection for the reactor coolant system (RCS) and SGs. Together with the reactor protection system, the MSSVs ensure that the RCS and SG pressures meet the GDC-15 requirement in terms of the pressure code limit (110 percent of the design pressures). The compliance with the GDC requirements is demonstrated in the analysis of design-basis events (DBEs). In assessing the effects of the proposed TS changes on the DBE analysis, the licensee evaluated the current analysis of record (AOR) and identified the events that credited opening of the MSSVs for mitigating consequences related to an increase in the RCS and SG pressures. The events are:

1. loss of feedwater flow,
2. small-break loss-of-coolant accident,
3. control element assembly (CEA) withdrawal,
4. feedwater line break,
5. asymmetric steam generator event,
6. loss of load, and
7. loss of non-emergency AC power

The licensee indicated that the AOR for the above event 1 (Reference 2) and event 2 (Reference 3) assumed a lift setting of 1005 psig for the first two MSSVs. Therefore, the proposed increase of the MSSV lift setting from 995 psig to 1005 psig would not affect the AOR for events 1 and 2.

The licensee performed a reanalysis for events 3 through 6, and provided the results of the reanalysis for the staff to review. During the review, the NRC staff requested the licensee to discuss the computer codes used for the reanalysis and identify the values of code input parameters that are different from those used in the AOR. In response, the licensee indicated in Reference 4 that the reanalysis was performed with the CESEC-III computer code, which

was used for the current AOR. The values for the code input parameters were the same as those used in the AOR, with exception that the lift setting for the first two MSSVs was assumed to reflect the proposed TS value of 1005 psig. The results of reanalysis showed that for events 3 through 6, the peak RCS pressure and SG pressure remain below 110 percent of the design pressures, and the pressurizer water level does not reach the top of the pressurizer.

The licensee claimed that the RCS primary and secondary system response of event 7, the loss of non-emergency AC power (LOAC), is similar to that of event 6, the loss of load (LOL), with the reanalyzed peak RCS pressure of 2686 psia (pounds per square inch absolute); therefore, the licensee did not reanalyze event 7. The NRC staff noted that the peak RCS pressure in the AOR was 2493 psia for the analysis of event 7 which assumed the MSSVs opened at 1000 psia. The peak RCS pressure difference of 193 psi (2689 psia vs. 2493 psia) between the LOL and the LOAC analyses is significant. However, it is not clear whether the pressure difference of 193 psi is attributed to the system responses of the two events, or to the different values of MSSVs opening pressure assumed in the analyses. The staff requested the licensee to justify that the LOAC event needs not be reanalyzed with consideration of the effects of the new MSSVs opening pressure. In a letter dated August 3, 2004 (Reference 5), the licensee indicated that the peak pressure difference in the analyses of the two events mainly resulted from the difference in the time of the reactor trip. The quicker reactor trip time of 1.65 seconds in the LOAC analysis resulted in a peak RCS pressure that is significantly lower than that of the LOL analysis (reactor trip time of 6.5 seconds). The licensee also evaluated the LOAC event for an increase in the MSSV lift setpoints. The licensee considered the role the MSSVs play in mitigating the pressure response of the RCS primary and secondary systems during a LOAC event. The licensee's evaluation indicated that although the increase in the MSSV lift setpoint would result in a later opening of the MSSVs, the delay in MSSV opening is of a very short duration and there is sufficient margin that the RCS pressure and pressurizer level responses to a LOAC event remain bounded by the LOL event. Therefore, the licensee stated and the staff agreed that the LOAC event does not need to be reanalyzed.

The staff determined that the reanalysis is acceptable because the reanalysis used the same computer code and values for the code input parameters as those used in the AOR, with exception that the lift setting for the first two MSSVs was assumed to reflect the proposed TS value of 1005 psig, and the results showed that the pressure limits of 110 percent of the design pressures were met, satisfying the GDC-15 requirements for the reactor coolant pressure boundary integrity. Therefore, the lift setting of 1005 psig, as specified in the proposed TS Table 3.7.1-2 for the first two MSSVs, is acceptable.

3.3 TS 3.7.1.A.2: Completion Time to Reset the Power Level-High Trip Setpoints

The current TS 3.7.1.A.2 requires that with one or more MSSVs per SG inoperable, the power level-high trip setpoint must be reduced within 12 hours to the values specified in TS Table 3.7.1-1. The proposed TS 3.7.1.A.2 would increase the completion time from 12 hours to 36 hours for resetting the power level-high trip setpoint. The licensee indicated in Reference 1 that the proposed completion time of 36 hours is based on Technical Specification Task Force (TSTF) 235. (A TSTF Traveler makes a generic change to the Standard TSs). TSTF-235 was approved by the NRC on January 15, 1999. The staff found that the proposed completion time is consistent with that specified in TS 3.7.1 of Standard TS for Combustion Engineering plants, which incorporated the TSTF-235 resolution. As discussed in TS Bases 3.7.1 of NUREG-1432, Revision 2, "Standard Technical Specifications - Combustion Engineering," the completion time

of 36 hours is based on a reasonable time to correct the MSSV inoperability, the time required to perform the power reduction, operating experience in resetting all channels of a protective function, and on the low probability of the occurrence of a transient that could result in SG overpressure during this period. Therefore, the staff concludes that the proposed TS 3.7.1.A.2 is acceptable.

