Calvert Cliffs Nuclear Power Plant
Constellation Generation Group, LLC

1650 Calvert Cliffs Parkway
Lusby, Maryland 20657

Constellation Energy

June 29, 2007

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: Revise Technical Specifications Regarding Control Room Habitability in Accordance with TSTF-448 Using the Consolidated Line Item Improvement Process

REFERENCES:

(a) Notice of Availability of Technical Specification Improvement to Modify Requirements Regarding Control Room Habitability Using the Consolidated Line Item Improvement Process, 72 FR 2022, dated January 17, 2007

(b) Letter from B. S. Montgomery (CCNPP) to the Document Control Desk (NRC), dated November 3, 2005, License Amendment Request: Revision to Accident Source Term and Associated Technical Specifications

Pursuant to 10 CFR 50.90, Calvert Cliffs Nuclear Power Plant, Inc. hereby requests an amendment to Renewed Operating License Nos. DPR-53 and DPR-69 to modify Technical Specification requirements for Control Room emergency ventilation system in accordance with Technical Specification Task Force-448, Revision 3. This proposed amendment request is based on the Nuclear Regulatory Commission staff's model application described in Reference (a). Attachment (1) provides a description of the proposed change, the requested confirmation of applicability and plant specific regulatory commitments. Attachment (2) provides the marked up Technical Specification pages. Attachment (3) provides the existing Technical Specification Bases pages marked up to show the proposed changes. The Technical Specification Bases pages are provided for information only.

Safety Committee Review

The Plant Operations Review Committee has reviewed the proposed change and concurs that operation with the proposed change will not result in an undue risk to the health and safety of the public.

Schedule

Calvert Cliffs requests approval of the proposed License Amendment by June 1, 2008. Implementation of this proposed change must be concurrent with the change to the accident source term requested in Reference (b). These two license amendment requests are related and support each other. The accident source term license amendment request implementation is contingent upon plant modifications needed to support the analytical assumptions in the amendment request. This amendment request is contingent upon implementation of the alternate source term amendment request to support operability of the Control

A001
A002

Room emergency ventilation system without compensatory measures. We therefore request implementation of this proposed amendment request concurrent with the implementation of the accident source term amendment request and we request an implementation period of 60 days to allow for operator training and the required procedure changes.

Should you have questions regarding this matter, please contact Mr. Jay S. Gaines at (410) 495-5219.

Very truly yours,

Joseph E. Pollock

STATE OF MARYLAND :
: **TO WIT:**
COUNTY OF CALVERT :

I, Joseph E. Pollock, being duly sworn, state that I am Plant General Manager - Calvert Cliffs Nuclear Power Plant, Inc. (CCNPP), and that I am duly authorized to execute and file this License Amendment Request on behalf of CCNPP. To the best of my knowledge and belief, the statements contained in this document are true and correct. To the extent that these statements are not based on my personal knowledge, they are based upon information provided by other CCNPP employees and/or consultants. Such information has been reviewed in accordance with company practice and I believe it to be reliable.

Joseph E. Pollock

Subscribed and sworn before me, a Notary Public in and for the State of Maryland and County of Calvert, this 29 day of June, 2007.

NOTARY PUBLIC

WITNESS, my Hand and Notarial Seal:

Wendy L. Hunter
Notary Public

Wendy L. Hunter
NOTARY PUBLIC
Calvert County, Maryland
My Commission Expires 01/01/10

My Commission Expires: 6/29/07
Date

JEP/PSF/bjd

Attachments: (1) Technical Basis and No Significant Hazards Consideration
(2) Marked up Technical Specification Pages
(3) Marked up Technical Specification Bases Pages

cc: D. V. Pickett, NRC
S. J. Collins, NRC
Resident Inspector, NRC
R. I. McLean, DNR

ATTACHMENT (1)

TECHNICAL BASIS AND

NO SIGNIFICANT HAZARDS CONSIDERATION

TABLE OF CONTENTS

1.0 DESCRIPTION

The proposed amendment would modify Technical Specification requirements related to Control Room envelope habitability in Technical Specification 3.7.8, Control Room Emergency Ventilation System (CREVS) and Technical Specification Section 5.5, Programs and Manuals.

