July 29, 2008

Mr. James A. Spina, 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: CONTROL ROOM HABITABILITY (TAC NOS. MD5928 AND MD5929)

Dear Mr. Spina:

The Commission has issued the enclosed Amendment No. 287 to Renewed Facility Operating License No. DPR-53 and Amendment No. 264 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 transmitted by letter dated June 29, 2007, as supplemented by letters dated March 12 and June 11, 2008.

These amendments modify TS 3.7.8, "Control Room Emergency Ventilation System (CREVS)," and introduce TS 5.5.17, "Control Room Envelope Habitability Program," consistent with Technical Specification Task Force (TSTF)-448, Revision 3, "Control Room Habitability."

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/

Douglas V. Pickett, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-317 and 50-318

Enclosures:
1. Amendment No. 287 to DPR-53
2. Amendment No. 264 to DPR-69
3. Safety Evaluation

cc w/encls: See next page

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cc w/encls: See next page

Package No.: ML082030180
Amendment No.: ML082030173
Tech Spec No.: ML

OFFICE	LPLI-1/PM	LPLI-1/LA	SCVB/BC	ITSB/BC	LPLI-1/BC
NAME	DPickett	SLittle via phone	RDennig memo dated	RElliott	MKowal
DATE	07/22/ 08	07/ 22 / 08	06/ 25 /08	07/23/ 08	07/29/08

OFFICIAL RECORD COPY

DATED: July 29, 2008

AMENDMENT NO. 287 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-53
CALVERT CLIFFS UNIT 1

AMENDMENT NO. 264 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-69
CALVERT CLIFFS UNIT 2

PUBLIC	
LPLI-1 R/F	
M. Kowal	RidsNrrDorlLpi-1
S. Little	RidsNrrLASLittle
D. Pickett	RidsNrrPMDPickett
G. Hill (2)	
OGC	RidsOgcMailCenter
ACRS	RidsAcrsAcnwMailCenter
G. Dentel, RI	RidsNrrDssScvb
B. Heida	
RidsNrrDirsItsb	

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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. 287
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 June 29, 2007, as supplemented by letters dated March 12 and June 11, 2008, 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. 287, 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 60 days following completion of the installation and testing of the plant modifications described in Amendment No. 281 issued on August 29, 2007.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Mark G. Kowal, Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the License and Technical Specifications

Date of Issuance: July 29, 2008

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. 264
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 June 29, 2007, as supplemented by letters dated March 12 and June 11, 2008, 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. 264, 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 60 days following completion of the installation and testing of the plant modifications described in Amendment No. 258 issued on August 29, 2007.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Mark G. Kowal, Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the License and Technical Specifications

Date of Issuance: July 29, 2008

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 287 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-53

AMENDMENT NO. 264 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-69

DOCKET NOS. 50-317 AND 50-318

Replace the following page of the Facility Operating License with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove Page	Insert Page
3	3

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
3.7.8-1	3.7.8-1
3.7.8-2	3.7.8-2
3.7.8-3	3.7.8-3
3.7.8-4	3.7.8-4
- - - --	3.7.8-5
5.5-18	5.5-18
- - - -	5.5-19

Replace the following pages of the Appendix C Additional Conditions 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
4	4
- - - -	5

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 287 TO RENEWED

FACILITY OPERATING LICENSE NO. DPR-53

AND AMENDMENT NO. 264 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 application dated June 29, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML071840335), as supplemented by letters dated March 12 (ADAMS Accession No. ML080740227) and June 11, 2008 (ADAMS Accession No. ML081650347), Calvert Cliffs Nuclear Power Plant, Inc. (the licensee) requested changes to the Technical Specifications (TSs) for the Calvert Cliffs Nuclear Power Plant (CCNPP) Unit Nos. 1 and 2.

The supplemental letters dated March 12 and June 11, 2008, 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 August 8, 2006 (ADAMS Accession No. ML062210095), the commercial nuclear electrical power generation industry owners group Technical Specifications Task Force (TSTF) submitted a proposed change, TSTF-448, Revision 3, "Control Room Habitability," to the improved standard technical specifications (STS) (NUREGs 1430-1434) on behalf of the industry (TSTF-448, Revisions 0, 1, and 2 were prior draft iterations). TSTF-448, Revision 3, is a proposal to establish more effective and appropriate action, surveillance, and administrative TS requirements related to ensuring the habitability of the control room envelope (CRE).