3.4 TS Table 3.7.1-1: Power Level-High Trip Setpoint

MSSVs are designed to provide overpressure protection during DBEs. Should a plant experience a pressurization event such as an LOL, or a reactivity increase event such as a CEA withdrawal event at power, the event would be terminated by a reactor trip. The reactor would trip on either high pressurizer pressure, high power level, or SG low water level. RCS secondary side overpressure protection is provided by the actuation of the MSSVs. In order to limit the consequences of the events that challenge the relieving capacity of the MSSVs, the current TS specifies the power level-high trip setpoints for operation with one or more MSSVs inoperable.

As indicated in TS Table 3.7.1-1, the power level-high trip setpoints are specified to limit the maximum allowable power levels of 93, 79, and 66 percent of the rated thermal power (RTP), when the required minimum numbers of inoperable MSSVs are limited to 1, 2, and 3 per SG, respectively. During the review, the staff requested that the licensee provide a discussion of the analysis to show that with the proposed MSSV lift setting, the DBEs with the conditions of the maximum power levels and the corresponding inoperable MSSVs specified in TS Table 3.7.1-1 would not exceed the applicable acceptable limits. In response, the licensee indicated that the limiting LOL event, resulting in the highest RCS pressure, was analyzed for the cases with the intermediate power levels. The licensee analyzed the intermediate power levels at 93, 79, and 66 percent of the RTP for the cases with 1, 2, and 3 inoperable MSSVs per SG, respectively. The analysis did not credit the power level-high trip signal for reactor trip. In the analysis, the licensee assumed that the reactor was tripped when the pressurizer pressure reached the high pressurizer pressure trip setpoint.

The results of the analysis shown in Table 2 of Reference 5 confirmed that for the intermediate power level cases, the peak RCS primary and secondary pressures, and the pressurizer level were within the acceptable limits discussed in the Updated Final Safety Analysis Report and the Standard Review Plan. The licensee specified the power level-high trip setpoints at 93, 79, and 66 percent of the RTP in TS Table 3.7.1-1 to ensure that the thermal power limit supported by the acceptable transient analysis is met. Therefore, the staff concludes that the power level-high trip setpoints remain valid and are acceptable.

3.5 Conclusion

Based on the considerations discussed in Section 2.0 and 3.0 above, the staff has concluded that the proposed TS 3.7.1 for CCNPP 1 and 2 is acceptable because (1) the proposed TS adequately reflects the results of the acceptable analysis that meets the GDC-15 requirements regarding the RCS pressure boundary integrity, and (2) the TS changes are consistent with the guidance of the Standard TS for Combustion Engineering plants with respect to the completion time to reset the power level-high trip setpoint.

4.0 STATE CONSULTATION

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

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes 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 surveillance requirements. The NRC staff has determined that the 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 the amendment involves no significant hazards consideration, and there has been no public comment on such finding (69 FR 62470). Accordingly, the amendment meets 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

7.0 REFERENCES

1. Letter from G. Vanderheyden (CEG) to NRC, “Calvert Cliffs Nuclear Power Plant Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318 License Amendment Request: Increase of the Lift Setpoint of the First Bank of Main Steam Safety Valves (MSSVs) and Increase in the Completion Time to Reset the Power Level-High Trip Setpoint,” dated December 9, 2003 (ADAMS Accession No. ML033460159).

2. Letter from D. Skay (NRC) to C. Cruse (CCNPP), “Calvert Cliffs Nuclear Power Plant, Unit Nos. 1 and 2 - Amendment Re: Reanalysis of Loss of Feedwater Event (TAC Nos. MB3442 and MB3443),” dated February 26, 2002 (ADAMS Accession No. ML020330002).

3. Letter from C. Cruse (CCNPP) to Document Control Desk (NRC), “10 CFR 50.46 30-Day Report for Changes to the Calvert Cliffs Nuclear Power Plant Emergency Core Cooling System Performance Analysis,” dated May 9, 2002 (ADAMS Accession No. ML021340157).

4. Letter from G. Vanderheyden (CEG) to NRC, “Calvert Cliffs Nuclear Power Plant Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318 Request for Additional Information: Proposed Amendment to Increase the Setpoint of the Main Steam Safety Valves (TAC Nos. MC1578 and MC1579),” dated May 19, 2004 (ADAMS Accession No. ML041450502).

5. Letter from G. Vanderheyden (CEG) to NRC, “Calvert Cliffs Nuclear Power Plant Unit Nos. 1 & 2; Docket Nos. 50-317 & 50-318 Request for Additional Information: Proposed

Amendment to Increase the Setpoint of the Main Steam Safety Valves (TAC Nos. MC1578 and MC1579)," dated August 3, 2004 (ADAMS Accession No. ML042190343).

Principal Contributor: S. Sun

Date: February 10, 2005