The changes are consistent with the Nuclear Regulatory Commission (NRC) approved Technical Specification Task Force (TSTF)-448, Revision 3. The availability of this Technical Specification improvement was published in the Federal Register on January 17, 2007 (72 FR 2022) as part of the consolidated line item improvement process (CLIIP).

An additional editorial change is also proposed. We are proposing the removal of a footnote currently contained in the Completion Time of Technical Specification 3.7.8, Required Action D. The footnote was added in Amendment Nos. 250/227 and applied only to a period of time during the Unit 1 2002 refueling outage.

2.0 ASSESSMENT

2.1 Applicability of Published Safety Evaluation

Calvert Cliffs Nuclear Power Plant (Calvert Cliffs) has reviewed the safety evaluation dated January 17, 2007 as part of the CLIIP. The review included a review of the NRC Staff's evaluation as well as the supporting information provided to support TSTF-448, Revision 3. The conclusions of our review are below.

To support the correct application of the safety evaluation sections to Calvert Cliffs, the following general information is provided. The Control Room and the Cable Spreading Room are incorporated into a single ventilation system serving both Units 1 and 2. The Control Room ventilation system continuously functions in the recirculation mode. The ventilation system is not designed to maintain the ventilated areas pressurized. The Control Room ventilation system operates in a neutral (non-pressurized) mode even in its emergency mode configuration.

Section 2.3 of the safety evaluation, Regulations Applicable to Control Room Habitability, describes how the proposed license amendment conforms to the General Design Criteria in Appendix A of 10 CFR Part 50. Note that Calvert Cliffs Units 1 and 2 were not licensed under the General Design Criteria of 10 CFR Part 50. Instead, Calvert Cliffs Units 1 and 2 were licensed under the draft General Design Criteria, which is considered similar plant-specific design criteria and is described in Calvert Cliffs licensing basis documents.

Section 3.2 of the safety evaluation, Editorial Changes, does not apply to this license amendment request, since we are not proposing the editorial changes described.

Section 3.3 of the safety evaluation describes various evaluations performed for different combinations of proposed changes. This section applies to Calvert Cliffs Technical Specification 3.7.8, CREVS. The portions of Section 3.3 of the safety evaluation that apply to this proposed license amendment are Evaluation 2 and Evaluation 4. For Evaluation 2, please note that Calvert Cliffs does not have the same Condition A as the Improved Standard Technical Specifications (ISTS). Calvert Cliffs Technical Specification 3.7.8, Conditions A, B, and C are plant specific Conditions based on the design of our Control Room ventilation system. Technical Specification 3.7.8, Condition D is similar to Condition A of the ISTS referenced in the NRC staff safety evaluation. Therefore, Technical Specification 3.7.8, Condition D has been changed (as shown in Attachment 2) in accordance with the changes proposed for

Condition A of the ISTS. The portions of the NRC staff safety evaluation that discuss Condition A of the ISTS apply to the proposed changes to Technical Specification 3.7.8, Condition D of the Calvert Cliffs Technical Specifications.

Section 3.4 of the safety evaluation describes the acceptability of each program element that must be included in the Control Room Envelope Habitability Program. This section applies to Calvert Cliffs Technical Specification 5.5.17, Control Room Envelope Habitability Program. Please note that the Calvert Cliffs Control Room ventilation system operates in a neutral (non-pressurized) mode even in its emergency mode configuration. Therefore, item d of ISTS Technical Specification 5.5.18 does not apply to Calvert Cliffs because it addresses Control Room envelope pressure testing. All other program elements apply to Calvert Cliffs and are adopted as shown on the marked up pages contained in Attachment (2).