In Nuclear Regulatory Commission (NRC) Generic Letter (GL) 2003-01 (Reference 1), licensees were alerted to findings at facilities that existing TS Surveillance Requirements (SRs) for the Control Room Envelope Emergency Ventilation System (CREEVS) may not be adequate. Specifically, the results of ASTM E741 (Reference 2) tracer gas tests to measure CRE unfiltered inleakage at facilities indicated that the differential pressure surveillance is not a reliable method for demonstrating CRE boundary operability. Licensees were requested to address existing TSs as follows:

> *Provide confirmation that your technical specifications verify the integrity [i.e., operability] of the CRE [boundary], and the assumed [unfiltered] inleakage rates of potentially contaminated air. If you currently have a differential pressure surveillance requirement to*

demonstrate CRE [boundary] integrity, provide the basis for your conclusion that it remains adequate to demonstrate CRE integrity in light of the ASTM E741 testing results. If you conclude that your differential pressure surveillance requirement is no longer adequate, provide a schedule for: 1) revising the surveillance requirement in your technical specification to reference an acceptable surveillance methodology (e.g., ASTM E741), and 2) making any necessary modifications to your CRE [boundary] so that compliance with your new surveillance requirement can be demonstrated.

If your facility does not currently have a technical specification surveillance requirement for your CRE integrity, explain how and at what frequency you confirm your CRE integrity and why this is adequate to demonstrate CRE integrity.

To promote standardization and to minimize the resources that would be needed to create and process plant-specific amendment applications in response to the concerns described in the GL, the industry and the NRC proposed revisions to CRE habitability system requirements contained in the STS, using the STS change traveler process. This effort culminated in Revision 3 to TSTF-448 which the NRC staff approved on January 17, 2007.

Consistent with the traveler as incorporated into NUREG-1432, “Standard Technical Specifications Combustion Engineering Plants,” the licensee proposed revising action and SRs in TS 3.7.8, "Control Room Emergency Ventilation System (CREVS)," and adding a new administrative controls program, TS 5.5.17, "Control Room Envelope Habitability Program." The purpose of the changes is to ensure that CRE boundary operability is maintained and verified through effective surveillance and programmatic requirements, and that appropriate remedial actions are taken in the event of an inoperable CRE boundary.

Some editorial and plant-specific changes were incorporated into this safety evaluation (SE) resulting in minor deviations from the model SE text in TSTF-448, Revision 3.

2.0 REGULATORY EVALUATION

2.1 Control Room and Control Room Envelope

NRC Regulatory Guide (RG) 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," Revision 0, May 2003, (Reference 4) uses the term "control room envelope" in addition to the term "control room" and defines each term as follows:

Control Room: The plant area, defined in the facility licensing basis, in which actions can be taken to operate the plant safely under normal conditions and to maintain the reactor in a safe condition during accident situations. It encompasses the instrumentation and controls necessary for a safe shutdown of the plant and typically includes the critical document reference file, computer room (if used as an integral part of the emergency response plan), shift supervisor's office, operator wash room and kitchen, and other critical areas to which frequent personnel access or continuous occupancy may be necessary in the event of an accident.

> Control Room Envelope*: The plant area, defined in the facility licensing basis, which in the event of an emergency, can be isolated from the plant areas and the environment external to the CRE. This area is served by an emergency ventilation system, with the intent of maintaining the habitability of the control room. This area encompasses the control room, and may encompass other non-critical areas to which frequent personnel access or continuous occupancy is not necessary in the event of an accident.*

NRC RG 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003 (Reference 5), also contains these definitions, but uses the term CRE to mean both. This is because the protected environment provided for operators varies with the nuclear power facility. At some facilities this environment is limited to the control room; at others, it is the CRE. In this SE, consistent with the proposed changes to the STS, the CRE will be used to designate both. For consistency, facilities should use the term CRE with an appropriate facility-specific definition derived from the above CRE definition.

2.2 Control Room Emergency Ventilation System (CREVS)

The CREVS (the term used at CCNPP for the Control Room Envelope Emergency Ventilation System, CREEVS) provides a protected environment from which operators can control the unit, during airborne challenges from radioactivity, hazardous chemicals, and fire byproducts, such as fire suppression agents and smoke, during both normal and accident conditions.

The CREVS is designed to maintain a habitable environment in the control room envelope for 30 days of continuous occupancy after a design-basis accident (DBA) without exceeding a 5 rem whole body dose or its equivalent to any part of the body.