Calvert Cliffs has concluded that the justifications presented in the TSTF proposal and the safety evaluation prepared by the NRC staff are applicable to Calvert Cliffs Units 1 and 2 as modified above and justify this amendment request for incorporation of the proposed changes into the Calvert Cliffs Technical Specifications.

2.2 Optional Changes and Variations

Calvert Cliffs is not proposing any variations or deviations (other than the clarifications described above) from the Technical Specification changes described in TSTF-448, Revision 3 or the NRC staff's model safety evaluation dated January 17, 2007.

Calvert Cliffs proposes the following as a license condition to support implementation of the proposed Technical Specification changes:

Upon implementation of Amendment Nos. XXX/YYY adopting TSTF-448, Revision 3, the determination of Control Room envelope unfiltered air inleakage as required by Surveillance Requirement (SR) 3.7.8.4 in accordance with Technical Specification 5.5.17.c.(i), and the assessment of Control Room envelope habitability as required by Technical Specification 5.5.17.c.(ii) shall be considered met. Following implementation:

(a) The first performance of SR 3.7.8.4 in accordance with Technical Specification 5.5.17.c.(i), shall be within the specified Frequency of 6 years (plus the 18 month allowance of SR 3.0.2) as measured from December 13, 2004, the date of the most recent successful tracer gas test, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.

(b) The first performance of the periodic assessment of Control Room envelope habitability per Technical Specification 5.5.17.c.(ii) shall be within the next 9 months, because the time period since the most recent successful tracer gas test (December 13, 2004) is greater than 3 years.

An additional editorial change is also proposed. We are proposing the removal of a footnote currently contained in the Completion Time of Technical Specification 3.7.8, Required Action D. The footnote was added in Amendment Nos. 250/227 and applied only to a period of time during the Unit 1 2002 refueling outage. The conditions of the footnote no longer apply since the 2002 refueling outage was completed in the spring of that year.

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Determination

Calvert Cliffs has reviewed the proposed No Significant Hazards Determination published in the Federal Register as part of the CLIIP. Calvert Cliffs has concluded that the proposed No Significant Hazards Determination presented in the Federal Register notice is applicable to Calvert Cliffs and is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

In addition to the No Significant Hazards Determination published in the Federal Register as part of the CLIIP, we are providing an additional No Significant Hazards Considerations discussion to address the editorial change we have requested. We are proposing the removal of a footnote currently contained in the Completion Time of Technical Specification 3.7.8, Required Action D. The footnote was added in Amendment Nos. 250/227 and applied only to a period of time during the Unit 1 2002 refueling outage.

i. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: no

The removal of a footnote that is no longer applicable is an editorial change that does not affect accident initiators or precursors, nor alter the design assumptions, conditions or configuration of the facility. The proposed change also does not affect the ability of structures, systems, or components to perform their intended function to mitigate the consequences of an accident. Therefore, the proposed editorial change does not increase the probability or consequences of an accident previously evaluated.

ii. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: no

The proposed change is the editorial removal of a footnote that no longer applies. The removal of a footnote that no longer applies does not impact the accident analyses. Additionally, it does not add or modify any existing plant equipment and does not introduce any new operational methods. Therefore, the proposed editorial change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

iii. Does the proposed change involve a significant reduction in the margin of safety?

Response: no

The proposed editorial change does not affect safety analyses acceptance criteria or safety system operation. Removal of a footnote that is no longer applicable does not result in plant operation outside the design basis. Therefore, the proposed editorial change does not involve a reduction in the margin of safety.

3.2 Regulatory Commitments

No regulatory commitments are identified in this license amendment request.

4.0 ENVIRONMENTAL EVALUATION

Calvert Cliffs has reviewed the environmental evaluation included in the model safety evaluation dated January 17, 2007 as part of the CLIIP. We have concluded that the NRC Staff's findings presented in that

evaluation are applicable to Calvert Cliffs and the evaluation is hereby incorporated by reference for this application. A Technical Specification Bases Control Program already exists in the Calvert Cliffs Technical Specifications (Technical Specification 5.5.14).

ATTACHMENT (2)

MARKED UP TECHNICAL SPECIFICATION PAGES

3.7 PLANT SYSTEMS

3.7.8 Control Room Emergency Ventilation System (CREVS)

LCO 3.7.8 Two CREVS trains shall be OPERABLE.

---------- NOTES ----------

1. Only one CREVS redundant component is required to be OPERABLE during movement of irradiated fuel assemblies when both Units are in MODE 5 or 6, or defueled.

2. Only one CREVS train is required to be OPERABLE for the movement of irradiated fuel assemblies.

3. The control room envelope (CRE) boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, 3, 4,
During movement of irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more ducts with one outside air intake isolation valve inoperable in MODE 1, 2, 3, or 4.	A.1 Close the OPERABLE outside air intake valve in each affected duct.	Immediately
B. Toilet area exhaust isolation valve inoperable.	B.1 Restore valve to OPERABLE status.	24 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One exhaust to atmosphere isolation valve inoperable in MODE 1, 2, 3, or 4.	C.1 Restore valve to OPERABLE status.	7 days
D. One CREVS train inoperable for reasons other than Condition A, B, C, or D in MODE 1, 2, 3, or 4.	D.1 Restore CREVS train to OPERABLE status.	7 days
E. Required Action and associated Completion Time of Condition A, B, C, or D not met in MODE 1, 2, 3, or 4.	E.1 Be in MODE 3. AND E.2 Be in MODE 5.	6 hours 36 hours
F. Required Action and associated Completion Time of Condition B not met during movement of irradiated fuel assemblies.	F.1 Suspend movement of irradiated fuel assemblies. OR One or more CREVS trains inoperable due to an inoperable CRE boundary during movement of irradiated fuel assemblies.	Immediately

* This Action is extended from 7 days to 18 days (for loss of the emergency power supply only) during the Unit 1 2002 Refueling Outage. This extension begins when the No. 1A Diesel Generator allowed outage time as specified in Technical Specification 3.8.1 expires. The extension ends when No. 1A Diesel Generator is declared OPERABLE on 4 kV Bus No. 11 under Technical Specification 3.8.1 or 18 days has expired, whichever is first.

Insert 1

D.	One or more CREVS trains inoperable due to inoperable CRE boundary in MODE 1, 2, 3, or 4.	D.1 Initiate action to implement mitigating actions. AND	Immediately
		D.2 Verify mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits. AND	24 hours
		D.3 Restore CRE boundary to OPERABLE status.	90 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
H G. Two CREVS trains inoperable for reasons other than Condition A, B, or C in MODE 1, 2, 3, 4 or during movement of irradiated fuel assemblies. OR One or more ducts with two outside air intake isolation valves inoperable in MODE 1, 2, 3, 4 or during movement of irradiated fuel assemblies. OR Two exhaust to atmosphere isolation valves inoperable in MODE 1, 2, 3, 4 or during movement of irradiated fuel assemblies.	H G.1 Enter LCO 3.0.3. AND H G.2 Suspend movement of irradiated fuel assemblies.	Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.8.1	Operate each required CREVS filter train for ≥ 15 minutes.	31 days
SR 3.7.8.2	Perform required CREVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.8.3	Verify each CREVS train actuates on an actual or simulated actuation signal.	24 months
SR 3.7.8.4	Perform required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program	In accordance with the Control Room Envelope Habitability Program

5.5 Programs and Manuals

b. Air lock testing acceptance criteria are:

1. Overall air lock leakage rate is $\leq 0.05\ L_a$ when tested at $\geq P_a$.
2. For each door, leakage rate is $\leq 0.0002\ L_a$ when pressurized to ≥ 15 psig.

The provisions of SR 3.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program.

The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.