The CREVS consists of two redundant subsystems, each capable of maintaining the habitability of the CRE. The CREVS is considered operable when the individual components necessary to limit operator exposure are operable in both subsystems. A CREVS subsystem is considered operable when the associated:

- Supply fan is operable;
- Recirculation fan is operable;
- Emergency recirculation filter train fan is operable.
- High efficiency particulate air (HEPA) filters and charcoal adsorbers are not excessively restricting flow, and are capable of performing their filtration functions;
- Ductwork, valves, and dampers are operable, and air circulation can be maintained; and
- CRE boundary is operable (the single boundary supports both subsystems).

The CRE boundary is considered operable when the measured unfiltered air inleakage is less than or equal to the inleakage value assumed by the licensing basis analyses of DBA consequences to CRE occupants.

2.3 Regulations Applicable to Control Room Habitability

In Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," General Design Criteria (GDC) 1, 2, 3, 4, 5, and 19 apply to CRE habitability. A summary of these GDCs follows. CCNPP has one Control Room for both Units, which is designed to be maintained at neutral pressure. The CCNPP Control Room was designed and constructed to meet the intent of the draft GDC issued on July 10, 1967, by the Atomic Energy Commission. The CCNPP construction permit was granted on July 7, 1969, based on the Preliminary Safety Analysis Report, which contained an assessment of CCNPP's compliance with the draft GDC. By the time the final GDCs were issued, CCNPP already had their construction permit; therefore, the final GDCs were not used to establish the principal design criteria for Calvert Cliffs.

GDC 1, "Quality Standards and Records," requires that structures, systems, and components (SSCs) important to safety be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety functions performed. Draft GDC requires similar quality standards.

GDC 2, “Design Basis for Protection Against Natural Phenomena,” requires that SSCs important to safety be designed to withstand the effects of earthquakes and other natural hazards. Draft GDC requires similar protection against natural phenomena.

GDC 3, "Fire Protection," requires SSCs important to safety be designed and located to minimize the effects of fires and explosions. Draft GDC also requires protection to minimize the effects of fire.

GDC 4, "Environmental and Dynamic Effects Design Bases," requires SSCs important to safety to be designed to accommodate the effects of, and to be compatible with, the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including loss-of-coolant accidents (LOCAs). See Draft GDC 2.

GDC 5, "Sharing of Structures, Systems, and Components," requires that SSCs important to safety not be shared among nuclear power units unless it can be shown that such sharing will not significantly impair their ability to perform their safety functions, including, in the event of an accident in one unit, the orderly shutdown and cooldown of the remaining units. Draft GDC 4 addresses the sharing of systems.

GDC 19, "Control Room," requires that a control room be provided from which actions can be taken to operate the nuclear reactor safely under normal conditions and to maintain the reactor in a safe condition under accident conditions, including a LOCA. Adequate radiation protection is to be provided to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of specified values. CCNPP was designed to Draft GDC 11. CCNPP Control Room habitability licensing and design bases have

been modified to meet additional regulatory requirements (NUREG-0737, Task Action Plan Item III.D.3.4, following the 1979 accident at Three Mile Island Nuclear Power Plant). The licensing and design bases have also been modified as a result of commitments made to support license amendments and modifications made under other appropriate regulatory criteria.

Prior to incorporation of TSTF-448, Revision 3, the STS requirements addressing CRE boundary operability resided only in the following CRE ventilation system specifications:

- NUREG-1430, TS 3.7.10, "Control Room Emergency Ventilation System (CREVS);"
- NUREG-1431, TS 3.7.10, "Control Room Emergency Filtration System (CREFS);"
- NUREG-1432, TS 3.7.11, "Control Room Emergency Air Cleanup System (CREACS);"
- NUREG-1433, TS 3.7.4, "Main Control Room Environmental Control (MCREC)] System;" and
- NUREG-1434, TS 3.7.3, "Control Room Fresh Air (CRFA) System."

In these specifications, the SR associated with demonstrating the operability of the CRE boundary requires verifying that one CREVS subsystem can maintain a positive pressure relative to the areas adjacent to the CRE during the pressurization mode of operation at a makeup flow rate. Facilities that pressurize the CRE during the emergency mode of operation of the CREVS have similar SRs. Other facilities that do not pressurize the CRE have only a system flow rate criterion for the emergency mode of operation. Regardless, the results of ASTM E741 (Reference 2) tracer gas tests to measure CRE unfiltered inleakage at facilities indicated that the differential pressure surveillance (or the alternative surveillance at non-pressurization facilities) is not a reliable method for demonstrating CRE boundary operability. That is, licensees were able to obtain differential pressure and flow measurements that satisfied the SR limits even though unfiltered inleakage was determined to exceed the value assumed in the safety analyses.

In addition to an inadequate SR, the action requirements of these specifications were ambiguous regarding CRE boundary operability in the event CRE unfiltered inleakage is found to exceed the analysis assumption. The ambiguity stemmed from the view that the CRE boundary may be considered operable but degraded in this condition, and that it would be deemed inoperable only if calculated radiological exposure limits for CRE occupants exceeded a licensing basis limit; e.g., as stated in GDC-19, even while crediting compensatory measures.

NRC Administrative Letter (AL) 98-10, "Dispositioning of Technical Specifications that are Insufficient to Assure Plant Safety," states that "the discovery of an improper or inadequate TS value or required action is considered a degraded or nonconforming condition," which is defined in NRC Inspection Manual Chapter 9900; see latest guidance in RIS 2005-20 (Reference 3). AL 98-10 further states, “Imposing administrative controls in response to an improper or inadequate TS is considered an acceptable short-term corrective action. The staff expects that, following the imposition of administrative controls, an amendment to the inadequate TS, with appropriate justification and schedule, will be submitted in a timely fashion."

Licensees that have found unfiltered inleakage in excess of the limit assumed in the safety analyses and have yet to either reduce the inleakage below the limit or establish a higher bounding limit through re-analysis, have implemented compensatory actions to ensure the safety

of CRE occupants, pending final resolution of the condition, consistent with RIS 2005-20. However, based on GL 2003-01 and AL 98-10, the NRC staff expects each licensee to propose TS changes that include a surveillance to periodically measure CRE unfiltered inleakage in order to satisfy 10 CFR 50.36(d)(3), which requires a facility's TSs to include SRs, which it defines as "requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and *that limiting conditions for operation will be met*." (Emphasis added.)

The NRC staff also expects facilities to propose unambiguous remedial actions, consistent with 10 CFR 50.36(d)(2), for the condition of not meeting the limiting condition for operation (LCO) due to an inoperable CRE boundary. The action requirements should specify a reasonable completion time to restore conformance to the LCO before requiring a facility to be shut down. This completion time should be based on the benefits of implementing mitigating actions to ensure CRE occupant safety and sufficient time to resolve most problems anticipated with the CRE boundary, while minimizing the chance that operators in the CRE will need to use mitigating actions during accident conditions.

2.4 Adoption of TSTF-448, Revision 3

Adoption of TSTF-448, Revision 3, will assure that the facility's TS LCO for the CREVS is met by demonstrating unfiltered leakage into the CRE is within limits; i.e., the operability of the CRE boundary. In support of this surveillance, which specifies a test interval (frequency) described in RG 1.197, TSTF-448 also adds TS administrative controls to assure the habitability of the CRE between performances of the ASTM E741 test. In addition, adoption of TSTF-448 will establish clearly stated and reasonable required actions in the event CRE unfiltered inleakage is found to exceed the analysis assumption.

The changes made by TSTF-448 to the STS requirements for the CREVS and the CRE boundary conform to 10 CFR 50.36(d)(2) and 10 CFR 50.36(d)(3). Their adoption will better assure that CCNPP's CRE will remain habitable during normal operation and DBA conditions. These changes are, therefore, acceptable from a regulatory standpoint.

3.0 TECHNICAL EVALUATION

The NRC staff reviewed the proposed changes against the corresponding changes made to the STS by TSTF-448, Revision 3, which the NRC staff has found to satisfy applicable regulatory requirements, as described above in Section 2.0. The emergency operational mode of the CREVS at CCNPP isolates but does not pressurize the CRE to minimize unfiltered air inleakage. The proposed changes are consistent with this design.

3.1 Proposed Changes

The proposed amendment would strengthen CRE habitability TS requirements by changing TS 3.7.8, “Control Room Emergency Ventilation System (CREVS),” and adding new TS 5.5.17, “Control Room Envelope Habitability Program,” that provides administrative controls for CRE habitability. Accompanying the proposed TS changes are appropriate conforming technical changes to the TS Bases. The proposed revision to the Bases also includes editorial and

administrative changes to reflect applicable changes to the corresponding STS Bases, which were made to improve clarity, conform to the latest information and references, and achieve more consistency among the STS NUREGs. Except for plant specific differences, all of these changes are consistent with STS as revised by TSTF-448, Revision 3.