Insert 2 5.5.17 Control Room Envelope Habitability Program

Insert 2

5.5.17 Control Room Envelope Habitability Program

A control Room Envelope (CRE) Habitability Program shall be established and implemented to ensure that CRE habitability is maintained such that, with an OPERABLE Control Room Emergency Ventilation System (CREVS), 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 design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of 5 rem whole body or its equivalent to any part of the body for the duration of the accident. The program shall include the following elements:

a. The definition of CRE and the CRE boundary.

b. Requirements for maintaining CRE boundary in its design condition including configuration control and preventive maintenance.

c. Requirements for (i) 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 Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003, and (ii) assessing CRE habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.

d. The quantitative limits on unfiltered air inleakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air inleakage measured by the testing described in paragraph c. The unfiltered air inleakage limit for radiological challenges is the inleakage flow rate assumed in the licensing basis analyses of DBA consequences. Unfiltered air inleakage limits for hazardous chemicals must ensure that exposure of CRE occupants to these hazards will be within the assumptions in the licensing basis.

e. The provisions of SR 3.0.2 are applicable to the Frequencies for assessing CRE habitability, determining CRE unfiltered inleakage, and assessing the CRE boundary as required by paragraph c.

ATTACHMENT (3)

MARKED UP TECHNICAL SPECIFICATION BASES PAGES

B 3.7 PLANT SYSTEMS

B 3.7.8 Control Room Emergency Ventilation System (CREVS)

BASES

BACKGROUND The CREVS provides a protected environment from which ~~operators~~ occupants can control the unit following an uncontrolled release of radioactivity, chemicals, or ~~toxic gas~~ smoke. The CREVS is a shared system providing protection for both Unit 1 and Unit 2. hazardous

The CREVS consists of two trains, including redundant outside air intake ducts and redundant emergency recirculation filter trains that recirculate and filter the Control Room envelope (CRE) air. The CREVS also has shared equipment, including an exhaust-to-atmosphere duct containing redundant isolation valves and a normally closed roof-mounted hatch, an exhaust-to-atmosphere duct from the kitchen and toilet area of the Control Room containing a single isolation valve, and common supply and return ducts in both the standby and emergency recirculation portions of the system. The shared equipment is considered to be a part of each CREVS train. Each CREVS emergency recirculation filter train consists of a prefilter, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodine) and a fan. Instrumentation which actuates the system is addressed in LCOs 3.3.4 and 3.3.8.

and a CRE boundary that limits the inleakage of unfiltered air

Ductwork, valves or dampers, doors and barriers also form part of the system.

Insert 3

The CREVS is an emergency system, parts of which may also operate during normal unit operations in the standby mode of operation. Actuation of the CREVS ensures the system is in the emergency recirculation mode of operation, ensures the unfiltered outside air intake and unfiltered exhaust-to-atmosphere valves are closed, and aligns the system for emergency recirculation of ~~Control Room~~ air through the redundant trains of HEPA and charcoal filters. The prefilters remove any large particles in the air and any entrained water droplets present to prevent excessive loading of the HEPA filters and charcoal adsorbers. A control room recirculation signal (CRRS) initiates this filtered ventilation of the air supply to the ~~control room~~.

CRE

CRE

The air recirculating through the ~~Control Room~~ is continuously monitored by a radiation detector. Detector

output above the setpoint will cause actuation of the CREVS. The CREVS operation in maintaining the Control Room habitable is discussed in Reference 1, Section 9.8.2.3.

The redundant emergency recirculation filter train provides the required filtration should an excessive pressure drop develop across the other filter train. A normally closed hatch and double isolation valves are arranged in series to prevent a breach of isolation from the outside atmosphere, except for the exhaust from the Control Room kitchen and toilet areas. The CREVS is designed in accordance with Seismic Category I requirements.

a habitable environment in the CRE

The CREVS is designed to maintain ~~the Control Room environment~~ for 30 days of continuous occupancy after a DBA without exceeding a 5 rem whole body dose or its equivalent to any part of the body.

APPLICABLE SAFETY ANALYSES

The CREVS components are generally arranged in redundant safety-related ventilation trains although some equipment is shared between trains.