The NRC staff compared the proposed TS changes to the STS and the STS markups and evaluations in TSTF-448. The staff verified that differences from the STS were adequately justified on the basis of plant-specific design or retention of current licensing basis. The staff also reviewed the proposed changes to the TS Bases for consistency with the STS Bases and the plant-specific design and licensing bases, although approval of the Bases is not a condition for accepting the proposed amendment. TS 5.5.14, "Technical Specifications Bases Control Program," provides assurance that the licensee has established and will maintain the adequacy of the Bases. The proposed Bases for TS 3.7.8 refer to RG 1.196, “Control Room Habitability at Light-Water Nuclear Power Reactors,” dated May 2003 (Reference 4).

3.2 Editorial Changes

The licensee proposed editorial changes to TS 3.7.8 to establish standard terminology, such as "control room envelope (CRE)" in place of "control room," except for the plant-specific name for the CREEVS (CREV). This change improves the usability and quality of the presentation of the TS, has no impact on safety, and therefore, is acceptable.

The licensee proposed removal of a footnote currently contained in the Completion Time of TS 3.7.8, Required Action D. The footnote was added in Amendment Nos. 250 and 227 for Unit Nos. 1 and 2, respectively, and applied only to a period of time during the Unit 1 2002 refueling outage. The conditions of the footnote are no longer applicable since the Unit 1 2002 refueling outage has been completed. Therefore, the NRC staff finds it acceptable to remove the footnote.

Finally, the licensee proposed an editorial revision to SR 3.7.8.2 to include the article “the.” Former SR 3.7.8.2 read “Perform required CREVS filter testing in accordance with Ventilation Filter Testing Program (VFTP).” Revised SR 3.7.8.2 will read “Perform required CREVS filter testing in accordance with *the* Ventilation Filter Testing Program (VFTP)” (emphasis added). This editorial change provides clarity and is acceptable to the NRC staff.

3.3 TS 3.7.8, CREVS

The licensee proposed to establish new action requirements in TS 3.7.8 for an inoperable CRE boundary. Currently, if one CREVS train is determined to be inoperable due to an inoperable CRE boundary, existing Action D would apply and require restoring the train (and the CRE boundary) to operable status within 7 days. If two trains are determined to be inoperable due to an inoperable CRE boundary, existing Action G specifies no time to restore the trains (and the CRE boundary) to operable status, but requires immediate entry into the shutdown actions of LCO 3.0.3. These existing Actions are more restrictive than would be appropriate in situations for which CRE occupant implementation of compensatory measures or mitigating actions would temporarily afford adequate CRE occupant protection from postulated airborne hazards. To account for such situations, the licensee proposed to revise the action requirements to add a

new Condition D for "One or more CREVS trains inoperable due to inoperable CRE boundary in MODE 1, 2, 3, or 4." New Action D would allow 90 days to restore the CRE boundary (and consequently, the affected CREVS trains) to operable status, provided that mitigating actions are immediately implemented and within 24 hours are verified to ensure, that in the event of a DBA, CRE occupant radiological exposures will not exceed the calculated dose of the licensing basis analyses of DBA consequences, and that CRE occupants are protected from hazardous chemicals and smoke.

The 24-hour Completion Time of new Required Action D.2 is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions. The 90-day Completion Time of new Required Action D.3 is reasonable based on the determination that the mitigating actions will ensure protection of CRE occupants within analyzed limits while limiting the probability that CRE occupants will have to implement protective measures that may adversely affect their ability to control the reactor and maintain it in a safe shutdown condition in the event of a DBA. In addition, the 90-day Completion Time is a reasonable time to diagnose, plan and possibly repair and test most anticipated problems within the CRE boundary. Therefore, proposed Actions D.1, D.2, and D.3 are acceptable.