CRE occupants

The CREVS provides automatic airborne radiological protection for the ~~Control Room Operators~~, as demonstrated by the ~~Control Room accident~~ dose analyses for the most limiting design basis ~~LOCA~~ fission product release presented in Reference 1, Chapter 14.

CRE occupant

Insert 4

The CREVS also provides manually actuated airborne radiological protection for the Control Room operations, for the design basis fuel handling accident presented in Reference 1, Chapter 14. The fuel handling accident does not assume a single failure to occur.

The worst case single active failure of a component of the CREVS, assuming a loss of offsite power, does not impair the ability of the system to perform its design function (except for one valve in the shared duct between the Control Room and the emergency recirculation filter trains).

The CREVS satisfies 10 CFR 50.36(c)(2)(ii), Criterion 3.

LCO

The CREVS is required to be OPERABLE to ensure that the Control Room is isolated and at least one emergency recirculation filter train is available, assuming a single active failure. Total system failure could result in ~~a Control Room Operator receiving~~ exceeding a dose ~~in excess~~ of 5 rem whole body ~~dose~~ in the event of a large radioactive release.

The CREVS is considered limit CRE occupant OPERABLE when the individual components necessary to ~~control operator~~ exposure are OPERABLE. For MODEs 1, 2, 3, and 4, redundancy is required and CREVS is considered OPERABLE when:

a. Both supply fans are OPERABLE;

b. Both recirculation fans are OPERABLE;

c. Both fans included in the emergency recirculation filter trains are OPERABLE;

d. Both HEPA filters and charcoal adsorbers are not excessively restricting flow, and are capable of performing their filtration functions;

e. Ductwork, valves, and dampers are OPERABLE, such that air circulation can be maintained; and

f. The Control Room outside air intake can be isolated for the emergency recirculation mode of operation, assuming a single failure.

Insert 6

The LCO is modified by a Note which indicates that only one CREVS redundant component is required to be OPERABLE during movement of irradiated fuel assemblies, when both units are in MODEs 5 or 6, or defueled. Therefore, with both units in other than MODEs 1, 2, 3, or 4, redundancy is not required for movement of irradiated fuel assemblies and CREVS is considered OPERABLE when:

a. One supply fan is OPERABLE;

b. One recirculation fan is OPERABLE;

c. One fan included in the OPERABLE emergency recirculation filter train is OPERABLE;

d. One HEPA filter and charcoal adsorber are not excessively restricting flow, and are capable of performing their filtration functions; and

e. Associated ductwork, valves, and dampers are OPERABLE, such that air circulation can be maintained and the Control Room can be isolated for the emergency recirculation mode.

When implementing the Note (since redundancy is not required), only one of the two isolation valves in each outside air intake duct is required, and only one of the two isolation valves in the exhaust to atmosphere duct is required. However, the non-operating flow path must be capable of providing isolation of the Control Room from the outside atmosphere.

The LCO is modified by a second Note which indicates that only one CREVS train is required to be OPERABLE for the movement of irradiated fuel assemblies. Therefore, redundancy is not required for movement of irradiated fuel assemblies and only one CREVS train is required to be OPERABLE.

Insert 7 →

~~In addition, the Control Room boundary must be maintained with sufficient integrity to control operator exposure following an accident.~~

APPLICABILITY

In MODEs 1, 2, 3, and 4, the CREVS must be OPERABLE to ~~limit operator exposure~~ ensure that the CRE will remain habitable during and following a DBA.

During movement of irradiated fuel assemblies, the CREVS must be OPERABLE to cope with the release from a fuel handling accident.

ACTIONS

A.1

With one or more ducts with one Control Room outside air intake isolation valve inoperable in MODEs 1, 2, 3, or 4, the OPERABLE Control Room outside air intake valve in each affected duct must be closed immediately. This places the OPERABLE Control Room outside air intake isolation valve in each affected duct in its safety function required position.

B.1

With the toilet area exhaust isolation valve inoperable, action must be taken to restore OPERABLE status within

24 hours. In this Condition, the toilet area exhaust cannot be isolated, therefore, the valve must be restored to OPERABLE status. The 24 hour period allows enough time to repair the valve while limiting the time the toilet area is open to the atmosphere. The 24 hour Completion Time is based on the low probability of a DBA occurring during this time period.

C.1

With one exhaust to atmosphere isolation valve inoperable in MODEs 1, 2, 3, or 4, action must be taken to restore OPERABLE status within seven days. In this Condition, the remaining OPERABLE exhaust to atmosphere isolation valve is adequate to isolate the Control Room. However, the overall reliability is reduced because a single failure in the OPERABLE exhaust to atmosphere isolation valve could result in loss of exhaust to atmosphere isolation valve function. The seven day Completion Time is based on the low probability of a DBA occurring during this time period, and the ability of the remaining exhaust to atmosphere isolation valve to provide the required isolation capability.

Insert 8

E D.1

, or D

With one CREVS train inoperable for reasons other than Conditions A, B, ~~or~~ C in MODEs 1, 2, 3, or 4, action must be taken to restore OPERABLE status within seven days. In this Condition, the remaining OPERABLE CREVS subsystem is adequate to perform ~~Control Room radiation~~ protection function. However, the overall reliability is reduced because a ~~single~~ failure in the OPERABLE CREVS train could result in loss of CREVS function. The seven day Completion Time is based on the low probability of a DBA occurring during this time period, and the ability of the remaining train to provide the required capability.

CRE occupant

F E.1 and F E.2

, or E

If the Required Actions and associated Completion Times of Conditions A, B, C, ~~or~~ D are not met in MODEs 1, 2, 3, or 4, the unit must be placed in a MODE that minimizes the accident risk. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are

reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

G F.1

Action G F provides the actions to be taken when the Required Action and associated Completion Time of Condition B cannot be met. It requires the immediate suspension of movement of irradiated fuel assemblies. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel assemblies to a safe position. Since only one CREVS train must be OPERABLE for movement of irradiated fuel assemblies, the Required Action is applicable only to the required CREVS train.

or with one or more CREVS trains inoperable due to an inoperable CRE boundary

H B.1

, or D

If both CREVS trains are inoperable for reasons other than Conditions A, B, ~~or~~ C, or if one or more ducts have two outside air intake isolation valves inoperable, or if two exhaust to atmosphere isolation valves are inoperable, in MODEs 1, 2, 3, or 4, or during movement of irradiated fuel assemblies, the CREVS may not be capable of performing the intended function and the unit is in a condition outside the accident analyses. Therefore, LCO 3.0.3 must be entered immediately and movement of irradiated fuel must be suspended immediately. This does not preclude the movement of fuel assemblies to a safe condition.

SURVEILLANCE REQUIREMENTS

SR 3.7.8.1

Standby systems should be checked periodically to ensure that they function properly. Since the environment and normal operating conditions on this system are not severe, testing each required CREVS filter train once every month provides an adequate check on this system.

The 31 day Frequency is based on the known reliability of the equipment, and the two filter train redundancy available.

SR 3.7.8.2

This SR verifies that the required CREVS testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The CREVS filter tests are in accordance with portions of Reference 2. The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.7.8.3

This SR verifies each CREVS train starts and operates on an actual or simulated actuation signal (CRRS). This test is conducted on a 24 month Frequency. This Frequency is adequate to ensure the CREVS is capable of starting and operating on an actual or simulated CRRS.