To distinguish new Condition D from the existing condition for one CREVS train inoperable, existing Condition D is renumbered as Condition E and is revised to state, "One CREVS train inoperable for reasons other than Condition A, B, C, or D." To distinguish new Condition D from the existing condition for two CREVS trains inoperable, Condition G (renumbered as Condition H) is revised to state, "Two CREVS trains inoperable for reasons other than Condition A, B, C, or D during MODE 1, 2, 3, or 4 or during movement of irradiate fuel assemblies." The changes to existing Conditions D and G are less restrictive because these Conditions will no longer apply in the event one or two CREVS trains are inoperable due to an inoperable CRE boundary during unit operation in Mode 1, 2, 3, or 4. This is acceptable because the new Action E establishes adequate remedial measures in this condition. With the addition of a new Condition E, existing Conditions D, E, F, and G are re-designated E, F, G, and H, respectively.

The licensee also proposed to modify the CREVS LCO by adding a NOTE allowing the CRE boundary to be opened intermittently under administrative controls. As stated in the LCO Bases, this NOTE "only applies to openings in the CRE boundary that can be rapidly restored to the design condition, such as doors, hatches, floor plugs, and access panels. For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls should be proceduralized and consist of stationing a dedicated individual at the opening who is in continuous communication with operators in the CRE. This individual will have a method to rapidly close the opening and to restore the CRE boundary to a condition equivalent to the design condition when a need for CRE isolation is indicated." The allowance of this NOTE is acceptable because the administrative controls will ensure that the opening will be quickly sealed to maintain the validity of the licensing basis analyses of DBA consequences.

The licensee proposed to add a new condition to Action G (renumbered from F) of TS 3.7.8 that states, "One or more CREVS trains inoperable due to an inoperable CRE boundary during movement of irradiated fuel assemblies." The specified Required Action proposed for this condition is the same as for the existing condition of Action H.2 (renumbered from G) (revised as

discussed previously), which states “Two CREVS trains inoperable trains for reasons other than Condition A, B, C, or D in Mode 1, 2, 3, 4 or during movement of irradiated fuel assemblies.” Accordingly, the new condition is stated with the other condition in Action G using the logical connector "OR". The practical result of this presentation in format is the same as specifying two separately numbered Actions, one for each condition. Its advantage is to make the TS Actions table easier to use by avoiding having an additional numbered row in the Actions table. The new condition in Action G is needed because proposed Action D will only apply in Modes 1, 2, 3, and 4. As such, this change will ensure that the Actions table continues to specify a condition for an inoperable CRE boundary during movement of irradiated fuel assemblies. Therefore, this change is administrative and acceptable.

In the emergency mode of operation, the CREVS isolates unfiltered ventilation air supply intakes, unfiltered exhaust-to-atmosphere valves are closed, aligns the system for emergency recirculation of CRE air through the HEPA and charcoal filters. In its response to GL 2003-01, dated December 5, 2003, the licensee reported that it had determined that Calvert Cliffs did not have a Technical Specification surveillance requirement for CRE integrity. The licensee has proposed a new surveillance, SR 3.7.8.4, to “Perform required CRE unfiltered air leakage testing in accordance with the Control Room Envelope Habitability Program.” The CRE Habitability Program is described in TS Section 5.5, in accordance with the approved version of TSTF-448. Based on the adoption of TSTF-448, Revision 3, the licensee's proposal to add a new SR 3.7.8.4 is acceptable.

The proposed CRE inleakage measurement SR states, "Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program." The CRE Habitability Program TS, proposed TS 5.5.17, requires that the program include "Requirements for determining the unfiltered air inleakage past the CRE boundary into the CRE in accordance with the testing methods and at the frequencies specified in Sections C.1 and C.2 of RG 1.197, Revision 0 (Reference 5). This guidance references ASTM E741 (Reference 2) as an acceptable method for ascertaining the unfiltered leakage into the CRE. The licensee has proposed to follow this method. Therefore, the proposed CRE inleakage measurement SR is acceptable.

3.4 TS 5.5.17, Control Room Envelope Habitability Program

The proposed program is consistent with the model program in TSTF-448, Revision 3. In combination with SR 3.7.8.4, this program is intended to ensure the operability of the CRE boundary, which as part of an operable CREVS will ensure that CRE habitability is maintained such that CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under DBA conditions without personnel receiving radiation exposures in excess of regulatory limits for the duration of the accident.

A CRE Habitability Program TS acceptable to the NRC staff requires the program to contain the following elements:

Definitions of CRE and CRE boundary: This element is intended to ensure that these definitions accurately describe the plant areas that are within the CRE, and also the interfaces that form the CRE boundary, and are consistent with the general definitions discussed in Section 2.1 of this SE. Establishing what is meant by the CRE and the CRE boundary will preclude ambiguity in the implementation of the program.