Insert 9

REFERENCES

1. UFSAR
2. Regulatory Guide 1.52, Revision 2, "Design, Testing, and Maintenance Criteria for Post Accident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants," March 1978

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

Insert 3

The CRE is the area within the confines of the CRE boundary that contains the spaces that Control Room occupants inhabit to control the Unit during normal and accident conditions. This area encompasses the Control Room and may encompass non-critical areas to which frequent personnel access or continuous occupancy is not necessary in the event of an accident. The CRE is protected during normal operation, natural events, and accident conditions. The CRE boundary is the combination of walls, floor, roof, ducting, doors, penetrations and equipment that physically form the CRE. The OPERABILITY of the CRE boundary must be maintained to ensure that the inleakage of unfiltered air into the CRE will not exceed the inleakage assumed in the licensing basis analysis of design basis accident (DBA) consequences to CRE occupants. The CRE and its boundary are defined in the Control Room Envelope Habitability Program.

Insert 4

The CREVS provides protection from smoke and hazardous chemicals to the CRE occupants. The analysis of hazardous chemical releases demonstrates that the toxicity limits are not exceeded in the CRE following a hazardous chemical release. The evaluation of a smoke challenge demonstrates that it will not result in the inability of the CRE occupants to control the reactor either from the Control Room or from the remote shutdown panels.

Insert 6

In order for the CREVS trains to be considered OPERABLE, the CRE boundary must be maintained such that the CRE occupant dose from a large radioactive release does not exceed the calculated dose in the licensing basis consequence analysis for DBAs, and that CRE occupants are protected from hazardous chemicals and smoke.

Insert 7

The LCO is modified by a third Note allowing the CRE boundary to be opened intermittently under administrative controls. 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 the 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 the need for CRE isolation is indicated.

Insert 8

D.1, D.2, and D.3

If the unfiltered inleakage of potentially contaminated air past the CRE boundary and into the CRE can result in CRE occupant radiological dose greater than the calculated dose of the licensing basis analyses of DBA consequences (allowed to be up to 5 rem TEDE), or inadequate protection of CRE occupants from hazardous chemicals or smoke, the CRE boundary is inoperable. Actions must be taken to restore an OPERABLE CRE boundary within 90 days.

During the period that the CRE boundary is considered inoperable, action must be initiated to implement mitigation actions to lessen the effect on CRE occupants from the potential hazards of a radiological or

chemical event or a challenge from smoke. Required Action D.3 allows time to restore the CRE boundary to OPERABLE status provided mitigating actions can ensure that the CRE remains within the licensing basis habitability limits for the occupants following an accident. Compensatory measures are discussed in Reference 3. These compensatory measures may also be used as mitigating actions as required by Required Action D.2. Temporary analytical methods may also be used as compensatory measures to restore OPERABILITY. Actions must be taken within 24 hours to verify that, in the event of a DBA, the mitigating actions will ensure that CRE occupant radiological exposures will not exceed the calculated dose of the licensing basis analysis of DBA consequences, and that CRE occupants are protected from hazardous chemicals and smoke. These mitigating actions (i.e., actions that are taken to offset the consequences of the inoperable CRE boundary) should be preplanned for implementation upon entry into the condition, regardless of whether entry is intentional or unintentional.

The 24 hour Completion Time is reasonable based on the determination that the mitigating actions will ensure protection of the 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 problems with the CRE boundary.

Insert 9

SR 3.7.8.4

This SR verifies the OPERABILITY of the CRE boundary by testing for unfiltered air inleakage past the CRE boundary and into the CRE. The details of the testing are specified in the Control Room Envelope Habitability Program.

The CRE is considered habitable when the radiological dose to the CRE occupants calculated in the licensing basis analyses of DBA consequences is no more than 5 rem TEDE and the CRE occupants are protected from hazardous chemicals and smoke. This SR verifies that the unfiltered air inleakage into the CRE is no greater than the flow rate assumed in the licensing basis analyses of DBA consequences. When unfiltered air inleakage is greater than the assumed flow rate, Condition E must be entered. Options for restoring the CRE boundary to OPERABLE status include changing the licensing basis DBA consequences analysis, repairing the CRE boundary, or a combination of these actions. Depending upon the nature of the problem and the corrective action, a full scope inleakage test may not be necessary to establish that the CRE boundary has been restored to OPERABLE status.