Configuration control and preventive maintenance of the CRE boundary: This element is intended to ensure the CRE boundary is maintained in its design condition. Guidance for implementing this element is contained in RG 1.196 (Reference 4), which endorsed, with exceptions, NEI 99-03 (Reference 6). Maintaining the CRE boundary in its design condition provides assurance that its leak-tightness will not significantly degrade between CRE inleakage determinations.

Assessment of CRE habitability at the frequencies stated in Sections C.1 and C.2 of RG 1.197, Revision 0 (Reference 5), and measurement of unfiltered air leakage into the CRE in accordance with the testing methods and at the frequencies stated in Sections C.1 and C.2 of RG 1.197. Assessing CRE habitability at the NRC-accepted frequencies provides assurance that significant degradation of the CRE boundary will not go undetected between CRE inleakage determinations. Determination of CRE inleakage using test methods acceptable to the NRC staff assures that test results are reliable for ascertaining CRE boundary operability. Determination of CRE inleakage at the NRC-accepted frequencies provides assurance that significant degradation of the CRE boundary will not occur between CRE inleakage determinations.

Licensee controlled programs will be used to verify the integrity of the CRE boundary. Conditions that generate relevant information from those programs will be entered into the corrective action process, trended, and used as part of a 36-month assessment program for the CRE boundary. The NRC staff recognizes that non-pressurized CREs may not be able to conduct a differential pressure test, nevertheless, the staff believes that all plants requesting the adoption of TSTF-448 should include in their request, a method to collect data that will serve as input to a periodic assessment of the CRE boundary. The use of programs to verify the integrity of the CRE boundary, the use of a corrective action program, and trending of relevant information as part of the assessment program will provide additional assurance that significant degradation of the CRE boundary will not go undetected between CRE inleakage determinations.

Quantitative limits on unfiltered inleakage. This element is intended to establish the CRE inleakage limit as the CRE unfiltered infiltration rate assumed in the CRE occupant radiological consequence analyses of DBAs. Having an unambiguous criterion for the CRE boundary to be considered operable in order to meet LCO 3.7.8 will ensure that associated action requirements will be consistently applied in the event of CRE degradation resulting in inleakage exceeding the limit.

Consistent with TSTF-448, Revision 3, the program states that the provisions of SR 3.0.2 are applicable to the program frequencies for performing the activities required by program paragraph number c, parts (i) and (ii) (assessment of CRE habitability and measurement of CRE inleakage). This statement is needed to avoid confusion. SR 3.0.2 is applicable to the

surveillance that references the testing in the CRE Habitability Program. However, SR 3.0.2 is not applicable to Administrative Controls unless specifically invoked. Providing this statement in the program eliminates any confusion regarding whether SR 3.0.2 is applicable, and is acceptable.

Consistent with TSTF-448, Revision 3, proposed TS 5.5.17 states that (1) a CRE Habitability Program shall be established and implemented, (2) the program shall include all of the NRC-staff required elements, as described above, and (3) the provisions of SR 3.0.2 shall apply to program frequencies. Therefore, TS 5.5.17, which is consistent with the model program TS approved by the NRC staff in TSTF-448, Revision 3, is acceptable.

3.5 Implementation of New Surveillance and Assessment Requirements by the Licensee

The licensee has proposed license conditions regarding the initial performance of the new surveillance and assessment requirements. The new license conditions adopted the conditions in section 2.3 of the model application published in the *Federal Register* on January 17, 2007 (72 FR 2022). Plant specific changes were made to these proposed license conditions. The proposed plant specific license conditions are consistent with the model application, and are acceptable.

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 SRs. 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 (72 FR 45456). 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.

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Date: July 29, 2008

7.0 REFERENCES

1. NRC Generic Letter 2003-01, "Control Room Habitability," dated June 12, 2003, (GL 2003-01).

2. ASTM E 741 - 00, "Standard Test Method for Determining Air Change in a Single Zone by Means of a Tracer Gas Dilution," 2000, (ASTM E741).

3. NRC Regulatory Issue Summary 2005-20: Revision to Guidance Formerly Contained in NRC Generic Letter 91-18," Information to Licensees Regarding Two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability," dated September 26, 2005 (RIS 2005-20).

4. Regulatory Guide 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," Revision 0, dated May 2003.

5. Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003.

6. NEI 99-03,"Control Room Habitability Assessment Guidance," Revision 0, dated June 2001.